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AND

HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

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TO OUR READERS.

THE annexed index of the contents of the past twenty-six numbers of the *Journal of Horticulture* is a sufficient indication of the comprehensiveness of the work. In the variety of subjects and the manner of their treatment it is hoped the last completed volume may be worthy of its place in the long line of its predecessors, which collectively are admitted to form an encyclopædia of practical gardening such as can only be produced by long years of work by the best men of the time in which they practised.

We are particularly gratified by the fact that there has been no break in our staff of contributors during the year. The old remain with us, and their longer experience will not render their valued services less reliable, while young men of much promise have also shared with credit to themselves and satisfaction to us in the completion of the volume.

It is pleasurable to all—to writers and conductors alike—to have testimony that their efforts to provide and disseminate information are fully appreciated. We have received far more letters of approval than can possibly be published, and brief extracts from four must suffice as typical of old subscribers and new, of gardeners and amateurs:—

“My horticultural pursuits are my greatest pleasure. At my very advanced age, now upwards of eighty years, I am still able to occupy and amuse myself, and having now no head gardener as of old, I superintend everything myself with the aid of the cherished Journal!—always eagerly looked for every week. I believe I must be one of its oldest recipients of benefits. Even when abroad I had it regularly forwarded to me.”

That is the testimony of very matured experience. A newer reader, yet who has had time to form a judgment, and who has clearly not given his verdict without examining the evidence, observes:—

“I have just been re-reading the numbers of the Journal issued since January, and looking back at the year's work am better able to appreciate the value of the teaching it contains than I was as quite a beginner in horticulture last winter.”

Nor is the testimony of a gardener, who ranks amongst the most competent, less reassuring. Here it is:—

“I take this opportunity of thanking you most heartily for the very large amount of assistance I have received during the last few years through the medium of your excellent Journal. I have not one word to say in depreciation of any other similar publication, but for practical utility the *Journal of Horticulture* stands in my opinion simply unique! As such I have very strongly recommended my foreman to purchase the Journal in preference to all other gardening periodicals. I am glad to inform you he is now doing so, and is both well pleased and most ably instructed.”

Last, but not the least valued, is an amateur's testimony—a lady amateur—whose garden is her great delight. She writes:—

“How I wish more would take and study the Journal. Useful though cheaper papers may be they lack authority, while the Journal represents the highest scientific horticulturists' knowledge and the experiences of many eminent amateurs. I am more instructed by it in my small sphere and more charmed with it than ever.”

It will thus be seen that, thanks to our able coadjutors, the Journal maintains its popularity, and with their continued aid it will merit the approval of old and win the confidence of young readers, to the mutual advantage of them and ourselves. Our cordial greetings to all.



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<i>Epilobium obcordatum</i>	246	<i>Oncidium crispum</i>	41	<i>Saxifraga granulata flore pleno</i>	139
Flower-pot Cleanser, the Simplex	119	<i>Oxalis cernua</i>	50	Singleton Abbey	201
Grapes, Alnwick Seedling	536	<i>Passiflora Buonaparteæ</i>	383	<i>Tacsonia manicata</i>	291
„ Foster's Seedling	557	Peaches from a Tree in a Pot	207	<i>Torenia asiatica</i>	457
„ Exhibition stands for	84	Peach Moth (<i>Tortrix Woeberiana</i>)	110	<i>Tortrix Woeberiana</i>	110
Greenhouse, an Amateur's	286	<i>Pentstemon cordifolius</i>	163	Turf-cutting Machine, Drummond's	31
Gooseberry, Whinham's Industry	253	Plum, Rivers' Monarch	585	<i>Venidium calendulaceum</i>	480
<i>Hæmatoxylon Campechianum</i>	535	<i>Polemonium Richardsoni</i>	47	<i>Viola pyrolæfolia</i>	155
<i>Helenium pumilum</i>	95	<i>Potentilla Menziesi</i>	143		



COMING EVENTS

2	TH	Reigate, Hitchin, Bath, and Shepperton Shows.
3	F	Tunbridge Wells. 1882
4	S	Crystal Palace Rose Show; Eltham.
5	SUN	FIFTH SUNDAY AFTER TRINITY.
6	M	
7	TU	National Rose Society's Show, Kensington.
8	W	Wimbleton; Sutton.

THE ROYAL STRAWBERRY GARDENS.

THE above is the heading of a circular that fell into my hands a week ago; it was adorned with the Royal Arms, and contained the following announcement:—"Thomas Sharpe begs to inform his patrons and the public that his Strawberries are now ripe. An early inspection is solicited. The public are admitted to the beds and allowed to gather and eat the fruit at 9d. each person." As I was informed on good authority that the method of culture adopted by Mr. Sharpe is as remarkable as the manner of disposing of some of the produce is novel, I was impelled to inspect the plants that had produced the splendid dishes to which I had seen first-prize cards attached at more than one exhibition.

The Royal Strawberry Gardens, then, are situated at Knowle Hill, Chertsey, but the nearest station is Virginia Water, a mile distant. As many persons know, the district is delightful and salubrious, and on that account was selected by the late Mr. Holloway for those princely gifts—the Holloway College for women, and Sanatorium for the mentally afflicted, on which have been expended about a million pounds sterling. The latter is close to the station, and is a magnificent pile, approached through extensive and beautiful grounds in which the choicest of trees, shrubs, and Conifers have been planted unstintingly yet effectively. This splendid establishment is worthy of more than a passing glance, but as the Strawberries are tempting we pass to the "gardens," and find a field—of sand.

Some twelve years ago Mr. Sharpe, who is a practical gardener, took this field, not for growing Strawberries, but to make the best he could of in growing crops generally. Amongst other things Strawberries were tried, and the results were surprising. There are now three acres of them, about two in bearing, and from 400 to 500 lbs. of the finest dessert Strawberries to be found in London have been gathered daily for the last ten days—so fine and also early that the first week's consignments realised 2s. a pound. That is something for outdoor Strawberries on land that resembles a sandy beach from which the tide has receded. It is quite astonishing to see such prodigious crops of fine fruit in such apparently miserable soil, and the more so to learn that no manure in any form whatever is used in their production. Mr. Sharpe is not an enthusiast nursing a fad, but a quiet, thoughtful, industrious gardener, animated with only one desire—namely, cultivating his land the most profitably; and he would trench and manure in the orthodox manner if he found it advisable to do, but he does not. He trenches in his old beds periodically, and has tried the effects of manuring, but it only gave him a finer crop of leaves, adding nothing to the weight of the fruit, and certainly nothing to its quality, while the shade afforded by the stronger foliage impaired its colour—an important factor in produce for sale.

It is very extraordinary, too, that in this bed of sand the plants last so long. One bed is seven years old, and the plants are laden with fruit—so much so that they will pro-

bably be left another year. It is small in comparison with that on three-year and four-year-old plants, but ripens earlier, which is important, while the quality is very superior. Some of the beds have been trenched in, and the ground at once planted again without a particle of manure; and although this has been done twice—that is, the present is the third plantation on the same site—there is not the slightest deterioration in the crops either as regards the quantity or the size of the fruit.

The plants generally are characterised by a compact sturdy growth and small thick leaves, the trusses rising above them and falling in a whorl on the ground quite beyond the foliage. It is a sight to see the huge fruit of Marguerite piled one on the other in a thick ring round the plants, some of them apparently bearing 2 or 3 lbs.—probably more. There is no need to search for them, for they positively lie in heaps, not a truss and hardly a fruit being shaded by the foliage.

The method of culture is briefly this: Runners, which are sparsely produced, are taken when they can be had after the fruit has been gathered, and inserted in nursery beds, where they remain till March, when they are put out about 2½ feet apart. The flower trusses that soon after appear are picked off, the cultivator not finding it prudent to crop the plants in a small state, as he loses more in the end by weakening them than he gains at the beginning in allowing the first trusses to develop. They are never mulched and never watered artificially, for there is no well or water store in the field. The ground is made firm, indeed as hard as possible, and is then hoed systematically, so as to have an inch of loose sand on the surface. This really acts as a mulch, for scarcely any moisture can pass through it by evaporation in hot weather. Mr. Sharpe has been a reader of this Journal for years, and was impressed by the writings of the late Mr. Fish on that subject, and the information he has turned to practical and profitable account. The ground is covered with long grass for keeping the fruit clean, and when the season is over the runners are cut off, but no leaves, the litter is cleared away, and the hoe set to work again. That is the simple routine. The ground is not trenched except when turning in old beds, and the sand is about 20 feet deep before water is reached.

The first quality fruit is gathered from daylight till seven o'clock in the morning, every fruit being without blemish, carefully packed in leaves in flat pound punnets, and reaches London by train in time for the breakfast tables of the affluent and first-class hotels. The "seconds," or smaller yet very good fruit, is gathered from five o'clock till dusk, and packed without leaves in "deep pounds." These punnets being a little wider at the bottom than the top, can be packed one on the other without crushing the fruit, and they are so arranged in large boxes. The flat pounds of prime fruit are arranged in shelved boxes, one side being hinged at the bottom, so that the door thus formed falls down, and the series of shelves, about 3 or 4 inches apart, are accessible and quickly filled, each box holding five dozen punnets. No doubt the porters at each end receive a little present of fruit, and are thus induced to take a personal interest in the delivery of the market consignments in good condition—a point of the greatest possible moment in the transmission of soft fruit, as 3d. or more a pound is easily rubbed off choice Strawberries, and much more off Grapes, by rough handling and faulty packing. The small fruit is sold for preserving in the surrounding district, and a great deal large and small disposed of in the "ninepenny feasts."

After trying many varieties, the following are mainly relied on for giving a full supply of fruit for a month:—Marguerite and Princess Alice Maud, early; then Sir Joseph Paxton, Empress Eugénie, British Queen, and Comte de Paris following closely in the order named. Neither Black Prince nor Vicomtesse Hericart de Thury is of any use in the sand at Knowle Hill, as the fruit is too small, while Marguerite is as early as the Vicomtesse, with fruit of thrice

the size. This is the most profitable, and is worth trying in all light soils and warm positions—in fact everywhere, for no one knows where particular varieties of Strawberries will succeed without trying them. It is a French variety, and is described as follows in the “Fruit Manual”:—“Fruit very large, conical; skin bright shining red; flesh bright orange, solid, juicy, sugary, and richly flavoured. It is of immense size, and sometimes weighs as much as $3\frac{1}{2}$ ozs.” At Knowle Hill many of the large fruits are somewhat wedge-shaped and ribbed, and the colour, orange red, renders it a favourite for preserving; but some others are of higher quality for dessert in the soil in question; yet the fact remains that Marguerite produces the heaviest crops, and the fruit realises the best price of all, so imposing is its appearance. Princess Alice Maud is a favourite old market Strawberry, as it travels well, and can generally be relied on for a good crop in most soils. Sir Joseph Paxton is a well-known Strawberry of sterling merit, and is grown very extensively in Kent; it is perhaps the best midseason variety. Empress Eugénie bears heavy crops of good sized, but not very large, fruit in the sand. The fruit is firm, colour very rich, and quality quite first-rate, nearly equalling that of the British Queen—the queen of all for quality, and never fails to produce admirable crops with Mr. Sharpe. The last is Comte de Paris, than which no variety grows better in the light soil, and a fine crop is swelling. I am not certain there are not two varieties under this name in cultivation. Be that as it may, the one at Knowle Hill is valuable because of its decided lateness; the fruit is of good size and colour, with a brisk agreeable flavour. A few other varieties are grown, including The Captain, on trial, but the above are relied on, and will yield tons of fruit during the next three weeks.

The ground slopes sharply to the south, and is sheltered by woods on the north, east, and west—a great advantage for early ripening, and the first good fruit in the market invariably commands the highest prices.

The Royal Lake, Virginia Water, is about a mile from Knowle Hill. It is 365 acres in extent, boldly irregular in outline, surrounded with plantations, and altogether it is not easy to imagine a more beautiful example of English scenery to which the public have access all the year round. It is twenty-three miles from London.—J. WRIGHT.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 523.)

THE following, translated from the original Chinese by Mr. Reeves, will serve as examples of the names by which the Chrysanthemum was known in the Celestial Empire. “The purple lily, the white waves of autumn, the purple pheasant’s tail, the scarlet robe, the yellow gold thread, the purple butterfly, the purple pheasant’s feather, the yellow tiger’s claw, the crystal white, the drunken lady.” It was, however, only a year or two after this rather trifling anxiety arose that a way out of the dilemma was found, for as soon as the French florists began to take them in hand the old system of nomenclature was entirely discarded, and following in the footsteps of the Dutch a kind of floral hero-worship started into existence, and the newer kinds were named after many of the principal celebrities of France and other countries.

Respecting the diversity of opinion as to the genus to which the large-flowering or Chinese Chrysanthemum, as it was commonly called, a word or two may be usefully inserted here. Mr. Joseph Sabine, whose writings afford much interesting and useful information on this point, and to which the author is almost wholly indebted for the particulars already given, contended that the varieties then known were not the *C. indicum* of Linnaeus, although he considered such a species did exist, and strongly advised its importation. In several very able and exhaustive papers read by him before two of the learned and scientific societies of which he was a member, he gave a long explanation of his study and researches, definitely setting the whole question at rest, the result being that the small-flowering variety was the true *C. indicum*; whereas the large Chinese Chrysanthemum of 1789 and its successors were proved by him to belong to an entirely different species, and thenceforth to be properly known as *C. sinense*.

In one of these papers lists are given and references made to all the previous writers on this plant, upon a perusal of which it is seen

that the Indian and Chinese Chrysanthemums had been subjected to no fewer than twenty-six various designations. Notwithstanding his labours many people, probably from ignorance and custom, still clung to the old and incorrect name, and as late as 1827 a contributor to “Hone’s Table Book,” under the heading “Winter Flowers,” refers undoubtedly to the Chinese Chrysanthemum as *C. indicum*. This writer, who of course is not quoted as any authority, explains its service in enlivening the dreary months of November and December, and tells us that there were then about forty varieties of it in this country, for the greater part of which we are indebted to the London Horticultural Society. He describes the facility with which it is propagated and the dissimilarity in the forms of the flowers, as well as in the formation of the petals, and concludes with a list of those which particularly engaged his attention, among them being the pure or large paper white, the early blush, the golden lotus, the superb clustered yellow, and the starry purple. Mr. Hone’s correspondent, who adopts the pseudonym of “Jerry Blossom,” says there is little chance of its ever ripening its seed on account of the blooming season being at the commencement of the winter, an opinion previously expressed by Mr. Sabine, nor does any mention appear of the Chrysanthemum having been raised from seed up to this time. It was therefore felt that whatever new kinds made their appearance they must be brought from India or China, and Mr. Salter was of opinion that seed was never saved in England prior to 1830.

We are told by Mr. Burbidge in his recent work on the Chrysanthemum that in or about that year the first English seedlings were raised by Mr. Isaac Wheeler, gardener and porter at the Magdalen Hall (now Hertford College), Oxford, and that these were reared from home-saved seeds at Beaumont Buildings in that city. On December 2nd, 1832, Mr. Wheeler exhibited some of his seedlings in London, and received a silver Banksian medal for them as the earliest seedling Chrysanthemums raised in England. This medal and a drawing of one of the plants may yet be seen in the possession of a member of the Wheeler family still resident in Oxford. Somewhere about the year 1835 seedlings which Mr. Salter calls the first English *bonâ fide* ones were raised in Norfolk by Mr. Short and Mr. Freestone, the latter of whom obtained Prince of Wales, the well-known incurved variety, which is represented in a coloured plate forming the frontispiece to Mr. Salter’s book. Nonpareil and Norfolk Hero, the latter variety of which has probably shared the same fate as those previously mentioned, were also among the first sorts raised in that part of the country.

The love of floriculture in that country is proverbial, and it was not long before the people of Norwich inaugurated the first Chrysanthemum exhibition, which was held in 1843. Three years later this was followed by one in London under the auspices of the Stoke Newington Chrysanthemum Society, afterwards called the Borough of Hackney, but which has more recently adopted the title of the National Chrysanthemum Society, at the shows of which may be seen blooms of the Chrysanthemum that would probably astonish the most skilful Chinese or Japanese gardener.

Almost every important town in England has followed suit, and Chrysanthemum societies are still being formed in many of the smaller towns, showing how greatly is this plant appreciated. The prizes offered are in many cases of very considerable value, and include silver cups and money prizes amounting to sums as high as £15.

The following is a list of some of the most prominent Societies established for the purpose of encouraging the culture of Chrysanthemum and other floricultural associations which have annual exhibitions of this flower:—Aylesbury Chrysanthemum Society; Ascot, Sunninghill, and District Horticultural Society; Brixton, Streatham, and Clapham Chrysanthemum Society; Brighton and Hove Chrysanthemum Society, Bath and Floral Fête Committee, Bromley Chrysanthemum Society, Basingstoke Horticultural Society, Birmingham Chrysanthemum Society, Bristol and Clifton Chrysanthemum Society, Burton-on-Trent Chrysanthemum Society, Croydon Horticultural Society, Colchester Horticultural Society, Canterbury Gardeners’ Mutual Improvement Society, Crystal Palace, Cheltenham Chrysanthemum and Fruit Society, Colchester and East Essex Horticultural Society, Cambridgeshire Horticultural Society, Chesterfield Chrysanthemum Society, Chelmsford and Essex Horticultural Society, Dorset County Branch of the National Chrysanthemum Society; Ealing, Acton, and Hanwell Horticultural Society; Gravesend and North Kent Chrysanthemum Association, Hull and East Riding Chrysanthemum Society, Havant Chrysanthemum Society, Huddersfield Chrysanthemum Society, Headington Horticultural Society; Highgate, Finchley, and Hornsey Chrysanthemum Society; Ipswich Horticultural Society, Kingston and Surbiton Chrysanthemum Society, Lambeth Amateur Chrysanthemum Society, Liverpool Horticultural Association, Lincoln Chrysanthemum Society, Leicestershire Chrysanthemum Society, Loughborough Chrysanthemum and Fruit Society, Lindfield Chrysanthemum Society, Manchester Botanical Society,

National Chrysanthemum Society, Northampton Chrysanthemum Society, Newport (Mon.) Horticultural Society, Oxfordshire Chrysanthemum and Fruit Society, Putney Chrysanthemum Society, Richmond Horticultural Society, Reading Chrysanthemum Society, Royal Horticultural Society, Royal Southampton Horticultural Society, Saffron Walden Horticultural Society, Sheffield and West Riding Chrysanthemum Society, Scarborough Floral and Horticultural Society, Tunbridge Wells Chrysanthemum Society, Tonbridge Gardeners' Mutual Improvement Society, Twickenham Horticultural Society, Taunton Chrysanthemum Society, Weald of Kent Gardeners' and Mutual Improvement Society, Walton-on-Thames Chrysanthemum Society, Yeovil Chrysanthemum Society.—C. HARMAN PAYNE.

(To be continued.)

LEEDS FLOWER SHOW.

DESPITE the many serious losses this annual event has entailed for many years past in consequence of unfavourable weather, yet the very excellent Secretary (Mr. J. H. Clark) wisely determined to make at least one more effort to retain the Show and its prestige. With that object in view he invited the several tradesmen who would be principal creditors to meet him; he then submitted a statement to them showing the average receipts during the last ten years, and along with it a proposed approximate expenditure for this year's Show. On careful consideration it was thought that by reducing expenditure, and being hopeful of being favoured with fine weather, this year's Show might prove to be one of the most successful ever held for many years past. Those tradesmen (to their honour be it recorded) immediately replied, "We will not allow the Leeds Flower Show to lapse even for a year if our services will assist to maintain it." Surely that may fairly be considered patriotic, seeing it entailed a chance of losing their several accounts, along with their proportionate share of others that they might be called upon to defray to the amount of about £200. A schedule of prizes, &c., was at once adopted, and along with it *pro rata* rules, giving all exhibitors, along with the Committee, an equal share in the success of the Show. The exhibitors responded beyond expectation.

Knowing how much all had risked, both exhibitors and Committee might have been excused if despondency, or even despair, had overwhelmed them, when on the evening preceding the morning of Show it commenced to rain as usual, and by daylight the next morning the rain was descending in torrents, continuing to do so the whole day without one moment's intermission, but, to their credit be it said, not one murmur escaped their lips.

To the Show too much praise cannot be accorded, as it contained some of the best specimens in its several departments that could be produced anywhere; but as many of them had been exhibited at York the previous week and fully noticed in the Journal, it is not here necessary to do more than refer to page 533, and to the appended prize-list.

Especially commendation is due to the several celebrated growers who kindly contributed specimens of their specialities—namely, Messrs. R. Smith & Co. of Worcester, a splendid collection of Clematises, each plant averaging 3 feet in diameter, in perfect health, and covered with flowers—these were much admired—and a seedling named Beauty of Worcester, a medium sized flower, colour violet-purple, with creamy white stamens in centre, adding much to its beauty, was awarded a first-class certificate of merit. The Liverpool Horticultural Company (John Cowan, Limited) contributed a beautiful collection of miscellaneous, stove, greenhouse, and decorative plants, along with a few Orchids, Vines, and Roses, which helped materially to adorn the entrance tent. Messrs. J. Laing and Co., Forest Hill, London, contributed both plants and cut flowers of their celebrated collection of Tuberous Begonias, which found many admirers. Orchids were represented, and contained some fine plants and varieties.

In the cut flower department very special commendation is due to Mr. Cypher for his beautiful arrangement of "Group of natural flowers in vase or ornamental stand for dinner table." It was unsurpassable. The same meed of praise may be accorded to Mr. Wright's bride's bouquet along with Mr. Cypher's vase; they were considered to be perfect in every attribute. Messrs. J. Dickson & Son, Newton Nursery, Chester, made a most effective display with collections of hardy herbaceous flowers, such as Pæonies, Irises, &c.; also Messrs. R. Smith & Co. with a similar collection.

Mr. S. Hartley, nurseryman, Headingley, Leeds, contributed a fine collection of double and single Pyrethrums, as well as the collection of twelve bunches or spikes of hardy herbaceous flowers, which obtained for him the first prize.

Roses were very good, more especially those of Mr. J. House of Peterborough; they were truly superb specimens, and deservedly obtained first prizes in every class, Messrs. Cranston being second with good blooms, but wanting the freshness so conspicuous in Mr. House's collections; Mr. May of Bedale being third. Mr. House contributed a collection of Tea and other Roses, including W. A. Richardson, which from the novelty of its colour attracted many admirers; he had also a nice stand of his new seedling Rose named Miss House, which had awarded to it a first-class certificate. Messrs. Cranston had a stand containing a grand lot of Mons. Noman.

Uniformity of excellence was the prevailing characteristic in the fruit department. Appended is the prize list:—

PLANTS.—Twelve stove and greenhouse ornamental and flowering plants, not less than six in flower, Orchids excluded.—First, Earl of Zetland; second, Mr. Cypher; third, Mr. G. Gelder. Six stove and greenhouse plants in flower, Orchids excluded (amateurs).—First, Earl of Zetland; second, Mr. G. Gelder. Specimen stove or greenhouse plant in flower.—First, Earl of Zetland; second, Mr. Gelder; third, Mr. Grosvenor Talbot. Ornamental or fine-foliage plants, with or without bloom.—First, Mr. Cypher; second, Mr. J. Barran, M.P. Group of miscellaneous plants, arranged for effect, and occupying 300 square feet.—First, Mr. J. Barran. Group of ditto, occupying 150 square feet (amateurs residing in Yorkshire).—First, Mr. G. Talbot; second, Mr. G. Gelder. Six Orchids in flower, distinct.—First, Mr. Cypher; second, Mr. Walter Bateman; third, Mr. B. Hemsworth. Three Orchids in flower, distinct (amateurs).—First, Mr. J. Barran; second, Mrs. Tetley; third, Hon. Mrs. Meynell-Ingram. Specimen Orchid.—First, Mr. G. Talbot; second,

Mr. J. Barran; third, Mr. Cypher. Six stove or greenhouse Ferns, distinct.—First, withheld; second, Mr. G. Talbot; third, Mr. W. J. Dixon. Three stove or greenhouse Ferns, amateurs.—First, Mr. G. Talbot; second, Mrs. Tetley; third, Mr. J. Barran. Twelve Roses in flower, distinct.—First, Pyhus & Son, second, withheld; third, Mrs. Tetley. Six do.—First Pyhus & Son; second, Mrs. Tetley; third, Mr. B. Hemsworth. Three do., amateurs.—First and second, withheld; third, Mrs. Tetley. Specimen Rose.—First, Pyhus & Son. Twelve Show Pelargoniums, including spots.—First, Mrs. Tetley. Six do., amateurs.—First, Mrs. Tetley; second, withheld; third, Mr. G. Talbot. Six Fancy Pelargoniums.—First, Mrs. Tetley. Six Zonal Nosegay or Hybrid Nosegay Pelargoniums.—First, Pyhus & Son; second, Mrs. Tetley; third, Mr. G. Talbot. Six double-flowered Pelargoniums.—First, Mrs. Tetley; second, Mr. B. Hemsworth. Six Fuchsias, distinct.—First, Mr. J. Barran; second, Mr. B. Hemsworth; third, Mrs. Tetley. Six Gloxinias, distinct.—First, Mr. B. Hemsworth; second, Mr. W. J. Dixon.

CUT FLOWERS.—Group of natural flowers, in vase, for dinner table.—First, Mr. Cypher; second, Mr. G. Talbot. Twenty-six wedding bouquets, First, Mr. G. Talbot; second, Mr. Cypher; third, Mr. J. Barran. Ball



Fig. 1.—Iris atropurpurea. (See page 7)

houquet.—First, Mr. G. Talbot; second, Mr. Cypher; third, Mr. Barran. Thirty-six distinct Roses.—First, Mr. John House; second, Cranston Nursery Company; third, Mr. May. Eighteen distinct Roses.—First, Mr. House; second, Cranston Nursery Company; third, Mr. May. Twelve distinct Roses (amateurs).—First, Mr. J. Trees; second, Mr. B. Hemsworth; third, Mr. W. Bateman. Twelve distinct Tea-scented Roses.—First, Mr. House; second, Cranston Nursery Company; third, Mr. H. May. Six bunches or spikes of cut stove or greenhouse flowers, distinct.—First, Mr. J. Barran; second, Mr. G. Gelder; third, Mr. B. Hemsworth. Twelve do. of hardy herbaceous perennial flowers, staged similar to Roses.—First, Mr. S. Hartley.

FRUITS.—Collection of six varieties of fruits, two varieties of Grapes of two bunches each allowed.—First, Hon. Mrs. Meynell-Ingram; second, Sir H. M. Thompson. Collection of four varieties, Pine excluded.—First, Hon. Mrs. Meynell-Ingram; second, Hon. R. C. Parsons; third, Sir H. M. Thompson. Two bunches black Grapes.—First, Mr. H. Gill; second, Sir H. M. Thompson; third, Mr. Ayscough Fawkes. Two bunches white Grapes.—First, Hon. R. C. Parsons; second, Lord Hotham; third, Mr. R. Grindrod. Grapes, heaviest bunch, any colour.—First, Mr. H. Gill. One Pine.—First, Mr. W. Birks; second, Mr. T. Hare; third, Mr. J. H. Goodacre. Six Peaches.—First, Mr. J. Thompson; second, Mr. A. Fawkes; third, Hon. R. C. Parsons. Six Nectarines.—First, Mr. T. Diamond; second, Mr. B. Hemsworth; third,

Mr. F. Hares. One Melon.—First, Mr. T. Hare; second, Mr. A. Fawkes; third, Mr. Grindrod. Six Figs.—First, Mr. A. Fawkes; second, Mr. J. Barran. Fifty Cherries.—First, Mr. T. Hare; second, Sir H. M. Thompson; third, Mrs. Naylor. Fifty Strawberries.—First, Mr. Goodacre.

NEW ROSES.

THE following list of new Roses, which can be shown at the National Rose Society's Exhibition in the classes provided for varieties not in commerce in England previous to 1883, has been carefully drawn up by T. W. Girdlestone, Esq., and will be found useful by intending exhibitors:—

Admiral Courbet	Lord Frederick Cavendish
Admiral Seymour	Louise Aunier
Alexandre Dupont	Louise Cbrétien
Alexandrine Bruel (T.)	Louise Philippe Albert d'Orleans
Aline Rozey (T.)	Madame Alexandre Jullien
Alphonse Soupert	" Alice Van Geert
André Gill	" Anna Moreau
André Schwartz (T.)	" Appoline Foulou
Annette Murat (T.)	" Bertha Mackart
Antoine Chantini	" de Watteville (T.)
Antoine Mermet (H.T.)	" D. Wettstein
Antoine Wintzner	" Eugène Verdier (T.)
Baron Nathaniel de Rothschild	" Eugénie Fremy
(1883)	" Fanny de la Forest (H.N.)
Baronne Nathaniel de Rothschild	" F. Buchner
(1885)	" Jean Sisley (China)
Baron de Sinety (T.)	" Lelievre Delaplace
Baron Travot	" Louise Vigneron
Baron Wolessley	" Lucien Chauré
Bedford Belle (H.T.)	" Massicault
Belzunce	" Mélanie Vigneron
Benoit Comte	" Norman Néruda
Charles de Legrady (T.)	" Olympe Terestcheuko
Charles Fauquet	" Pitaval
Charles Lamb	" Rambaud
Clothilde Soupert (T.)	" Raoul Chandon
Colonel Felix Breton	" Remond (T.)
Colonel Robert le Fort (Moss)	" Rochet
Comtesse Cahen d'Anvers	" Veuve Alexandre Pommery
Comtesse de Carteja	Malmaison Rouge (B.)
Comtesse de Mailly-Neale	Marguerite de Roman
Comtesse de Paris (Levêque, 1883)	Marie Closon
Directeur Alphand	Marie Legrange
Docteur Dor	Marie Digat
Docteur Garnier	Marshall P. Wilder
Duke of Marlborough	Mary Bennett
Eclair	Ma Surprise
Edgard Jolibois	Merveille de Lyon
Edouard Gautier (T.)	Monsieur Hoste
Ella Gordon	Mrs. Caroline Swailes
Emperor	Mrs. George Dickson
Empress	Olivier Metra
Etendard de Jeanne d'Arc (T.)	President Senelar
Etendard de Lyon	Princesse Amélie d'Orleans
Francisque Rive	Princesse de Bearn
Fürstin Jobanna Auersperg	Princesse Julie d'Arenberg
Garden Favourite	Princesse Radziwill
General Appert	Pride of Reigate
Gilbert	Professor Edouard Regel
Gipsy (H.T.)	Prosper Laugier
Gloire Lyonnaise (H.T.)	Queen of Queens
Grace Darling (T.)	Rosalie (T.)
Grandeur of Cheshunt	Rosamene St. Hubert (T.)
Hans Mackart	Secrétaire Nicholas
Hon. Edith Gifford (T.)	Souvenir d'Alphonse Lavallée
Imperatrice M. Feodorowna (T.)	" de Gabriel Drevet (T.)
Jeanne Abel (T.)	" de Leon Gambetta
Joachim du Bellay	" de Madame V. Verdier
Joseph Metral	" de René Levêque
Julie Gaulain	" de Rambaud (T.)
Lady of the Lake	" de Thérèse Levêt (T.)
Laurent de Rille	Sunset (T.)
Lecocq Dumemil	Victor Hugo
Le Khedive	Waltham Climber, No. 1 (H.T.)
L'Elegante (T.)	Waltham Climber, No. 2 (H.T.)
Leon Say	Waltham Climber, No. 3 (H.T.)
Longfellow	W. F. Bennett (H.T.)
Lord Bacon	

CUCUMBER ROOTS DISEASED.

I AGREE with "S. W., Yorks," about the use of quicklime as a cure for diseased Cucumber roots. It will do more than that; if used early enough it will prevent disease or canker both in Cucumbers and Melons. The writer had charge of the Cucumber and Melon houses under Mr. Jones at Frogmore twelve years ago; and those who had the pleasure of seeing the garden there at that time know what sort of crops were grown. It was my duty then to place a ring of fresh lime round each plant 4 inches away from the stems, and to water up to it, but not inside it, and it was considered a preventive of disease in Cucumber roots and also of canker in Melons. Here I have had very little experience of either of these, but I attribute my success to the use of a handful of quicklime placed on pieces of tile or glass, and stood between the plants. This in

my opinion absorbs the superfluous moisture and thus keeps the plants safe.—G. M. W.

THE WHITE WATER LILY.

THERE is a too common impression that to grow and flower with any degree of satisfaction the common white Water Lily (*Nymphaea alba*), it is absolutely necessary to have either a lake or a pond, and hundreds of people are deterred from growing it because they possess neither. Though few people will dispute that most plants generally succeed the best, and look the best, under natural and unrestricted conditions, and none more so than Water Lilies, no matter whether it be the *Victoria regia*, *Euryales*, *Nymphaeas*, *Nuphars*, *Limnorcharis*, or *Aponogeton*, yet I shall endeavour to show that satisfactory results and a great deal of pleasure may be derived by cultivating this charming Lily in a more humble and restricted way than is commonly practised, and I may here state that most other *Nymphaeas* may be grown in equally limited spaces, the principal difference being in temperature.

Nymphaea alba is a native of Britain, is, therefore, quite hardy, and in warm localities and a pure atmosphere it is very floriferous. There are, however, places where the atmosphere is very impure from various causes, and where, as a consequence, the sunlight is not near so intense as in districts but a few miles away, and the mean annual temperature is also rather lower. From these two causes alone this Lily does not produce many flowers when grown out of doors under such conditions, but if the shelter of glass is afforded in localities like these the number of flowers produced by a very small plant is almost astonishing. But someone will say, "Who is going to build an aquatic house to grow the common Water Lily in?" I do not suppose anyone will build a house for such a purpose, nor am I going to suggest it, but I wish to show the dwellers in large towns, and who have neither lake nor pond in which to cultivate their aquatics, how they may have dozens of pure and star-shaped Water Lilies.

My employer, several years ago, expressed a desire to have this beautiful plant in his garden, but possessing neither of the above conveniences, nor yet a large tank or tub of any kind, I could not at the moment see how I was to gratify his desire. After some time I found a large box of the following dimensions—length 4 feet, breadth 2 feet 3 inches, depth 1 foot 4 inches. This we had lined with lead and made watertight, and on one side, 1 inch from the top, was inserted a three-quarter inch overflow pipe. Here we had, at a trifling cost, an aquatic tank that will last a long time, but I should like it better if it were a foot wider. This tank was placed at the end of a small lean-to greenhouse with south aspect, and from which frost only is excluded. Half a barrowful of strong loam, with a little decayed manure added, was put in the bottom of the tank, a small plant was obtained from a friend and planted in the centre, a few large stones were placed round the crown of the plant to keep it in its place while the water was poured in through a rose, and when the water rose to overflow pipe the work was done. The water should be soft, we use rain water. In course of time several plants of *Aponogeton distachyon*, or Cape Pondweed, was added, and these throw up dozens of Hawthorn-scented pure white flowers the year round. The *Nymphaea* gives us three, four, and five flowers at a time for several weeks, and odd ones through the summer. In order to obtain all this beauty year after year we have only to add several pailfuls of fresh water every week. During the autumn months the leaves of the *Nymphaea* gradually die, and the *Aponogeton* and goldfish have the tank to themselves till the following spring, when the Water Nymph reappears in all her purity and beauty.—J. UDALE.

LORD NAPIER NECTARINE.

EARLY during the present season I recollect some remarks being made by one of your able contributors respecting the above Nectarine. These statements did not accord with my experience of this variety when grown under glass. I have always found Lord Napier one of the most abundant cropping varieties that has come under my notice. I have one tree under my charge which now measures 19 feet in width by 10 feet in depth, with a crop of over 300 fruits on it, nearly every one of which is fit for exhibition if so needed, being first-rate both in size and colour. I grant that in regard to flavour precedence must be given to a few varieties, but if allowed to become perfectly ripe before being taken from the tree this kind will not then leave much to be desired even by the most fastidious. This crop now makes the fourth, the average of which for the four seasons would be about 300 fruits. This may appear to some an excessive crop, but when taking into consideration the extremely robust character of the variety it is not so, causing the tree to be productive of good fruit-bearing wood more than would be the case with a light crop. We are just com-

mencing to gather the most forward fruit; some will, however, be left for several days yet. Both the tree and the fruit can be seen by anyone interested in this, one of the best "all-round" Nectarines raised by the late Mr. Rivers.—JAMES HUDSON, *Gunnorsbury House Gardens, Acton, W.*



THE coming week will be a busy one for rosarians, as the great event of the season, the NATIONAL ROSE SOCIETY'S EXHIBITION, will take place on Tuesday next, and shows of a less important character are as numerous as could be desired by the most enthusiastic. We learn that there is good promise of an excellent display at Kensington, as the entries are already very abundant, and there is every reason to expect a keen competition in all the leading classes. The admirable blooms staged both by nurserymen and amateurs at the recent meeting of the Royal Horticultural Society augured well, and unless the weather should prove unusually treacherous within the next few days a thoroughly representative show may be confidently expected by intending visitors.

— THE conservatory in the Royal Horticultural Society's Gardens, South Kensington, is now permanently furnished with floral attractions of considerable importance. Hardy flowers constitute the chief portion of these, and the grand group from Mr. T. S. Ware is especially notable, as it comprises a large number of choice species and varieties tastefully arranged, and it is surprising to many people what beautiful effects can be produced by hardy flowers when judiciously arranged. Messrs. Barr and Son also have an extensive group of similar flowers, and Messrs. Kelway and Son contribute Peonies and their varied Pyrethums. These exhibits are greatly admired by visitors, and undoubtedly are assisting in popularising a useful and charming group of plants.

— MESSRS. CARTER & Co. 237 and 238, High Holborn, inform us that they have been awarded the highest prizes, consisting of four silver and six bronze medals, for the produce of their seeds at the Agri-Horticultural Exhibition held at Kandy, Ceylon.

— MR. HENRY R. NEWPORT, late of the Board of Trade, has been appointed Assistant Secretary to the Royal Horticultural Society.

— A CORRESPONDENT sends the following in reference to the KENT CHERRY CROP:—"The great Cherry sales in the fruit-growing districts of Kent have been held during the last few days. In consequence of the prospects of the crop throughout the country having been somewhat diminished by the May frosts there was more than the usual competition, and high prices were realised for each lot, last year's prices being generally exceeded. The Cherries on one estate alone fetched £1700. The crop of this fruit in most of the Kentish districts is a prolific one, notwithstanding the damage inflicted by frosts."

— ONE of the Spiderworts which has oval-shaped green leaves that occasionally come variegated exists in many gardens under the name of *Tradescantia zebrina*, and to that species it has been commonly referred, though it differs considerably from it. Examples of this which we sent to Mr. R. I. Lynch, Curator of the Cambridge Botanic Garden, some time since have now flowered, and have been authoritatively determined to be *TRADESCANTIA FLUMINENSIS*. The plant is widely distributed in British gardens, is very frequently seen in ferneries and on rockeries, so that it is satisfactory to obtain the correct name.

— A CORRESPONDENT sends us a pretty HYBRID HIBISCUS, which he describes as a cross between *H. Dennisoni* and *H. rosa sinensis fulgidus*. It is double and of a rosy salmon colour, with rich crimson at the base of the petals.

— SHOULD we experience another hot summer there is every prospect of an immense yield of GRAPES being secured in the air vineyard at Cardiff, owned by the Marquis of Bute and planted and managed by the practical gardener, Mr. A. Pettigrew. The last season was much the best hitherto gathered and converted into wine, no

less than three hogsheads being made by Mr. Pettigrew, and remarkably good it is. It is not effervescent, but in other respects it closely resembles champagne of the best brand, and is preferred by many good judges to these high-priced productions. The Cardiff wine is bottled off in a manner similar to champagne and labelled "Castell Coch." Any quantity of it could be sold at the rate of 5s. for the size of bottle known as "quarts," but owing to the fickleness of our climate it is not thought the experiment will ever prove sufficiently profitable to warrant an extension of the vineyard.

— NO. 5 of the Holiday Handbooks edited by Mr. Percy Lindley (125, Fleet Street), entitled THE HARTZ MOUNTAINS, and is in the same style as those we have previously commended, containing much useful and interesting information respecting the route through this picturesque district of the Continent. It is also liberally illustrated.

— RELATIVE TO THE STEM ROOTS OF LILIES we have received a reply to "Scientia" from Mr. E. Jenkins, but too late for insertion, and we can only print the following summary:—"Scientia" takes exception to my statement that 95 per cent. of imported Lilies commence basal root-action first. I still repeat it, and in doing so would draw attention to the words I used originally—i.e., 'imported Lilies.' The plan I adopted was this. The whole of them directly they were received were placed in cocoa-nut fibre in shallow boxes, and not a single bulb of *L. auratum* was potted till the basal root-action began, which I think is a full and sufficient proof justifying my statement. As to the many that fail annually after being received by purchasers, they are placed under various methods of treatment for which no nurseryman would hold himself responsible. The roots on the stems of various species and varieties of *Liliums* (not one only) are annually produced and annually perish. May this, then, be regarded as accidental or natural, and may these be stripped off without injurious consequences directly or indirectly?"

THE AURICULA ELECTION.

WE are now enabled to chronicle the result of the above election. It will be remembered that growers were asked to name the best six Auriculas in each class, also the best twelve varieties, three each from the four classes. At the same time a list was asked of the best twelve Alpines. The election was confined only to Auriculas in commerce. The following list speaks for itself. We would only mention that in some instances "Silvia" (Douglas) was classed as a white-edged variety, but its proper position being in the grey-edged division, it has been there placed. Other kinds were wrongly classed, but the votes accorded them have been duly credited.

GREEN-EDGED AURICULAS

Name.	Raiser.	Votes.
Prince of Greens	(Traill)	30
Col. Taylor	(Leigh)	29
Talisman	(Simonite)	18
Lovely Ann	(Oliver)	16
Anna	(Traill)	16
Freedom	(Booth)	13
Imperator	(Lytton)	11
Champion	(Page)	11
Lycurgus	(Smith)	8
Apollo	(Beeston)	7
Prince of Wales	(Ashton)	5
Admiral Napier	(Campbell)	4
Mayflower	(Traill)	3
Alderman Wisby	(Headley)	2
Highland Laddie	(Pollitt)	2
Lord Palmerston	(Campbell)	2
General Neill	(Traill)	1
New Green	(Headley)	1

GREY-EDGED VARIETIES.

Name	Raiser.	Votes.
Geo. Lightbody	(Headley)	30
Lancashire Hero	(Lancashire)	30
Alexander Meiklejohn	(Kay)	26
Richard Headley	(Lightbody)	23
John Waterson	(Cunningham)	17
Dr. Horner	(Read)	14
Alderman C. E. Brown	(Headley)	8
Silvia	(Douglas)	7
Confidence	(Campbell)	6
Complete	(Sykes)	5
Mrs. Moore	(Douglas)	4
Geo. Levick	(Walker)	4
Ringleader	(Kenyon)	4
Robert Trail	(Lightbody)	2
John Morris	(Meiklejohn)	1
Competitor	(Turner)	1
Victor	(Read)	1

WHITE-EDGED VARIETIES.

Name.	Raiser.	Votes.
Acme	(Read)	28
Smiling Beauty	(Heap)	26
John Simonite	(Walker)	22
Conservative	(Douglas)	19
True Briton	(Hepworth)	19
Glory	(Taylor)	9
Beauty	(Traill)	9
Frank Simonite	(Simonite)	7
Reliance	(Mellor)	6
Regular	(Ashworth)	6
Ne Plus Ultra	(Smith)	3
Ann Smith	(Smith)	3
Lady Sophia Dumaresque	(Lightbody)	2
Catherine	(Summerscales)	2
Mrs. Dodwell	(Woodhead)	2
Cleopatra	(Read)	2
Bright Venus	(Lee)	1
Omega	(Turner)	1
Favourite	(Taylor)	1
Incomparable	(Taylor)	1
Mrs. Campbell	(Campbell)	1
Dr. Kidd	(Douglas)	1

SELFS.

Name.	Raiser.	Votes.
C. J. Perry	(Turner)	20
Pizarro	(Campbell)	20
Blackbird	(Spalding)	20
Ellen Lancaster	(Pohlman)	18
Mrs. Douglas	(Simonite)	17
Topsy	(Kay)	15
Lord of Lorne	(Campbell)	14
Garibaldi	(Pohlman)	11
Sapphire	(Horner)	11
Duke of Argyle	(Campbell)	8
Othello	(Netherwood)	5
Mrs. Sturrock	(Martin)	3
Negro	(Butcher)	3
Metropolitan	(Spalding)	2
Meteor Flag	(Lighthody)	1
Mrs. Smith	(Smith)	1
Black Bess	(Woodhead)	1
Ruby	(Read)	1
Royal Blue	(Cheetham)	1
Lord Lee	(Berry)	1
William Lightbody	()	1
Formosa	(Smith)	1
Petronella	(Headley)	1
Clipper	(Turner)	1
Black Prince	(Butcher)	1

THE BEST TWELVE SHOW AURICULAS, THREE IN EACH CLASS.

Green Edges.

Name.	Raiser.	Votes.
Prince of Greens	(Traill)	30
Col. Taylor	(Leigh)	25
Talisman	(Simonite)	11
Champion	(Page)	6
Anna	(Traill)	5
Freedom	(Booth)	5
Imperator	(Lytton)	3
Apollo	(Beeston)	2
Lovely Ann	(Oliver)	2
Lycurgus	(Smith)	2

Grey Edges.

Name.	Raiser.	Votes.
Geo. Lightbody	(Headley)	30
Lancashire Hero	(Lancashire)	28
Alex. Meiklejohn	(Meiklejohn)	19
Richard Headley	(Lightbody)	6
Silvia	(Douglas)	4
Mrs. Moore	(Douglas)	2
Dr. Horner	(Read)	1
Confidence	(Campbell)	1
Alderman C. E. Brown	(Headley)	1
John Waterson	(Cunningham)	1

White Edges.

Name.	Raiser.	Votes.
Acme	(Read)	24
John Simonite	(Walker)	20
Smiling Beauty	(Heap)	15
Conservative	(Douglas)	15
Reliance	(Mellor)	2
Glory	(Taylor)	2
Mrs. Dodwell	(Woodhead)	2
Catherine	(Summerscales)	1
Omega	(Turner)	1
Dr. Kidd	(Douglas)	1
True Briton	(Hepworth)	1
Ann Smith	(Smith)	1
Regular	(Ashworth)	1
Cleopatra	(Read)	1

Selfs.

Name.	Raiser	Votes.
Pizarro	(Campbell)	12
Mrs. Douglas	(Simonite)	10
Ellen Lancaster	(Pohlman)	10
C. J. Perry	(Turner)	8
Blackbird	(Spalding)	7
Garibaldi	(Pohlman)	8
Topsy	(Kay)	5
Duke of Argyle	(Campbell)	4
Lord of Lorne	(Campbell)	3
Sapphire	(Horner)	2
Metropolitan	(Spalding)	1
Royal Blue	(Cheetham)	1
Black Bess	(Woodhead)	1
Meteor Flag	(Lighthody)	1
Othello	(Netherwood)	1
Wm. Lighthody	(Lightbody)	1

The following took part in the election, and to them we return our best thanks for the assistance thus afforded:—The Rev. F. D. Horner, the Rev. H. H. D'Ombrian, the Rev. E. C. Fellowes, Miss Woodhead; Messrs. J. T. D. Llewellyn, R. Gorton, W. Brockbank, T. Lansdown, C. Phillips, T. E. Henwood, J. Douglas, E. Wilson, W. F. Bateman, J. Garner, B. Simonite, W. Bolton, A. Potts, J. Ball (C. Turner), C. M. Royds, J. Cheetham, C. Orchard, H. White, T. Stirk, H. Wilson, R. Dean, H. A. Rolt, G. Thornby, J. Booth, F. Fife, and E. Pohlman.

[Accompanying the voters' returns were a number of interesting general remarks, which will be given in another issue of this Journal, together with the list of Alpine varieties.]

CANTERBURY ROSE SHOW.

THE anticipations which I announced a little while ago as to the forthcoming Rose season were realised at the "opening of the ball" at the old Cathedral city on Saturday last, the 27th. It was a real pleasure to find Roses so thoroughly in character and looking so fresh and bright, while the universal verdict was that there never had been so little aphid, nor ever did the plants look more healthy and promising; and, despite the rough and cold winds of the past few days, there was no sign of their evil influence on the many beautiful stands scheduled.

The Exhibition was the seventh that the Society (the Canterbury and Kent Rose Society) has held. Its name and scope has been somewhat altered. Formerly it was confined to East Kent, but is now open to the whole county, while several prizes are open to all England, and were sufficient to bring Messrs. Paul & Son from Cheshunt, Mr. Prince from Oxford, and Mr. B. R. Cant from Colchester, while the class for Teas induced Mr. Eckroyde Claxton to come all the way from Liverpool and enter as an amateur into competition with such redoubtable champions as Messrs. Prince and Cant in the class for twelve Teas, and, what is more, to cleverly beat them—a feat of which he may well be proud. The Show was held in the Foresters' Hall, by no means so good a room as the Corn Exchange either for size or light; but as the Committee had decided to hold the Show on Saturday, the Corn Exchange was not available. The stands were arranged around three sides of the room, with a double table down the centre, and on the fourth side the vases and bouquets were placed. Happily there was no place for a band, so that there was a possibility of enjoying a chat and taking a general survey. We found that Mr. W. H. Wakeley of Rainham was the most successful competitor, and that Canon Hodgson of Saltwood also occupied a prominent place. Mr. R. E. West of Reigate, Mr. Stanley, Mr. Claxton, and others upheld the credit of the amateurs, while, as I have said, some of the well-known Rose firms contributed much to the beauty and success of the Show. The following were amongst the principal prizes in the class for eighteen varieties, one truss of each:—Mr. W. H. Wakeley of Rainham was first with a beautiful box, which not only took the cup given by George Farley, Esq., but also the silver medal of the National Rose Society for the best box in the principal classes and the bronze medal of the National Rose Society for the best bloom. The box contained Mrs. Baker, Captain Christy, La France, Marquise de Castellane, Violette Bouyer (a beautiful bloom), Dr. Lovell (the best bloom of this variety I remember to have seen), Louis Van Houtte, Xavier Olibo (a splendid flower which claimed the bronze medal), Madame Gabriel Luizet, Prince Arthur, Duchess of Vallombrosa, Camille Bernardin, Prince Camille de Rohan, Mons. Noman, Duke of Teck, Thomas Mills, Charles Darwin, and Duke of Edinburgh.

In the class for twelve varieties Capt. Knight of Bohning was first with Pride of Waltham, Marquise de Saunia, Captain Christy, Catherine Mermet, A. K. Williams, Duke of Edinburgh, Marie Van Houtte, Prince Camille de Rohan, Marie Rady, Charles Lefebvre, La France, and Souvenir d'un Ami. The Rev. H. B. Biron was a good second, and Mr. R. A. West an excellent third. In the class for twelve Teas or Noisettes, Mr. W. W. Wakeley was again first with Madame Welch, La Boule d'Or, Souvenir d'un Ami, Catherine Mermet, Vicomtesse de Vesins, Comtesse de Nadaillac, Caroline Kuster, Maréchal Niel, Souvenir de Paul Neyron, Jean Ducher, Marie Van Houtte, and Laurette. Captain Knight was second, and Mr. John Hollingworth of Turkey Court, Maidstone, third. In the class for six trebles, Mr. W. W. Wakeley was again first with fine blooms of Madame Gabriel Luizet, Duke of Edinburgh, Ahel Carrière—these were three magnificent blooms—Marie Van Houtte, and Louis Van Houtte. The Rev. H. B. Biron was second, and Mr. Hollingworth third. In the class for twelve varieties Mr. Stanley was first with a good box containing Général Jacqueminot, Thomas Mills, Souvenir d'Elise Vardon, Dr. Lovell, Henri Ledechaux, Maurice Bernardin, Dupuy Jamin, Julie Touvais, La France, and François Michelin.

In the class for thirty-six varieties for nurserymen, open to all England, Messrs. Paul & Son of Cheshunt were first with a very fine stand containing a number of splendid flowers of François Michelin, Captain Christy, Henri Schultheis—a very fine flower, A. K. Williams, Alfred Dumesnil, Madame Isaac Pereire, Madame Hippolyte Jamin, Ulrich Brunner—a splendid bloom of a flower that has gained much in Rose estimation lately, Marie Baumann

Lady May Fitzwilliam, Etienne Lavet, La France, Marguerite de St. Amand, Dupuy Jamain, Mons. E. Y. Teas, Ahel Carrière, Madame Gabriel Luizet, Charles Lefebvre, Madame Prosper Laugier, Adolphe Rothschild, Reynolds Hole, Duke of Edinburgh, Magna Charta, Sénateur Vaisse, Violette Bouyer, Horace Vernet, Catherine Soupert, Beauty of Waltham, and Marie Baumann. Mr. B. R. Cant was second, and Mr. Prince third. In the class for twenty-four varieties, twelve Teas and twelve Hybrid Perpetuals, Messrs. Paul & Son were again first with La France, François Michelin, A. K. Williams, Ulrich Brunner, Camille de Rohan, Prince Arthur, Duchesse de Morny, Général Jacqueminot, Reynolds Hole, H.P., and Maréchal Niel, Sovenir d'un Ami, Catherine Mermet, Niphotos, Jean Ducher, Comtesse de Nadaillac, Sunset, Letty Coles, Rubens (Teas). These were the best flowers on this very beautiful stand.

In the class for twelve Teas or Noisettes, open to nurserymen and amateurs in all England, Mr. E. Claxton of the Rosery, Allerton, Liverpool, took first prize with a beautiful box of blooms containing Princess of Wales, Madame Cusin, Jean Ducher, Caroline Kuster, Alha Rosa, Souvenir d'un Ami, Anna Ollivier, Marie Van Houtte, Etoile de Lyon, very fine; the Hon. Edith Giffard, very pretty; Comtesse de Nadaillac, and Souvenir d'Elise Vardon. Mr. Claxton also exhibited a very beautiful stand of Madame Cuzin, most brilliant and fresh in colour but a little rough. In the class for six of any one variety Canon Hodgson was first with a beautiful stand of Comtesse de Nadaillac, the most lovely I think of all Teas. In the class for six Roses, Miss C. Wake was first with Duke of Wellington, La France, Duchesse de Morny, Marquise de Castellane, Cloth of Gold, and Souvenir d'un Ami. Some very pretty stands of Roses with added foliage of Ferns and grasses were shown. The first prize was taken by Miss Welby, who also took the first prize for a basket, that adopted by the National Rose Society with a basket tastefully arranged. Miss Hawkesworth was second with one on which the flowers were better, but the arrangement was somewhat too lumpy. It should always be remembered by exhibitors that lightness and not heaviness should be aimed at; many a good stand is spoiled by neglecting this. I have seen stands otherwise very beautiful spoiled by having what I have no doubt the exhibitor thought were very beautiful but too heavy flowers being placed at the top, thus destroying all proportion between the top and bottom.

Such, then, was the first Show of the season; and while much credit is due to the indefatigable Secretaries, the Rev. H. B. Biron and Mr. W. Mount, for the excellence of their arrangements, great credit must be given to those exhibitors who, especially those in the neighbourhood, upheld the prestige of the Society, for which I hope there may be a prosperous career. Cathedral cities, as a rule, are slow in their movements; let us hope in this case it may be slow and sure.—D., Deal.

GERMAN IRISES.

WHAT Orchids are amid the denizens of stoves and greenhouses Irises are amongst hardy plants—quaint in form, if not grotesque, yet stately and graceful, and nothing in their season—late May or early June—approaching them in their colours or fragrance. They are, without exception, the most striking and the most ornamental of the many fine plants with which our herbaceous borders have been enriched of late years.

Irises, particularly the German or broad-leaved Iris, have yet to be given the place they are entitled to among hardy ornamental plants. Their broad ample foliage renders them very ornamental, and, when in flower, almost every shade of colour is found among them. Added to their beauty, another of their claims for general acceptance is their adaptability for almost every description of soil and situation, for they are very hardy and not at all fastidious. They will grow, indeed seem to luxuriate, where many plants do not—namely, in the smoky atmosphere of towns. It certainly is some years since I had experience of them in a town garden, but twenty years ago I found them among the very best of plants for early summer flowering near one of the largest manufacturing towns of the West Riding of York.

The shrubby border is not the place to see them at their best, as the soil is impoverished by the roots of the trees or shrubs, and too dry in summer, or when they are making and perfecting the growth. Margins of water, provided the water does not rise so as to convert the soil into a bog, will suit them, and the foot of a rockwork is an appropriate position, as they are not alpine but valley plants. They also come effectively in wild or natural arrangements of plants, particularly in a hollow, in which naturally there is an accumulation of vegetable matter, the *débris* of surrounding vegetation. Such positions, however, are only at the command of those with extensive domains, and those seeing them in such positions do not see them in anything like their best condition.

To see them in all their beauty an open situation is essential, and in a mass if it can be afforded, clumps or masses yards across being most effective; isolated plants are nevertheless very fine. The soil needs to be of a porous description, and yet sufficiently rich, or containing humus to sustain a vigorous growth. I have not seen them doing well in stiff clays, indeed I consider soil containing plenty of grit along with vegetable soil elements of their succeeding. Our soil is loam over gravel, but with a good dressing of well-decayed manure they do well and increase rapidly. Most soils, however, can be made to suit them, heavy soil by some opening material, and light soil by the addition of some moisture-holding and enriching substance. They do not like drought nor a wet sour soil.

They are increased by division, which may be practised in early autumn or early spring, the ground having previously been well and deeply stirred or trenched and liberally manured. Plant so that the rhizomes are covered about a couple of inches, and make the soil moderately firm about them, and allowing a distance of fully 2 feet from plant to plant; but I plant a yard apart every way, as the divisions are good, and this serves them about three years with space, when they

are ready for division. At this distance the plants send up flowering stems nearly a yard high, and the flowers are correspondingly fine. A mulch over the roots in winter is shown in the summer growths, and mulching and watering during dry weather in summer brings a reward in the endurance of the blooms with the foundation of a vigorous growth and flowering in the season following. To thin the growth after flowering when it has become crowded, removing the weak, and leaving the stronger only fairly thin so as to admit light and air for the solidification of the growth, is attended with good results in respect of a good bloom, nothing militating so much against flowering as the breaking up into a number of growths which have not room for development nor an opportunity of perfecting. Avoid crowding, feed liberally, and assign them an open situation in the full sun, but sheltered from winds.

The German Irises are particularly fine this year, the tropical heat of last season having no doubt ripened their growth unusually well, though the manure to which we treated them liberally has also in no small measure contributed. The species, *Iris germanica*, is a self, having purplish-blue standards and purple falls. This may be the progenitor of the many fine varieties we now possess, but as all the broad-leaved Irises pass under the broad title of *I. germanica* it is doubtful; indeed, we have varieties of several species included under that head, as *amœna*



Fig. 2.—Iris Gracchus. (See page 8).

aphylla, *neglecta*, *pallida*, *squallens*, and *variegata*, the last being a fine plant for isolated specimens on grass, and these are so intermingled as to be almost impossible of separation, though it may be noted in the flower or their marking, together forming a group of matchless beauty. Amongst the most noteworthy is the one chosen as representing the type—viz., *I. atropurpurea* (fig. 1, page 3), the flowers of which, both of its standards and falls, are rich purple—very fine indeed, and as sweet as Lily of the Valley. It is one of the earliest flowering, and one of the freest.

I. spectabilis is another purple self, and very desirable for its early flowering, it being one of the earliest, and is very free. *I. pallida dalmatica*, though not a true representative of *I. germanica*, is generally included in the broad-leaved Irises, and has very large flowers, being one of the best. The standards are lavender, the fall being also lavender tinged with purple. *I. pallida speciosa* is a very deep purple or violet self, and very beautiful. *Othello* is another purple self of a very rich shade of blue. *Chameleon*, with its deep blue standards and violet falls veined with white, is very attractive. *Celeste* is a lavender self, albeit it has an orange beard; and *Madame Paquette* has reddish purple standards and rosy purple falls, very fine.

Some of the varieties have a bronze or metallic lustre, some of which are:—Mozart with brownish bronze standards and purplish bronze falls, the flowers are very large; Phidias, standards bronze, falls coppery crimson, veined white and orange; Socrates, bronze tinged with purple standards, falls violet reticulated with purple, large and fine.

In fine contrast to the above are the yellows; one of the finest is Gracchus, of which the engraving (fig. 2) is a faithful representation, the standards being lemon or yellowish white, falls pale yellow and richly marked or reticulated with purplish crimson. It is dwarf in growth and free flowering, well deserving the first-class certificate recently accorded to it by the Royal Horticultural Society. *I. aurea* is a golden yellow self, fine; and very effective is *Heriart de Thury*, its chrome-yellow standards and plum-coloured falls reticulated with sulphur or white rendering it very conspicuous. *Flavescens*, a primrose yellow self, has very large flowers, being very fine. *Magnet* has rich bright yellow standards, the falls purple reticulated white, whilst *Hector* has yellow standards and brownish red falls stained with purple.

In white forms, which are always appreciated, we have the very beautiful feathered variety represented in the engraving (fig. 3)—viz., *Madame Chcreau*, white, edged and feathered with violet, rendering it quite charming, and it flowers very freely. Scarcely less lovely is *L'Innocence*, pure white self, only there is a very chaste reticulation of purple and gold. It is very fine, indeed exquisite. *Calypso* has white standards and purple falls, distinctly reticulated white. *I. florentina*, a white self, is very desirable for its free flowering, and delicious fragrance. *Poiteau* is white tinged with lavender in its standards, the falls deep purple reticulated white, a fine large flower; and *Victorine* has the white standards blotched with blue, the falls violet purple, veined with white.

In fancy colours we have rosy lilac standards and purplish crimson falls, margined and reticulated with white in *Cordelia*, and *Queen of May* affords rosy-lilac in both standards and falls, the latter veined yellow, which render it very distinct and fine; *Duke of York* has fawn standards, and purplish-violet falls with white margin; *Sir Garnet Wolseley's* standards are white flaked purple, falls crimson and white.—G. ABBEY.

[The flowers shown in the engravings were supplied by Mr. T. S. Ware, Tottenham.]

BROCKHAM ROSE ASSOCIATION.

THE twentieth Brockham Rose Show was held on Saturday, June 27th, at Burford Lodge, near Dorking and Boxhill, the country seat of Sir Trevor Lawrence, Bart., M.P., and Lady Lawrence.

It was rather too early a date for every Rose-grower, considering the unfavourable weather of June, but for many it was positively impossible to show anything, and so some of the well-known exhibitors, who have helped to make this renowned Rose Show (which is the parent of so many other shows) what it is, were able to do nothing. However, it surprised Judges and everyone to see so good a Show. Of sixty-one members twenty-six were represented as exhibitors, and there were eighty-one entries, well arranged, and showing that general improvement in the growth of the Rose which it is the object (or should be) of every such association to encourage. There was not one really bad box, so much have the "good old (Brockham) times" changed, and the setting up, and consequent showing off, of the flowers was the rule rather than the exception.

All the classes but one were represented, especially the twelves and Teas, and there was a desirable evenness in the competition this year which ought to encourage shy exhibitors; for it is a discouraging thing to compete with "giant" Rose-growers, and the continued carrying away of "all the prizes" (which is the term generally in use at shows) by one or two members is very apt to weaken the Association and lessen the interest taken in it. Of the devices and decorations it is possible and right to speak in terms of praise. The number of entries was greater than usual, and the drawing-room decorations were both graceful and in some cases striking, notably that which won for Mrs. Fowke the first prize, and Lady Lawrence an extra prize.

The Judges were two old friends, Mr. George Paul (Old Nurseries, Cheshunt) and Rev. A. B. Alexander, with the addition of Mr. Fred. Pawle, Secretary of the Reigate Association. Their decisions were by no means easily obtained, but in every case were unanimous. The selection of the best Hybrid Perpetual gave the most difficulty, for there was no really "grand" bloom to settle the question off-hand.

An hour's idleness before the judging began gave the opportunity of looking round the garden and the greenhouses. It is difficult to say too much of the courtesy, kindness, and patience of Sir Trevor Lawrence, the popular and hospitable owner, who personally went round the very numerous houses, and pointed out many of the wonders and beauties in his collection of Orchids, which are of world-wide reputation. A description of Burford Lodge has appeared in a previous number of this Journal. Of course the Orchids were as a rule out of bloom, but there were exceptions amongst the *Cattleyas*, *Cypripediums*, *Lælias*, *Oncidium*s, *Saccolabium*s, and *Masdevallias*, *Odontoglossum Alexandræ*, *Dendrobium*s, several of which, with *Anguloa Ruckeri*, *Promeneia stapelioides major*, *Aerides expansum*, *Odontoglossum vexillarium superbum*, and an extraordinary little *Masdevallia* of port wine colour, wonderfully marked, *impacta purpurea*. There was a large number, too, of splendid double Tuberous Begonias, for which Sir Trevor Lawrence is famous, and many specimens of *Anthuriums*, and a strange hybrid red and white streaked specimen, *A. Rothschildianum*; also *Salvia carduacea* (Thistle *Salvia*), and a curious and rare Australian trailing plant, with flowers like rabbits' tails, *Trichinium Manglesi*. But it is not the "houses" only for which Burford Lodge is renowned. More ordinary plants are grown with equal care. Nothing is crowded, and yet the variety is very great. There are large beds of *Alstroemerias* of all colours, Tree Pæonies, *Gladioli*, *Aquilegias*, single Dahlias, Carnations (a splendid pure deep yellow Tree Carnation of great size greeted us as we entered the large conservatory), besides Roses in profusion, *Spiræas*, &c. It is certainly a glorious

garden, and, sheltered under the perpendicular ridge of Box Hill, must escape many dangers from wind and frost.

At twelve the tent was cleared, and the Judges went to work with the following results:—For twenty-fours Rev. Alan Cheales took the first prize for A. K. Williams, *Maréchal Niel*, C. Lefebvre, Earl of Pembroke, *Gloire de Dijon*, Duchess of Bedford, *Niphetos*, Duke of Teck, Marie Baumann, Duke of Wellington, La France, Madame Berard, Louis Doré, Jean Ducher, Duke of Edinburgh, Dr. Sewell, *Souvenir d'Elise*, Sultan of Zanzibar (the best H.P. in the Show), Caroline Kuster, Marguerite de Roman, Helen Paul, Prince Arthur, The Baroness, and Cheshunt Hybrid. It was a grand box, and very near came the box of Lady Lawrence, who won the second prize with *Reine Marie Henriette*, Crown Prince, Duchess of Bedford, Cheshunt Hybrid (Tea), A. K. Williams, Catherine Bell, Duke of Edinburgh, *Souvenir d'un Ami*, Princess Beatrice, General Jacqueminot, Madame Montet, Marquise de Castellane, La France, Charles Lefebvre, Earl of Pembroke, Sultan of Zanzibar, John Hopper, Anna Ollivier, John Bright, *Gloire de Dijon*, Dupuy Jamain, Madame M. Rigat, Firebrand, and *Souvenir de Malmaison*. An extra prize was awarded to Mr. Cuthell. For the twelves Mr. E. Horne won the first prize with Charles Lefebvre, Marquise de Castellane, Annie Laxton, Elie Morel, Abel Carrière, Marie Baumann, Marie Van Houtte, Magna Charta, Captain Christy, Duke of Teck, and Maurice Bernardin. The second prize went to Mr. Wylie, and the third to Mr. Wm. Praed. For the sixes the Hon. H. D. Ryder carried off the first prize with Mons. Noman, Catherine Mermet, *Maréchal Niel*, La France, Captain Christy, and Abel Carrière. Mr. Thompson took the second prize, and Mr. Leopold Seymour an "extra." Seven exhibitors competed for the triplets (four of each). Mr. Cheales took first prize for *Maréchal Niel*, Charles Lefebvre, A. K. Williams, and Marie Baumann. Lady Lawrence came next with Duchess of Bedford, *Souvenir d'un Ami*, A. K. Williams, Cheshunt Hybrid (Tea), and Mr. Horne third "extra" with Baron N. de Rothschild, Madame Bravy (grand bloom), Charles Lefebvre, and Cheshunt Hybrid.

Lady Lawrence and Mr. Leopold Seymour took first and second prizes respectively for six blooms of one kind, Lady Lawrence's La France being splendid blooms. Mr. Cuthell had an "extra" for his *Gloire de Dijon*, fine but uneven. In the class of twelve Teas there were five exhibitors, and the boxes of each were decidedly good. Mr. Horne, Mr. Cheales, and Mr. C. G. Stone divided the honours between them. In Mr. Horne's box, which was first, there were Jean Ducher, Madame Bravy, *Maréchal Niel*, *Souvenir d'un Ami*, Climbing *Devoniensis*, Anna Ollivier, Marie Van Houtte, *Rêve d'Or*, Madame Welch, *Gloire de Dijon*, Comtesse Ouvrartoff, and Madame Marie Arnaud; while Mr. Cheales showed Bouquet d'Or, Mons. Furtado, Duchess of Edinburgh, *Maréchal Niel*, Jean Ducher, Homère, *Niphetos*, Catherine Mermet, Madame Cusin, Madame Berard, *Souvenir de Therese Levet*, and *Souvenir d'un Ami*. Mr. Stone showed M. Marie Arnaud, Boule d'Or, *Niphetos*, *Gloire de Dijon*, *Souvenir d'Elise*, Belle Lyonnaise, Rubens, Madame Lambard, Duke of Edinburgh, Comtesse Riza du Parc, Alba Rosea, and *Souvenir d'Elise*. Mrs. Barclay won the first prize for the following six Teas:—Madame de Tartar, Madame Willermoz, *Devoniensis*, Madame Bravy, *Souvenir d'un Ami*, and Annie Sisley. Mr. Birkett won the second prize in this class, for which there were nine competitors. Mr. W. Cattley was the only representative in the class for previous non-winners, showing six separate Roses, and taking the prize. Mrs. Mortimer won the gold medal for her beautiful box of *Souvenir d'un Ami*, Mr. Thompson and Mr. G. Stone being second and third with Bouquet d'Or and *Souvenir d'un Ami* respectively. There were ten competitors in this class. As aforesaid, Mr. Cheales took the silver-gilt medal of the National Rose Association for the best Hybrid Perpetual Sultan of Zanzibar, and Mr. Mortimer took the silver medal for the best Tea, a grand bloom of *Souvenir d'un Ami*.

The decorations for the dining table were wanting in variety of colour and foliage. Mrs. Cuthell took the first prize for a tasteful arrangement in a glass basket on a mirror, and Mrs. Birkett took second prize. The drawing-room devices attracted much notice, and were for the most part very gracefully arranged. The first prize went to Mrs. Fowke for a very uncommon and elegant device in a high glass vase filled with white Poppies, the Bride *Gladiolus*, and White Canterbury Bells, with Ferns and Grasses. Mrs. Birkett took the second prize for a particularly neat and tasteful decoration, and Lady Lawrence for a high vase arranged with white Pæonies took an "extra." The buttonhole bouquet prizes went to Miss Horne, Miss Tritton, and Mrs. Praed.

Mr. George Paul, Cheshunt, brought a very fine collection of new and other Roses, comprising Marguerite de Roman, Helen Paul, H. Schultheis, B. de Rothschild, Alphonse Soupert, Violette Bouyer, Grace Darling, Longfellow (a purple Chas. Lefebvre), Comtesse de Paris, Madame de Watteville (new Tea), Colonel Felix Breton, Lady of the Lake, Pride of Reigate, William Warden, White Baroness, Madame Alice Van Geert, Sunset (new Tea), *Maréchal P. Wilder*, Lady M. Fitzwilliam, and R. C. Sutton. Mr. Appleby of the Box Hill Nurseries also showed a fine collection of Tea Roses, *Gloxinias*, and other plants; and Mr. Girdlestone, an amateur of Sunningdale, brought a very fine collection of new Roses, amongst which were Mons. Alfred Dumesnil, Catherine Soupert, Prefect Limberg, Violette Bouyer, Crown Prince, *Souvenir de Gabrielle Drevet*, Duke of Albany, Alphonse Soupert, *Gloire de Bourg la Reine*, Madame Montet, Dr. Hogg, Grace Darling (Bennett's Tea), Glory of Cheshunt, Henrich Schultheis, Edith Giffard (new Tea), Antoine Mermet, Melanie Soupert, White Baroness, Perle d'Or, Mary Pochin, Madame de Watteville (Tea), Sunset (Henderson, New York), and Marie Pare, a Hybrid Tea.

The Committee and Judges were entertained at luncheon by Sir Trevor and Lady Lawrence, and there was a very large gathering at the Show, the attractions being numerous and the weather magnificent. The band of the Royal Engineers, under the able leadership of Herr Sawerthal, played sixteen pieces of well-known music under the trees on the wide lawn. Next year the Brockham Association reaches its "majority." It may be truly said that it is much more vigorous now than it ever was, and the Treasurer and the Secretaries seem as young and energetic as ever. Rose-growing is for all classes, and seems particularly suited to all who want to get away from cares. The names of many country clergymen are known as Rose-growers. It is a "country parson's recreation" which no one would deny to him. A lad, on being asked what he should like to be when he grew up, said, "I should like to be a clergyman and grow Roses." The lad

knew no better. He might well have made a worse choice.—A. B. ALEXANDER, *Shedfield Vicarage*.

RICHMOND SHOW.

FAVoured by exceedingly fine weather the Richmond Horticultural Society held their annual summer Show last week (June 24th) on the usual site—the Old Deer Park—and again large numbers of exhibitors and visitors were attracted to what is invariably one of the most satisfactory of suburban shows. In some of the classes the competition has been keener in previous years, and there were not quite so many miscellaneous non-competing groups, yet there was abundance of well-grown produce—plants, fruit, and vegetables, to which three marquees were devoted. That appropriated to plants was one of the largest (240 feet long by 60 feet wide) and most handsome we have seen, and only needed Mr. Cypher's giant specimens to have rendered its appearance all that could be desired. Unfortunately, however, there was a lack of large plants, such as were required to form the central back in a marquee of such dimensions, and in consequence it did not seem well filled. A central line of tall Palms would have served to remove somewhat of this appearance, and had the stove and greenhouse plants occupied a more prominent position near the entrance they would have still further assisted in the improvement. In all other respects the arrangement and general management of the Show were all that could be wished, the Committee having rendered their courteous and energetic Secretary, Mr. Ford, much assistance in his arduous duties.

Plants.—One of the chief features of this Show for several years past has been formed by the groups in competition, and some extremely tasteful productions have been seen there, especially from Mr. Hudson, who set an example in grouping that has been successfully followed by many others since. The great fault with the majority of groups, and it also applies to floral decorations generally, is too great a heaviness, and those engaged in this work appear slow to realise the fact that the best effects are produced by the graceful disposition of a few light plants or flowers, with the colours harmonising rather than violently contrasting. Bold masses of brilliant colours are only suitable where effects have to be viewed from a distance; for near inspection quieter results are much more satisfactory. In the nurserymen's classes Messrs. Cooper & Co., Covent Garden, secured first honours for a charming group such as their manager, Mr. Bruckhaus, has so frequently staged on previous occasions. There were central Palms and tall Dracenas, with a prominent plant of *Croton Andreanus* beautifully coloured; a groundwork of Ferns, amongst which were interspersed *Gloxinias*, *Disas*, *Tuberous Begonias*, and the useful little *Caladium argyrætes*. The whole was neatly margined with *Cyperus variegatus*, *Isolepis*, and *Panicum*. Messrs. W. Fromow & Son, Chiswick, were, after some consideration on the part of the Judges, placed second with an admirable group, but scarcely sufficiently well filled, and the employment of a few more Ferns in the foundation would have been advantageous. Orchids were liberally used in this group, *Dendrobiums*, *Oncidiums*, and *Cattleyas* being very showy; but the most effective of all were the *Saccolabiums*, of which the curving spikes of purple and white flowers were most beautiful. *Lilium longiflorum* was also employed with excellent effect, a bold central plant of the variegated Pine Apple and a neat margin of small Ferns finishing a bright, varied, and pretty group. Mr. H. James, Castle Nursery, Lower Norwood, was third with a rather heavier but effective group, in which *Hydangea paniculata*, *Cbrysanthemum frutescens*, and numerous Orchids were the chief materials.

In the gardeners' class the competition was also close, the principal exhibitors being Mr. G. R. Geaves, Hatfield House Gardens, Cambridge Park, J. Wigan, Esq., Mr. Chadwick, and Mr. Bowell. Mr. Geaves had a graceful combination of Ferns, *Gloxinias*, *Cockscombs*, and *Coleuses*, with taller *Crotons*, Palms, and *Lilium auratum*. Mr. Wigan showed some choice Orchids in his group; both Mr. Chadwick and Mr. Bowell also exhibited well.

The principal collections of stove and greenhouse plants were the two entered in the class for nine from Messrs. T. Jackson & Son, Kingston, and Mr. H. James, Lower Norwood, who were placed respectively first and second. The Kingston specimens were even, fresh, and well flowered, the most notable being *Dracophyllum gracile*, *Erica Dennisoniana*, *Pimelea mirabilis*, *Franciscea calycina*, and *Clerodendron Balfourianum*. Mr. H. James's plants have been frequently seen before this season, but *Allamanda grandiflora* and a *Stephanotis* were in excellent condition. With six plants Mr. Bates, Poulett Lodge Gardens, Twickenham, took the lead with *Sobralia macrantha*, *Bougainvillea glabra*, *Allamanda Hendersoni*, *Cattleya Mossiæ*, and *Dipladenia hybrida*, all in capital health. Mr. Bowell was placed second, his best plant being a large *Oleander* well flowered. The *Pelargoniums* from Messrs. H. Little and W. Clay added much to the beauty of the large marquee, and the large group of seedling *Pelargoniums* raised by Mr. Wiggins occupied a prominent position. Messrs. James, Jackson, and Little were the exhibitors of Orchids and the prizewinners in that order, Mr. James having large masses bearing an abundance of flowers: his *Cattleyas* and *Epidendrum vitellinum* were particularly showy. Messrs. Jackson's *Dendrobium suavisimum* with two dozen spikes was handsome, and Mr. Little's *Dendrobium Dearei* with thirteen spikes, some having ten flowers each, was one of the best examples of this pretty Orchid that has been exhibited. Palms, Ferns, *Caladiums*, and miscellaneous plants were fairly represented, but were not of remarkable merit. The principal prizes were won by Messrs. Hooper & Co., Bates, Bowell, East, Munro, Wheeler, Chadwick, and Sallow.

Cut Flowers.—These were not quite so numerous as usual, and the competition with Roses was much less keen. Messrs. Paul & Son were the premier exhibitors of thirty-six and twenty-four blooms; Mr. Mitchell, Rainham, Essex, having the best twenty-four H.P.'s and the best twelve Teas; T. W. Girdlestone, Esq., following in the former class and J. P. Kitchen, Esq., Hampton, in the latter. All the blooms were fresh, but Messrs. Paul's were of excellent substance and exceedingly rich in colours. Mr. J. R. Chard, Clapham Common, was the most successful exhibitor of flower vases and bouquets, the vases being light and graceful, but the bouquets were too crowded to be satisfactory, and a similar remark applies to nearly all the bouquets shown. There was good competition for the

table decorations, Mr. Thos. Butcher, South Norwood, securing the first prize given by Lady Ellis for a light tasteful arrangement, in which white *Begonias*, *Rhodanthes*, white *Iris*es, *Tuberous Begonias*, and *Odontoglossums* with *Lygodium* fronds, formed the chief features. Mr. J. R. Chard followed. Two other contributions from ladies were commended, but in both these the mistake had been made of attempting too much, and the tables had a heavy appearance that could please but few.

Fruit.—Several exhibitors staged praiseworthy samples of fruit in these classes. For six dishes of fruit Mr. Munro secured the lead, having Black Hamburg Grapes of good colour, Elruge Nectarines, Best of All Melon, Sir Joseph Paxton Strawberry, Negro Largo Figs, and Grosse Mignonne Peaches (large). Mr. Bates was a close second, his Black Hamburg Grapes being finely coloured. Mr. Osman, Ottershaw Park Gardens, Chertsey, had the finest Black Hamburg Grapes, large in bunch and berries, and handsomely coloured, Messrs. Feist and Bates following. Mr. Osman also took the lead in the white Grape class, having Buckland Sweetwater very large, and was followed by the same exhibitors as in the previous class with Muscat of Alexandria and Foster's Seedling. In a local class Mr. Bates was first with three bunches of Alicante Grapes, well coloured, and Mr. Coombs



Fig. 3.—Iris Madame Chereau. (See page 8.)

obtained the same position in the corresponding white variety class with Muscat of Alexandria.

Vegetables were extremely fine, the premier collection of twelve sorts from Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Glenhurst, Esher, deserving every praise. Mr. Coombs also competed very closely. Messrs. Sutton's prizes for Cucumbers were won by Messrs. E. R. Geaves, F. Wigan, and J. Atkins.

The principal non-competing exhibits were groups of plants from Messrs. Jackson & Son; Lee & Son, Hammersmith; J. Vander Rees, Tooting; J. Laing & Co., Forest Hill; and R. Drost, Kew Nursery.

CHERTSEY DISTRICT HORTICULTURAL SOCIETY.

For twenty years this Society has been established and greatly contributed to the excellence of the gardening in one of the most pleasant parts of Surrey. The annual exhibitions of the Society are held in different places, some gentleman usually, if not invariably, placing his park or grounds at the disposal of the Committee—an act of generous kindness that is appreciated by managers and visitors alike. The last Show, and probably

the best, was held in Ashley Park, Walton-on-Thames, the seat of J. S. Sassoon, Esq. The Tndor mansion is an interesting, even an historical old building, for it was once occupied by the famous Cardinal Wolsey. At present one side of it is clothed with venerable Magnolias, and the pleasure grounds and park are well timbered with trees old and young, and the entire surroundings of the mansion kept in beautiful order by Mr. Sutton, the gardener.

The Exhibition was held in three marquees in the Park—one, very large, accommodating the specimen plants, another wholly occupied with groups arranged for effect, a third containing fruit, cut flowers, and vegetables, and the competition was highly creditable in every department. No pretence will be made to give anything like a detailed report of the Show, a glance at its leading features being all that is practicable.

In no section was the interest keener than in the effect groups, for which special prizes were offered, and in no classes did the Judges experience greater difficulty in granting the awards. Two classes were provided, one for semicircular groups 14 feet by 7 feet, the other for similar groups 10 feet by 5 feet, arranged on the ground. In the former class the first prize was won by Mr. R. Caute, gardener to J. P. Robinson, Esq., Brookleigh, Esher, with a bright, light, and beautiful arrangement. Associated with Palms and other foliage plants were *Lilium auratum* and *umbellatum*, Tuberous Begonias and Campanulas, with graceful Humeas drooping over all, the front being well finished with Ferns, Gloxinias, and Panicums, not a pot being visible, yet no semblance of overcrowding. Mr. Sutton, gardener to J. S. Sassoon, Esq., was a close second with a similar arrangement, in which some scarlet Pentstemons had a pretty effect; and Mr. Wakefield, gardener to E. Pettit, Esq., Bowater, Oatlands Park, third, with a rich floral mass, but somewhat crowded. In the smaller groups, in which the first and second prizes were given by the President of the Society, G. F. Wilson, Esq., the competition was even more keen. After a deadlock, only relieved by the retirement of a Judge, the first prize was awarded to Mr. Plowman, gardener to C. L. Lavers Smith, Esq., Oakfield, Walton, with a well-finished arrangement of good plants; a groundwork of Ferns with healthy *Dracænas* and Palms rising above them, the back brightened with scarlet *Liliums* and the front margined with *Lobelias* and *Isoetes*. Mr. Millican was placed second with a charming arrangement, and but for the weak margin and visible pots of *Lobelias* he must have had a higher place. Mr. Frankis, gardener to J. W. Wilson, Esq., Oatlands Park, was third with an extremely pretty arrangement of *Saxifraga pyramidalis*, Canterbury Bells, and Palms; Mr. Reeve, gardener to W. Hewitt, Esq., Templemore, having the fourth place with a highly meritorious assortment.

In the large tent a brilliant feature was a collection of plants from Messrs. T. Jackson & Sons, Kingston, which included splendidly flowered Orchids, Heaths, and other hardwooded plants and a few choice Gloxinias. The best six stove and greenhouse plants were staged by Mr. Wakefield. *Erica ventricosa alba*, fresh and good; two *Azaleas*, *Stephanotis*, very fine; a *Rhynchospermum*, and *Dracophyllum*. In the class for four plants Mr. Plowman was to the fore with a *Kalosanthes*, *Clerodendron*, *Rhynchospermum*, and *Stephanotis*, all in splendid condition. Mr. Reeves had the best specimen flowering plant, a bright and healthy example of *Erica Cavendishiana*. Mr. Caute secured the first prize for four Ferns, excellent examples of culture; and he staged a brilliant example of *Acalypha tricolor*. Mr. Child had the best *Fuchsias*—columnar plants 6 feet high, with pendant sprays of fine flowers and clean foliage; also the best Begonias and Achimenes. *Caladiums*, very fine indeed, won first honours for Mr. Reeve. Mr. Carpenter staged admirably grown Gloxinias; Mr. Millican, *Liliums*; Mr. Reed, Orchids; and Messrs. Bennett & Reeves, *Pelargoniums*. Most or all of the exhibitors named also secured prizes in other classes.

Fruit was of good average quality. The prizes for black Grapes were won respectively by Messrs. Osman, gardener to L. J. Baker, Esq., Otter-shaw Park; Sparrow, gardener to Rev. A. Bramwell, Barrow Hills; and Frankis, gardener to J. W. Wilson, Esq., Oatlands Park. Mr. Osman was first with white Grapes, very fine Buckland Sweetwater; Messrs. Sparrow, and Frankis being second and third with Foster's Seedling, ripeness, not size, being favoured by the Judges. The last-named exhibitor staged the best Melon in the Show—Read's Scarlet-flesh—the best green flesh being Hero of Lockinge from Mr. Child. Mr. Sparrow had the best Peaches, apparently Gros Mignonne; and Mr. Wakefield the best Nectarines—Lord Napier. By far the finest Strawberries in the Show were exhibited by Mr. T. Sharpe, Knole Hill, the variety being Marguerite; and Mr. Sutton won the prize for a collection of fruit.

Very good stands of Roses were staged by Messrs. Sparrow, Carpenter, and Bennett, who were awarded the prizes respectively. Mr. Millican out-distanced all competitors with dining and drawing-room epergnes. Trusses of ripe Strawberries with *Deutzias* rising from the base of the former, purple Sweet Peas at the top, the latter being finished mainly with scarlet Sweet Peas, White Roses, and pink Begonias. The successful exhibitors of table plants were Messrs. Caute, Sutton, and Reed.

Vegetables were in great force, Mr. J. Waite, gardener to Col. Hon. W. P. Talbot, Esher, securing the first prize with a collection comprising splendid dishes of Onions, Artichokes, Asparagus, Cauliflowers, Potatoes, Carrots, and Tomatoes, Messrs. Child and Sparrow following with most creditable produce.

A good deal more might be said about this excellent Show if space permitted, but a line must be found to record a presentation—an article of silver at the luncheon to Mr. Thomas Rawlings in recognition of his valuable services as Secretary to the Society since its formation in 1865.

PRUNING ORCHIDS.

THE remarks recently made in your columns by Mr. Prinsep and "A Thinker" anent the pruning system are supremely ridiculous. They both exclaim because the opponents of that system, and particularly Mr. Baines, required that a pruned Dendrobe should be exhibited in London before they could accept Mr. Prinsep's assertions as conclusive. Personally I fail to see any just cause for complaint. London is not only the largest and richest city in the world, but is the capital of this kingdom, and, I might add, of Europe. London holds the same position in this

nineteenth century which Paris held in the eighteenth, and everyone who wishes to advance a new theory or make a name must come here to have his pretensions investigated by experts in his department of human intelligence.

When Mr. Crookes startled the scientific world with the announcement of his discovery of the radiometer, many sceptics arose, yet I never heard that he considered himself aggrieved when asked to exhibit his extraordinary little instrument before the Royal Society. Again, were the Australian cricketers offended at being invited to show us their quality on our metropolitan ground? Quite the reverse, they were delighted at the opportunity afforded them of proving that they were as good, if not better, men than ourselves.

Every innovator and every discoverer must be prepared to encounter a certain amount of incredulity until time has proved the soundness of their views, and there is not the least reason why Mr. Prinsep should be any exception to this rule. He has stumbled upon a discovery which is opposed to all the teachings of Nature; so opposed indeed, that had he lived in old days under the Inquisition and dared to propound his new theory, he would probably have found himself in durance vile. As it is, he need now only wait a few months until Orchid growers have had an opportunity of testing his practice, when, if it succeeds, one and all will, I am sure, be quite ready to accord to him the honour which is his due. Of course if others cannot make the pruning system answer it must be relegated to that large lumber room where hundreds of other fads have gone before.—B. D. KNOX.

MAIDSTONE ROSE SHOW.

THE annual Exhibition of the Maidstone Rose Club was held in the Concert Rooms on Monday, and although not equal in extent to the Canterbury Show, owing mainly to the fact that there are no prizes open to all England, and consequently the large growers, Messrs. Paul, Cant, and Prince, who showed so strongly at Canterbury, were not there, yet a very good collection of Roses from amateurs was shown, and the competition was keen and spirited; but taken altogether I do not think that the quality of the flowers was as good as in the Cathedral City. The devices were better, and the prizes for shoulder knots brought together a good competition, while the prize for garden Roses introduced a novelty which was very pleasing, and which I hope to see still more largely shown at the National on the 7th.

In the class for twenty-four distinct varieties, twelve Hybrid Perpetuals and twelve Teas or Noisettes, the prizes were awarded to Captain Knight, Mr. W. H. Wakeley and Mr. John Hollingworth. The competition was very close between the first and second stands. Captain Knight's Roses were Henri Ledechaux, Marquis de Sauria, Exposition de Brie, Madame Hippolyte Jamin, Belle Lyonnaise, Marie Rady, Marie Van Houtte, Souvenir d'un Ami, Madame Furtado, Horace Vernet, Laurette, Anna Ollivier, Comtesse de Nadaillac, Louise de Savoie (a very beautiful Tea, rarely seen), Duke of Edinburgh, A. K. Williams, La France, Catherine Mermet, Captain Christy, Madame Willermoz, Charles Lefevre, Eugène Furst, and Madame Marie Finger.

In the class for eighteen, distinct, Mr. R. E. West was first with a beautiful box, containing La France, Eugène Furst, Madame Gabriel Luizet, Marie Baumann, Violette Bouyer, François Michelon, Marquise de Castellane, Mary Quennell, Merveille de Lyon, Alfred Colomb, Helen Paul, Duke of Teck, Duke of Edinburgh, Ulrich Brunner, Abel Carrière, Baroness Rothschild, A. K. Williams, and Duchesse de Vallomhrosa. Mr. H. Foster of Ashford was second with a good stand, containing among others a bloom of A. K. Williams, which obtained the bronze medal of the National Rose Society for the premier bloom in the Show. Mr. J. Hollingworth was third in the class for twelve. Mr. R. E. West was again first with a perfect box, which also obtained the National Rose Society's silver medal for the best box in the Show. Irrespective of numbers it contained La France, Louis Van Houtte, Baroness Rothschild, Madame Gabriel Luizet, A. K. Williams, Countess of Rosebery, Duke of Edinburgh, Marie Van Houtte, Marguerite Brassac, Marquise de Castellane, Abel Carrière, Violette Bouyer. The Rev. H. B. Biron was second.

In the class for nine Mr. J. M. Fuller was first with Duke of Edinburgh, Marie Finger, Prince Arthur, Madame Hippolyte Jamin, Charles Lefevre, Marguerite de St. Amand, Etienne Levet, Madame Gabriel Luizet, and Marie Baumann.

In the class for six trebles Mr. W. H. Wakeley was first. His box contained good blooms of Abel Carrière, Louis Van Houtte, Madame Gabriel Luizet, &c.

In the class for six varieties Mr. Fuller was again first with Marquise de Castellane, La France, Dr. Andry, Marie Finger, Madame Gabriel Luizet, and Marie Baumann.

In the class for twelve Teas Mr. John Hollingworth was first with Caroline Kuster, Madame Welsh, Marie Guillot, Perle des Jardins, Bouquet d'Or, Catherine Mermet, Souvenir d'un Ami, Comtesse Parnesse, Belle Lyonnaise, Anna Ollivier, Madame Jules Margottin, and Souvenir de Pané Neyron. Captain Knight was second, and the Rev. H. B. Biron third. His box was noteworthy for containing a very beautiful seedling raised by Mr. Hossack, gardener to the Marquis of Conyngham at Bifrons, called Lady Conyngham, but it was unfortunately too like Catherine Mermet to be classed as distinct from that fine flower.

In the class for six Teas Messrs. Ashhurst & Tucker were first with Marie Van Houtte, a very beautiful bunch of Rêve d'Or, Souvenir d'un Ami, Anna Ollivier, Catherine Mermet, and Belle Lyonnaise.

In the class for six of the same variety Mr. R. E. West was first with Madame Gabriel Luizet, Mr. Wakeley second with Gabriel Luizet, and Messrs. Ashhurst and Tucker third with Gloire de Dijon.

In the class for six Teas, three of each, Captain Knight was first with Madame Hippolyte Jamin, Souvenir d'un Ami, Madame Furtado, Laurette, Marie Van Houtte, and Madame Liabaud.

In the class for twelve bunches of Moss, Provence, or Hybrid China Roses Mr. A. J. Killick was first with York (a white Rose), Lancaster (a red),

and York-and-Lancaster (striped), true, and supposed to be between the two former. I have never seen these before, and should be glad to know if some light could be thrown on this interesting subject—Charles Lawson, the old Cabbage, Maiden's Blush, Coupe d'Hébé, White Moss, Seven Sisters, Blairii No. 2, and Crested Moss.

The prize given by Mr. John Hollingworth, value five guineas, for the best stand of Roses combined with Ferns or other foliage, was won by Mrs. H. B. Biron with a stand arranged in her usual good taste, and clearly showing that her hand had not lost its cunning. The second was taken by Miss Bensted; Miss Lawrence was third, and Miss Henwood fourth. In the class for shoulder knots Mrs. Robert Knight was first, Mrs. Biron second, Miss S. Mercer third, Mrs. H. White fourth, and Mrs. H. A. Hughes fifth. In buttonhole bouquets there was a keen competition, and most of them exhibited much simplicity and good taste. Mrs. Tatham was first, Mrs. H. White second, Miss Henwood third, Mrs. Knight fourth, and Mrs. S. Mercer.

I may add that it was to all lovers of the Rose a great pleasure to see that veteran rosarian Mr. John Hollingworth quite himself again, and bearing no trace of the severe illness which caused so much distress to his many friends. He was as keen and as hearty as ever.—D., Deal.



HARDY FRUIT GARDEN.

STRAWBERRY time has come again, later than usual it may be, but never with greater abundance of this wholesome and popular fruit. The late season has caused ripe fruit of the early sorts to be eagerly sought after and more highly prized than usual, and where special provision had been made to obtain early fruit in the open air such care has been well rewarded. Now is the time to see if there are any faults in our method of culture, and to strive to obtain clear knowledge of the cause of failure and its remedy. In the second week of June we saw a very steep and high bank in a railway cutting, upon which there was a Strawberry hed with ripe fruit clustering thickly upon the plants. Let the lesson conveyed by the tempting sight be turned to general account. It is true that we cannot have railway cuttings in our gardens, but we may contrive some banks with a high slope at an acute angle in many a snug sheltered corner facing the south-west. We have previously called attention to the importance of some such plan, as well as of planting large heds of late sorts under standard fruit trees and near high walls facing the north to retard the ripening of the fruit as much as possible, so as to prolong the season of ripe fruit by every means in our power. Never waste valuable space upon inferior sorts. We have so many really excellent varieties now that there should be no difficulty in making a selection to suit every garden, and to this important end we strongly recommend our own plan, which is to procure a dozen plants of each new sort, and to make little trial heds so as to test them fairly with older varieties. Certainly space could be found for such trial beds in all large gardens, and it is the only safe way to ascertain the real value of any sort, and to obtain the best.

Repeatedly have we advised our readers not to dig between Gooseberry bushes after they are established in the soil, and to apply manure as a surface dressing only. By this treatment the roots are preserved from laceration, and, being drawn to the surface by the manure, health and vigour of growth is ensured. The merit of economy of labour may also be claimed for it, and the still more important one of immunity from the attacks of the Gooseberry caterpillar. A grower of Gooseberries by the ton has recently called attention to this fact as of vital importance to fruit farmers. He tells how a considerable sum of money was spent upon planting several acres of Gooseberries, how careful he was to break up the soil well annually between the bushes, how the foliage was eaten by caterpillars to such a serious extent that growth was checked. Hand-picking, dusting with lime and hellebore powder, were all tried and found ineffectual, when, with failure apparently inevitable, he one day happened to turn from his almost leafless bushes to look over the enclosure of a neighbour, where, to his agreeable surprise, he saw Gooseberry bushes untouched by caterpillars, and found it was simply owing to the hard surface of the undug soil affording them no protection during winter. The hint was turned to account; there was henceforward no more digging between Gooseberry bushes, and no more caterpillars.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—Directly the last of the fruit is gathered cleanse the foliage of dust and insects by frequent washings with the syringe or garden engine, and if red spider or other insect pests are present an insecticide may be necessary to effect a clearance. The free exposure of the current year's growth to light and air by taking out the shoots that have borne fruit, as well as any others that are not likely to be wanted when the autumn tying-in takes place, is equally important. If this operation is judiciously performed, little pruning will be necessary in the autumn, and the young growths having had full exposure will be thoroughly ripe and well set with flower buds. The inside borders must have liberal supplies of water, and of a stimulating nature if the trees have been heavily cropped and show signs of exhaustion. If the wood is in a forward condition as to ripeness the roof

lights may be removed or remain on a little longer, but the question as to early forced trees is not so much in getting the wood ripe as in preventing premature ripening of the foliage. Before the lights are removed it will be advisable to mark well any trees requiring lifting, to check any exuberant growth, or for supplying fresh loam to any showing signs of failing vigour. The operation is best performed just before the fall of the leaf. Trees so treated seldom cast their buds or fail to set good crops of fruit, responding quickly on the application of genial heat when the house is closed, as might be expected from the presence of active surface feeders, the formation of which the lifting accelerates.

Succession Houses.—Trees ripening their fruit will be the better for a little ventilation night and day, and although moisture must be kept from the fruit a moderate amount of air moisture is necessary for the benefit of the foliage, available surfaces being damped occasionally, and the border must not on any account be allowed to become dry, but be kept moist. Artificial heat may now be dispensed with, except during a dull cold period, when a gentle heat in the pipes will contribute to a circulation of air and improve the quality of the fruit.

Trees after Stoning.—The exhausting process of stoning being completed, the trees should be thoroughly examined, and all pendant fruit that can be turned up to the sun brought round and supported, apex upwards, on pieces of lath placed across the wires forming the trellis. Keep the shoots carrying fruit stopped, and guard against overcropping. A fruit to every square foot of trellis covered by the trees is ample where size and quality is a chief consideration, and timely thinning to that number will not only increase the size of the fruit, but will often prevent its being cast in the process of stoning, or result in premature ripening. Syringe twice a day thoroughly until the fruit begins to ripen or soften, using clear soft water, as any other is likely to stain the fruit. Let there be no coddling, but leave a little air on all night, increasing it early in the morning, and rise to 80° after closing time in the afternoon.

Late Houses.—Keep the trees thin of wood, not allowing more to remain than will be necessary for furnishing next year's bearing wood, the extension of the trees, or that essential to attracting the sap to the present crop. Stopping will only be necessary with laterals and shoots above the fruit, unless it be advisable to stop any strong growth so as to divert the sap to other parts and secure an equal distribution of the growth. Let the borders be well supplied with moisture, and mulched so as to encourage surface roots. If the ripening is to be accelerated ensure it by early closing and hushand the sun heat in the latter rather than the early part of the day, being careful to ventilate early.

STRAWBERRIES IN POTS.—It is now time that these were secured, and as nearly every cultivator has his own favourites we need only mention those that have done us good service. Foremost may be mentioned La Grosse Sucrée, Vicomtesse Hericart de Thury, and Sir Harry. Keen's Seedling is an admirable sort, but a bad traveller, and though Mr. Radcliffe is a good forcer and large, it is a bad colour—at least, for market purposes. Preslent is an excellent second early, and James Veitch with Sir Charles Napier to succeed, finishing with Dr. Hogg and Cockscumb. The runners should be laid at once, either in small pots filled with good loam and a sprinkling of short manure, or they may be layered direct in the fruiting pots. The latter must be well drained, and the soil consisting of good loam, with a sprinkling of bone meal and decayed manure rammed quite firm. The runners of two rows may be drawn into one alley, which will facilitate watering. The runners should be taken from fruitful plants only and from young plants, as these afford the earliest and most vigorous runners.

CHERRY HOUSE.—The crop being gathered, the next consideration is to secure the perfect development of the buds for the subsequent season, it being essential to this end to keep the foliage of the trees clean and free from insects. The trees should, therefore, be syringed similarly to what they were before the fruit began ripening; the ventilators should remain open constantly, but as the growth will now be complete, or nearly so, the best plan is to take the roof lights off. The border must not be allowed to become dry, but an examination can be made from time to time, and whenever the necessity for water arises a thorough supply should be given. If there are any trees in pots they should be moved outdoors directly the fruit is gathered, placing them on a bed of ashes in a sunny situation, protecting the roots by plunging the pots. In this position they must be well supplied with water at the roots and over the foliage, so as to keep it clean and healthy.



CASTING ACCOUNTS.

At last most bee-keepers are awakening to the fact that in apiculture, as in every other business undertaking, accounts of expenditure and income must be rigidly kept, or the balance can never be clearly shown to be on the right side, and therefore it is impossible for any individual to prove to a sceptical person that there is a reasonable margin of profit to be obtained from bees kept upon any principle not that of destroying the bees in order to take their honey. It is not at all an easy matter to keep accounts in a regular

methodical manner, and to some people it seems difficult to keep separate in their minds capital and current expenses and income. There is a very decided leaning amongst amateur bee-keepers to show a large profit at the expense of capital and without deducting the current expenses, thereby giving an appearance of financial soundness without any stability in reality.

There need be no expense attendant on keeping a just and true account of these three items. A moderate-sized sheet of paper is the only requisite, and a regular custom of putting down items on the day money is received or spent. It is the object of this article to bring before the public an easy system of showing their profits or their losses upon sound commercial principles—a system by which, if at the end of twenty years as a bee-keeper a man was to be sold up or to give up the culture, his stock in trade would realise rather more than what has been expended upon it, and not wiped off again either by setting aside of income or increase of stock by means of swarms or any other method of decreasing capital by the result obtained from the bees themselves. The plan advised is given below, and if followed will generally give entire satisfaction, as simplicity is its merit and brevity its endeavour.

Capital Account—Current Expenses—Income.—Under the first heading of Capital Account all primary expenditure of swarms, stocks, hives, smokers, or all other necessary utensils in or about an apiary must be set down. Under the second heading all syrup or other food used in spring or autumn either to stimulate or carry the hive through the winter season must be entered; all supers, sections, and other vessels for obtaining honey from the hive or for putting it in for sale when obtained, and all quilts and coverings: and under the third heading all money received for honey or bees sold must be set down. If rent is charged, or attendance, they must of course be entered under the head of Current Expenses. The difference, then, between the amount of income and current expenses will give the profit for the year. When, then, this profit is ascertained a valuation of stock must be obtained; and if the valuation account allowing 10 per cent. for depreciation shows any deterioration, then a further sum must be deducted from the profit to bring up the stock to its original value. If, on the other hand, the valuation shows an increase in value of stock, then either the difference between the original capital expenditure and the increased value can be deducted from the capital account, thus reducing this original outlay; or the increase may be left to give income in the future from no expenditure at all, and also so as to allow in a bad year a depreciation of stock so far as it does not reach below the primary capital expenditure without making a call on the current profits in order to bring up the stock to its super-ordinary value, this being in effect the creation of a reserve fund. But it is absolutely necessary for everyone to impress upon his mind that if he originally spends £10 in capital account, and in the current year has £2 current expenses and £6 income, his nett income will be, if his valuation shows his stock to be worth £10, still £4 only; while if his stock is only valued at £8, his profit will be reduced to £2 in order to bring his stock up again to its normal value.

Again. If the stock is valued at £15 there are, as I said before, two courses open—one to reduce the capital to £5, the other to leave the stock intact at its £15 value to return increased income without any corresponding outlay. But if this be the course adopted, the stock must next year and in the future be maintained at £15 in order to maintain its proper status; otherwise it would, if there is any chance of future depreciation, be better to sell £5 worth of bees and stocks, and so to make sure of the money, although it might not be so remunerative as if well managed in the form of bees. It need hardly be said that if it suits the fancy of the bee-keeper he would be quite justified in selling bees to the amount of the increased value in stock, and looking upon such value obtained as a part of the current year's profits.

Such, indeed, is the course pursued by many, but to me it seems wiser to build up an apiary gradually with only the outlay originally made in the purchase of the nucleus hives.

In future, then, let every apiarian, even if the possessor of but one stock, endeavour to keep a clear if concise account of his profit and loss, and if at the end of the year his profits are not so great as he formerly imagined them to be before he began to reckon the cost of different items, he will, without doubt, feel a greatly increased pleasure in being able to point to a well-balanced account. He shows with pride that he is able not only to attend and watch over his bees, these givers of such great pleasure, but also to keep a just and strict account of all their labour, and so be of use to the world in general, and himself specially, as one of the few but ever-increasing number who prefer to gather the nectar from the flowers by Nature's given agents rather than allow it to waste its lovely substance without material benefit to humanity.—FELIX.

TRADE CATALOGUE RECEIVED.

W. J. Birkenhead, Fern Nursery, Sale, Manchester.—*Hardy North American Ferns.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

To Our Readers.—In consequence of the publication of the index for binding with the numbers for January to June inclusive, and the pressure of other matter, several articles of considerable interest must stand over till a future issue.

Exhibiting (H. G. M.).—We always like to see the printed conditions of a schedule before giving an opinion on a disputed point. Our opinion of your case as it is presented is this—If the two individuals have "gone into business" for earning a "living" by purchasing and selling plants, we do not consider they are eligible to compete in either of the sections; but if they rely on other employment for a "living" and they only make a little money by selling plants in addition, and in that way occupy their spare time, we fail to see how you can exclude them. Of course the conditions can be altered by the committee, if desirable, for another year.

Musa Cavendishi (G. S.).—This is usually cultivated in England, because it is sufficiently dwarf for ordinary houses. It is also free-fruiting, and when well ripened of good flavour. There are many varieties of *Musa sapientum*, which differ considerably in flavour, some being very fine, but they are mostly too tall for the houses in private gardens, and *M. Cavendishi* is much to be preferred.

Peaches Splitting (Alva).—It is somewhat singular that the fruits should be injured on the under side only. Are you sure they were not rubbed when young, such as in the process of setting? as the very slightest injury there would grow and show itself in the manner of the examples before us. We regret we can suggest no cure now. The fruit is not swelling kindly by any means. Is the border kept moist on the surface while it is dry below? See to this, and if there is the slightest evidence of dry soil 2 feet below the surface give a heavy watering, following with liquid manure. We should remove the most injured fruits and give the others a better chance to swell. Such as you have sent to us could never be of any use if left on the trees.

Eucharis Unhealthy (A. E. T. T.).—Your plants appear to be in a very unhealthy condition, and we should advise you to carefully read the article upon *Eucharis* culture in this Journal, April 9th of the present year, page 294, which was written by one who has been successful with this plant.

Bougainvillea (Ten-years Subscriber).—As nearly as we could judge from the small shoot sent we think your plant is *Bougainvillea spectabilis*, which is also much more shy in flowering than *B. glabra*. It appears to succeed best in good loam and peat without any manure, requiring a well-drained pot or border, as water must be liberally supplied during growth. Endeavour to have the wood well ripened, and keep the roots rather dry during winter, as a good rest seems necessary to ensure flowering. Firm, well matured, not too luxuriant a growth, and a distinct period of rest will probably enable you to flower the plant.

Hybrid Hibiscus (Cavan).—The flower sent appears quite distinct, and the plant is well worthy of preservation, especially if you find it retains its character.

Pruning Lilacs (Cambridge).—It is rather late for pruning if the bushes are to flower another year. Had you done so directly they ceased flowering, and the season proved good to thoroughly ripen their wood before autumn, they would undoubtedly flower the following season. The best time to prune Lilacs growing in borders outside is during the winter months, any time from the end of October to the following February, but the earlier it is done the better. These shrubs will bear very hard pruning, and for some seasons after will grow with increased vigour. If your bushes require to be cut back severely you had better leave them until winter, and a strong growth will be certain the following season, and in all probability a good crop of flowers the next spring if the branches are not too crowded and suckers are prevented extending from the roots. As to Chrysanthemums take off the summer bud, No. 3 in your diagram, and let the shoots 1, 2, and 4 extend. We will refer to the subject again.

Liquid Manure for Strawberries (M. F. B.).—There is no better liquid manure for Strawberries than the drainage from manure heaps or sewage, but when these are not obtainable guano water may be used, and has often been applied with great benefit. Half an ounce dissolved in a gallon of water is sufficient for plants in pots, but twice that quantity may be applied safely to established plants that need extra support in the open air. It should not be poured on the fruit or leaves, only on the soil, copiously, and if this can be mulched afterwards for the retention of the moisture it will be an advantage. It is an excellent plan to give liquid manure as soon as the fruit is set, then cover the ground with straw or other suitable material for keeping the fruit clean and preventing the evaporation of moisture from the earth. The use of liquid manure should be discontinued when the fruits commence colouring.

Ventilating a Vinery (F. J.).—No bard-and-fast rule can be laid down. On some days the front lights might be safely opened as you suggest, but with a dry driving wind blowing directly on the house we prefer not to open them to any material extent until the top ventilation fails to prevent the temperature rising too high. We are speaking now of Vines in full growth and with the crop swelling, as dry currents of air are then not conducive to free progress, but favourable to insects. The top lights should be left open to the extent of an inch or two all night, and should be opened wider the moment the sun raises the temperature in the morning, increasing the openings so long as the heat continues rising. With the top lights opened to the extent of a foot, the front sashes may be opened about an inch, more or less, according to the direction of the wind, increasing the top ventilation afterwards to its full extent if needed; then, if the temperature cannot be kept below 85°, the front lights must be opened more widely. We do not know that we can give more precise instructions, and the cultivator must exercise his judgment in the work in question. When the foliage gets firm and the wood commences ripening, more air may be admitted by the front lights than when the growths are young and tender. Your other letter has been handed to the publisher, the subject of it is beyond the province of the Editor.

Mildew on Grapes (C. O.).—We readily answer all the letters we receive, but by some cause or other that we cannot explain one now and then goes astray. It is by no means easy to tell you the "cause" of mildew on your Grapes beyond saying that the spores are in the house, and they find a suitable medium for germination. If you read the article on Chiswick, page 527 last week, you will find that some Vines in the centre of the great vinery there are attacked, while others right and left of them are free, the treatment of all being identical. The bunches there are dusted with sulphur tied in muslin, and a few days after are syringed with rain water. That destroys the mildew and does not disfigure the Grapes; but well water, or water containing lime, will leave unpleasant marks behind it. We should admit still more air, and employ a little more fire heat if needed for maintaining the requisite temperature. Keep the air of the house rather dry, and the roots of the Vines moist. In the winter the Vines and every part of the house should undergo a thorough cleansing, and painting if convenient, removing also the surface soil from the border if it is inside the house, adding fresh compost.

Red Spider on Vines—The Onion Maggot (N. H., Somerset).—There is no mistake about what is "wrong with the leaves;" they are swarming with red spider and the insects are abstracting the juices, hence the flimsy nature and yellow hue of the foliage. We should syringe them forcibly, directing the syringe between the bunches and driving the water directly to every leaf, not one should escape. A large four-gallon canful will not be too much for each Vine. If you cannot wash off the insects in this way—and we think you can—follow with a dusting of sulphur or an insecticide applied with a spray-diffuser, as little or none will then fall on the fruit—that is, if the work be carefully done. See our reply to "R. H. T.," on page 516. Do not employ any more fire heat than is necessary to prevent the temperature falling below 60°, keep the roots moist, and sprinkle strong guano water in the house when closing in the afternoon if the Grapes are stoned. The washing above referred to should be given when the sun is declining, leaving the ventilators open, so that the Vines get dry or nearly so before nightfall; or it may be done between five and six o'clock in the morning of a prospectively dry day, throwing the ventilators wide open and shaking the Vines to dislodge the water, and they will dry before the sun shines powerfully on them. When maggots get inside Onions they cannot be destroyed. You can try the effects of watering them with soapsuds, into each gallon of which a small wineglassful of petroleum is stirred briskly. This acts as a manure and should be applied in the evening. You ought to have tried the preventive remedy that was advised two or three weeks ago of covering the ground with lawn mowings.

Vine Leaves Withering (J. C.).—We are sorry your Vines are in such an unsatisfactory state. Of one thing we can assure you, and that is, we fail to perceive the slightest evidence of the phylloxera, and we think you have no cause to be alarmed on that score. We suspect you have indicated the source of the evil—wireworms in the border. As soon as you were aware of their presence it is a pity you did not plant it with Potatoes, and dig the sets up again when the plants were an inch or two high, and set more. We should plant Potatoes now if we had them,

and failing this should at once sow Carrots, but before doing so should give the border a good soaking with ammoniacal liquor from gas-works, if procurable, diluting it with five times its volume of water; if we could not get this we should try petroleum and soapsuds, as advised to another correspondent for his Onions. But we should first assure ourselves by an examination of the border that it is really infested with wireworms. We also think you have kept the house fully too warm, and we think it possible it has remained closed too long in the morning at some time or other. One of the leaves is certainly scorched—its condition being quite different from the others. We should lower the night temperature fully 5°, and employ as little fire heat as possible. Syringing the Vines with perfectly clear soot water could not possibly do harm, and might do good. It is made by securing soot in a bag and immersing in water for a day or two, then throwing in a few lumps of lime, and after removing the scum the liquor should be as clear as sherry wine, and of the same colour. It will be better to shade slightly than to allow the leaves to collapse. One reason for thinking the house has been kept too close is the length and slenderness of the footstalks of the leaves. We should, therefore, try a lower temperature, and give more air, especially very early in the morning, and should not close early with a high temperature and much moisture, and the same time a genial buoyant atmosphere must be maintained night and day.

Names of Fruits (W. J. J.).—The Grapes were mostly broken in transit, but we have little doubt the variety is Golden Champion. If it is disqualified under this name ask the judges to state what it is.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (H. M.).—*Lysimachia vulgaris*. (Cavan).—1, *Asclepias curassavica*; 2, *Thalictrum anemonoides*. (Pat).—1, *Adiantum macrophyllum*; 2, *Betonica grandiflora*; 3, *Nephrodium effusum* var. *divergens*; 4, *Hakea saligna*; 5, *Nephrodium molle* variety. (Cuckfield).—*Bupthalmum salicifolium*. (Campus Martius).—*Myrica Gale*, the Sweet Gale, a native of Britain, (Old Subscriber).—The pink and white flower is a variety of *Gladiolus ramosus*; the other is the yellow Sweet Sultan, *Centaurea suaveolens*. (C. H. S.).—*Pyrus arbutifolia*. (A. B.).—The Trumpet Honeysuckle, *Lonicera sempervirens*.

Unsealed Cells—Supering (A. G. F.).—Bees not sealing their honey cells in supers shows there is a break in the supply of honey on the pastures, or the bees are not finding it plentifully, or they would seal their cells. If your hive that has swarmed is pretty full of bees, super at once, and it will prevent other swarms issuing, and if your locality is a good one for bees—i.e., if there is plenty of honey-producing flowers in the neighbourhood, you may get some good supers.

COVENT GARDEN MARKET.—JULY 1st.

VERY heavy supplies reaching us, and prices are lower all round, more particularly Grapes and Strawberries. Vegetables plentiful.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	0 0 to 0 0	Lemons	case 15	0 to 21 0
Cherries	½ sieve	4 0 10 0	Oranges	100	8 0 12 0
Cobs, Kent	per 100 lbs.	0 0 0 0	Peaches	per doz.	6 0 10 0
Currants, Red ..	½ sieve	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0
„ Black	½ sieve	0 0 0 0	„ dessert	dozen	0 0 0 0
Figs	dozen	4 0 6 0	Pine Apples English ..	lb.	2 0 3 0
Gooseberries ..	½ sieve	1 6 2 0	Strawberries ..	lb.	0 3 1 0
Grapes	lb.	1 6 2 6	St. Michael Pines ..	each	3 0 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 6 to 2 0	Lettuce	dozen	1 0 to 2 0
Asparagus	bundle	2 0 5 0	Mushrooms	punnet	0 0 1 4
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 6
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	„ Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzoner	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 6 0 8
Leeks	bunch	0 3 0 4	Turnips	bunch	0 6 0 0



DAIRY FARMING.

THE DAIRY.

THAT the home farm dairy should be cool, sweet, clean, well ventilated, replete with every convenience, and stand in an open airy situation, safe from all risk of any foul odours being blown to it from buildings or yards, would appear to be

so clearly necessary to ensure the production of really good butter, as to require no particular mention here. But so frequently have we seen rooms used as dairies that were unsuitable for the purpose that it is in the interest of our readers to point out how liable cream and butter are to sustain harm or be spoilt outright from exposure to the taint of impure air. Much has been done at dairy and agricultural shows to explain the entire process of making good butter, and to show that it is not a matter of chance, luck, or guess work. But in addition to the large working dairy, with its elaborate apparatus and steam power, we should much like to see a small model dairy for, say, a dozen cows, wherein we could find the best possible combination of economy, simplicity and utility. Great and wealthy societies are apt to take too high a flight, which occasionally carries them over the heads of the class they profess to benefit, and they may certainly be said to have done so in this matter. Our model dairy should contain two rooms—one for the pans of milk and the butter, and the other for the churning, butter-making, and cleaning of dairy utensils. The air of the dairy proper must be still and cool—neither hot or cold at any season of the year, the temperature never exceeding 55° nor falling below 50°. The windows should have ribbed plate glass, such as Hartley's rough plate, to keep strong light from the cream; the walls should be battened, and the roof thatched with heather, reeds, or straw. A simple furnace and flue is sufficient to keep the dairy at a safe temperature in winter, and it is to be regarded as indispensable, the temperature of the dairy and of the cream for churning being precisely two of the matters of detail that are commonly neglected, often at a cost of time and labour much to be deplored.

Straining the milk should receive careful attention. In very hot weather it should only be in the pans twenty-four hours, in warm weather thirty-six hours, and during cold weather forty-eight hours. The correct temperature for the cream when put into the churn is 57°, and it is brought to that temperature by putting the cream crock in hot or cold water. It is also a good plan to rinse out the churn with cold water at 57° just before using it. We have found it by no means an easy matter to induce dairywomen to use a thermometer. With many of them butter-making is still a mystery into which ordinary mortals must not seek to penetrate, and as to using a thermometer, why, anybody could do that; but they prefer trusting to their judgment, and a certain intuition which they assume to possess. We are obliged to own that the result is doubtful. Sometimes, or several times in succession, the butter is good, then comes a failure, the blame being invariably cast upon the cows. Nor can such blame be lightly set aside, for it must in fairness be acknowledged that the milk of a frightened cow, or which has been much worried by flies, will sometimes spoil that of other cows if mixed with it. Then, too, it must not be forgotten that a filthy cow-house will taint the milk. There must be thorough cleanliness from the milking to the using of the butter. A dirty udder and the milker's hands must both be washed before the milking. We use bright tin pails and glazed pans kept perfectly clean. The large barrel churn is used three times a week, and a small box churn for the daily table supply of butter. No salt is used in the daily churnings, but for the butter from the hand churn about 1 lb. of salt is added to 50 lbs. of butter, which is made into pounds and half-pounds. The churn is turned slowly at first, then faster, but with a steady regular motion which ceases at once when the butter comes, the average time of churning being about forty minutes. The butter-milk is run off, and fresh clear spring water is used to wash it three times, and it is afterwards washed twice in water in which the salt has been dissolved. Ice is very useful in very hot weather; when it cannot be had, and the butter is soft, it is left in the churn for an hour or two in cold water. A butter worker is decidedly better than beating butter by hand or with a towel. We use a grooved table and a ribbed roller, and finely grooved butter-slices, so that handling is altogether avoided.

Potting butter for winter begins when the cows are turned upon the pastures to eat the fresh young growth of the after-math following the hay crop. The milk is then at its best, the butter high-coloured and of a rich nutty flavour. Jars, glazed inside and out, are used, each jar being filled at once, and not gradually, the butter at top being covered with a thick layer of salt, the top being covered with a bladder and lid. Especial care and attention should be given to this work, for it is now, when good butter is so easily made, that carelessness creeps in, and we have twice had our store of potted butter for winter spoilt. We prefer jars which will contain 20 lbs. of butter, as that quantity is soon used, and if well made it is good to the bottom of the jar. If old jars are in use examine them narrowly, and see if the glaze is at all worn off; if so, discard them, for a porous jar is liable to absorb impurities, which would taint and spoil the butter.

WORK ON THE HOME FARM.

We have now haymaking in hand upon six farms, and have had to watch closely the manner of setting about and conducting the work by the bailiffs. It is our rule to state our wishes clearly to each bailiff, to afford him every facility for carrying them out, and to see that it is done. If a man betrays by his actions that he is puzzled a kindly word or two of explanation will soon set him right if he is fairly intelligent, and it is only when a case of egregious stupidity occurs that one has to interfere and take up matters with a firm hand. In so critical an undertaking as hay-making this must be done, for a day wasted may lead to a serious loss. Workmen soon know if the foreman or master understands his business, and they are very apt to act accordingly. As usual, there has been some trouble with machinery arising solely from crass ignorance and stupidity. A little patience and firmness, however, soon set things right. The hay crop is certainly a good one, and we have a remarkable example of the wisdom of careful culture and the use of good seed for permanent pasture in a twenty-acre meadow with the third year's crop. The bottom was thick with White and Red Clover, among which were Grasses of somewhat lowly growth; above them were the Fescues, Timothy, and Foxtail; while above all, fully 3 feet high, was a wonderful growth of Cocksfoot. It was still higher in some places, and we were amused at the sight of some men mowing round tree clumps almost hidden from view as they bent to their work. At first the tedding machine made rather poor work at this extremely heavy crop, but by crossing and bringing the horse rakes somewhat early into use we contrived to keep it all well turned and shaken. Frequent showers have much helped root crops. Both Swedes and White Turnips have come well, and the Mangolds are already making a brave show. We have White Mustard on several farms in all stages of growth, and have just had twenty acres more sown upon some heavy land, clean, but poor.

The Flock.—The lambs are weaned, and all of them have been sent from the home farm to two upland farms. We were somewhat puzzled to find scour very prevalent among the strong early lambs that were feeding upon a sound piece of Rye Grass and Trefoil. Upon inquiry we found they were having an extra quantity of linseed cake, which has a laxative tendency if used to excess among young animals, and we have had the quantity used much reduced. All the over-age and inferior ewes have been withdrawn from the flock, to be at once folded upon a strong piece of Clover; they will also have some dry food, and be brought on for the butcher by autumn—not all at once, but in batches as they become sufficiently fat.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain
1885. June.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sndday	21	29.969	51.9	48.4	S.W.	58.0	66.6	46.3	118.6	41.9	—	
Monday	22	30.156	60.8	53.4	S.W.	58.2	68.2	48.1	117.8	43.1	—	
Tuesday	23	30.084	59.4	56.7	E.	58.7	65.6	54.9	80.3	53.4	0.013	
Wednesday ..	24	29.917	73.6	62.8	S.E.	58.9	82.6	55.7	122.0	48.9	0.173	
Thursday	25	29.975	56.9	55.1	W.	60.8	58.6	55.3	69.5	55.3	—	
Friday	26	30.215	53.9	50.7	N.E.	58.6	64.0	50.8	84.1	50.6	—	
Saturday	27	30.504	58.5	53.2	E.	57.4	74.2	45.1	117.0	41.4	—	
		29.089	60.0	54.3		58.7	68.5	50.9	101.6	47.8	0.186	

REMARKS.

21st.—Fine and bright, but not hot.
 22nd.—Fine and pleasant morning; cloudy afternoon.
 23rd.—Cloudy day, with drizzle in morning.
 24th.—Fine, bright, and hot; evening cloudy, with spots of rain.
 25th.—Dull all day, but fresh and pleasant.
 26th.—Fine but cloudy; bright, cold, moonlight night.
 27th.—Fine and bright.

Although very warm on Wednesday, the following day was so cool as to quiet counteract it, and the temperature for the whole week was rather below the average. There was very little rain.—G. J. SYMONS.



COMING EVENTS

9	TH	Hereford (Roses). Norwich (Roses).
10	F	
11	S	National Rose Society's Show, Manchester. Sidcup.
12	SUN	SIXTH SUNDAY AFTER TRINITY.
13	M	
14	TU	Royal Horticultural Society—Committees at 11 A.M.; Show of Plants
15	W	Bedford. Moreton-in-Marsh (Roses). [and Flowers.

ROSES ANCIENT AND MODERN.

THIRTY-SEVEN years have elapsed since I inserted my first Rose bud, and I cannot remember a time when I felt more proud than when told by my great authority, the under gardener, a wonderfully clever youth in his way, aged seventeen, that my precious bud had "taken." I shall never forget that Rose, though I cannot tell its correct name. It had the darkest, richest, and most velvet-like blooms I have ever seen, and was known in those days as the Crimson Velvet. It opened too much—that was its fault, and often showed a golden centre, but there is not one Rose seen at exhibitions to equal it in the texture of its petals and its depth of colour, which is not surpassed by the darkest of single Dahlias. I fear this distinct old Rose is lost. If I had been half as sharp as Mr. Bennett I might have some "pedigree" Roses now darker than his; but it is no use grieving. A favourite dark Rose in those days, very double, but flat, was the Standard of Marengo, a famous grower and bloomer. Our best "tree" of it was worthy of the name, for the stem was 8 feet high, quite self-supporting, and the head certainly 12 feet in circumference—a fine object in its season, rising above the shrubs.

The finest light Rose of the period was Souvenir de la Malmaison, almost new then, and caused quite a sensation. It is still one of the most useful of Roses for garden decoration, as with a little judgment in pruning, and not a little liquid manure, it will flower three times a year. It is also occasionally seen in exhibition stands, but it is essentially a garden Rose, one of the first to flower in the summer, and one of the last to cease flowering in the autumn. It is one of the best Roses for massing in beds, and associated with the dark crimson Queen of the Bedders or Général Jacqueminot the effect is beautiful; it is also equal to any and superior to most for growing in gardens near towns, or where smoke is prevalent, and one of the best companions for it there is the charming old favourite the common Moss Rose, of which it is not easy to have too many when there is a large family of young swells and fair damsels always wanting something for bouquets and buttonholes.

The most generally admired rose-coloured variety in 1848 in our collection, and it was considered large in those days, was Coupe d'Hébé, and when caught in its prime it is questionable if there is a more pleasing Rose of its colour now. It was possibly the more valued because it enjoyed the reputation of being the Queen's favourite, but it really required no royal patronage to enforce its charms. A favourite white Rose in the garden was Blanchefleur, neat, compact, nearly pure, but delicate; it is perhaps "gone." Its rival was Acidalie, which remains one of the best of garden Roses still; and so also remain huge bushes of the Maiden's Blush, perhaps the hardiest of all, and will last longer and produce more blooms in poor soil than any other Rose I know.

We had also in those days several bushes of the York-and-

Lancaster, not the carnation-flaked Village Maid that has often passed for it, but the true old historic Rose, sometimes all red, sometimes half red half white, the petals striped and marbled. These, with many other good things that would now be cherished, were driven away by "improvements." I know where I could get armfuls of the Village Maid that is prized as the York-and-Lancaster, this latter, a much less free grower and bloomer, being, I suspect, scarce. I know where it is, but the stock is limited.

The yellow Rose most valued was the Double Persian, and there is not one to surpass it yet for coat-decoration, the half-expanded blooms being just of the right size, and the colour so soft and pleasing. Larger and brighter was Harrisoni, but less free, yet undeniably beautiful. We had also another yellow Rose, the brightest of all, and the brightest still, for I have never seen a Maréchal Niel to equal it in the Crocus-like yellow of its petals. It had no name, but was just called the "Old Yellow," and old the tree was, with its gnarled stem, wiry shoots, and small leaves, but such rich golden blooms that are not commonly seen now, because only a few persons own this rare old Rose. The old tree referred to has been dead long ago, and some young ones that I reared are also "gone." I have been since told that the correct name of this Rose is Rosa sulphurea, and if it is, all I can say is that if such a Rose were introduced or raised now, it would not be endowed with such a modest name, for the blooms are as bright as a Buttercup, but, the truth must be told, they did not always open freely.

The older a person grows the more he likes to dwell on the past. The young look to the future, and rightly; but memories of bygone days haunt the minds of all who have passed the meridian, like the refrain of a sweet melody that often rings so pleasantly in the ears of old and young alike. But even the young like to be taken to the days that passed before them, and to learn what "was doing" then; hence, in a chat about Roses at the beginning of my thirty-eighth Rose season, I have commenced at the commencement of the love that has never waned. There is something encouraging, fascinating, satisfying, in the culture of flowers, and the "appetite grows with what it feeds upon;" hence I am now enjoying, with all the ardency of youth, the floral feast of the modern beauties of to-day; but I cannot forget that the varieties now nearly obsolete, such as Madame Laffay, Chenedole, Paul Ricaut, Paul Perras, William Jesse, Brennus, and a host of others, were as much admired in their time as the most famed of the moderns are admired now.

Just when we were priding ourselves on our great collection of Roses, which comprised several hundreds of plants, or trees, a new clergyman came upon the scene—a gentleman every inch of him, rich, generous, good, and withal a bachelor, so that, as he said, he could do as he liked, and he liked to grow Roses. He was a man of no half measures; he either did a thing thoroughly or let it alone. His Rose beds were as good as the best soil and any quantity of it could make them, and the best Roses that could be supplied by the late Mr. Rivers, and subsequently Mr. Paul, were procured, and year after year the new ones were added. This clergyman dearly loved Roses, and felt it would be good for others to delight in them too. His gardens were open during the Rose season; his "people" were encouraged to collect Briars, were taught to "work" them, and supplied with buds for that purpose. In a few years gardens around this great Rose centre were full of Roses, and the hedgerows destitute of Briars. He is "gone," but the interest he excited in the Rose remains, for he left many disciples who cherish his memory and follow his practice of pruning and disbudding, and in rivalling each other in the production of fine blooms.

This Rose rivalry that begins at home, seldom ends there. Some local flower show tempts, and a venture is made with a dozen blooms, hoisted perhaps in bottles, or flopped down in boxes of moss. It is singular that nearly all beginners in showing Roses in stands or boxes stage their flowers too low.

There are exceptions, but it appears to be the rule that it is necessary to be beaten to arrange the flowers effectively—that is, distinctly clear of the moss or surface of the stands. Provided the foliage be good, and the blooms are level, they never show to such great advantage as when 3 or 4 inches above the moss; but uniformity of height is of greater moment than any prescribed length of stem; and uniformity in size is another point of no small importance, as one or two disproportionately large blooms make the others appear smaller than they really are.

In exhibiting in the best competitions, those who mean to win must be up with the lark in the morning. The very earnest ones are among their Roses waiting for daylight, and calculating on the prospective brightness or dullness of the coming day; they cut accordingly, and as far as possible at once arrange them in the stands. Many a prize has been lost by waiting until the dew has departed, and packing the flowers in baskets for after arrangement. There may be no visible bruises in the petals at the time, but they have an awkward way of “coming out” just about the time the judges are coming in; and when the competition is keen these gentlemen are very glad to see a fault to help them out of a difficulty in arriving at a decision.

Having had something to do with Roses in various ways, tending them by day and watching them at night; having blundered in cutting and staging, and profited by some mistakes; having lost and won, criticised and judged, I claim some sort of familiarity with the favourite flower of youth and of manhood, and have been led into these reflections by a pleasurable anticipation of what the most modern blooms will be like to-morrow (I am writing this on Friday, July 3rd), at the Crystal Palace Show.—A WORKER.

P.S.—I have been to the Palace, and was impressed with the magnitude of the Show. There may have been larger exhibitions of Roses, but I do not remember having seen one. There appeared to be a length of about 800 feet of boxes in competition, apart from the marvellous contribution of Messrs. William Paul & Son, which I suspect has never been equalled by any rosarian in any country.

The Rose of the Show was Mr. Bennett's new triumph, Mrs. John Laing, a deep rose-coloured flower, large, solid symmetrical, and very fragrant. It is something like François Michelin, something like Mons. Noman, and in form a little like La France, yet quite distinct from all of them, and a grand Rose. Her Majesty was once more enthroned, but the huge blooms open flat like Paul Neyron. They must evidently be cut young, and will then add weight to any stand. Lady Mary Fitzwilliam is a beautiful nearly white Rose, destined to become popular; and another large light variety, Merveille de Lyon, was splendidly represented in some of the stands. The best dark Rose in the Show was Marie Baumann, at least no other was so good in so many stands, while the broad-petalled varieties Etienne Levet and Ulrich Brunner were in splendid form; so also was the Countess of Rosebery.

The finest Tea Rose in the Show was, to my mind, Souvenir d'Elise Vardon, and particularly charming was Comtesse de Nadaillac. Madame Cusin attracted by the translucency of its richly coloured petals; but darker was Grace Darling, a new Rose to me, staged by Messrs. Paul & Son of Cheshunt. Maréchal Niel was small throughout. The brightest stand of Roses in the Show, and the brightest I have ever seen, was the first prize twenty-four of Mr. Gray. Such are my impressions of this great Show of some “modern” Roses.

I have also had the pleasure of inspecting the National, the most truly representative Rose Show I have yet seen. “Ancient” Roses were there in hundreds, and were interesting; “modern” in thousands, and magnificent. The gold medal to Mrs. John Laing was a fitting tribute of merit, and the plants exhibited showed the vigour of the variety. Merveille de Lyon was something to see and to be remembered. Was ever such a display of white Roses seen before?

As yet this is not an A. K. Williams year; hundreds

of brilliant blooms of it were staged at the two great shows, but only three of them good—in the Cheshunt stand at the Palace, and these were past good, they were grand. Mrs. George Paul was very fine indeed at the National, crimson, with a tinge of violet, quite a distinct colour. Alphonse Soupert, rosy crimson, with broad cupped petals, was well represented, and is a Rose of promise; but what can be said about Mr. B. R. Cant's new Tea, Madame de Watteville? It ought to be called the Butterfly Rose, as the waved or winged petals, white, shaded with rose, and deepening towards the edge, have a most chaste and remarkable appearance. It is a lovely Rose, deliciously scented. Countess of Rosebery was in splendid form in a few collections, and a bloom of Ulrich Brunner, the premier of the Show, was 15 inches in circumference. This was evidently a maiden bloom. There were more maiden flowers than at the Palace, and consequently large, but many from the cut-backs were smaller, as if the fixture fell just between the two seasons or sections.

The richest of the very dark Roses were La Rosière, Jean Liabaud, and Abel Carrière. Distinct in depth of colour was Dr. Hogg, of which someone had a good stand.

This is a long postscript. The difficulty is to know when to stop, so will stop at the Doctor, or he will stop me; but with his permission I may possibly turn up again another day.—A. W.

IN THE GARDEN.

LADYBIRD BEETLE (COCCINELLA).—Examining the other day the tips of the young shoots of some Gooseberries, I was delighted to watch the behaviour of this little gardener's friend voraciously eating the almost innumerable green fly which were snugly stowed beneath the curled leaves. I previously knew this insect, which is known in different parts of the country as ladybird, ladybug, ladyfly, and ladycow, fed, as well as its larva, upon aphides, but had never before seen it in the act of feeding. I trust this note will meet the eye of many young gardeners, so that they may know how much to respect this extremely pretty and useful little beetle. I well remember being so ignorant or mischievous as to destroy some of them, and there are doubtless many young in the craft who are likely to do the same unless made acquainted with its value in the garden in reducing the hosts of aphides.

Referring to green fly leads one on to notice their peculiar method of attacking the extremities of young shoots of the Gooseberry, for example. Some of my young bushes were badly attacked, and that speedily, but I exterminated them by pinching the ends of the shoots and consigning them bag and baggage into the fire. Of course I felt more inclined to do this, because the young shoots were grown quite long enough, and following the excellent advice ancient this business recently given in the Journal, I stopped them, and thus stopped the green fly. It is doubtful if every young gardener knows the remarkable power these insects have of changing their very nature in early summer, about this time—*i.e.*, many of them cease depositing eggs and become viviparous, so that while in the earlier part of the season they lay eggs which in turn have to be hatched, and consequently they are not augmented so rapidly as when later on a whole community may become viviparous. The moral of this is, Destroy as many as possible early in the year, or you will have tenfold more work to do afterwards.

IRIS RETICULATA.—My bulbs of this gem are ripening off early. I have lifted some, and am highly pleased with their great size, for after growing a large number for many years I do not remember having lifted a finer batch. I was wishful to learn the result of last season's planting, as plenty of thoroughly decayed manure was placed directly beneath the rows of small bulbs, which were placed about 1½ inch apart, and covered with a mixture of coarse silver sand and ashes from burnt garden refuse in equal quantities. Evidently this treatment suited this pretty Iris, for the bulbs are turning out clean and very fine.

VEGETABLE FIRECRACKER.—Such is the name the Californians have given to *Brodiaea coccinea*, a very charming bulbous plant, which is now in blossom (June 29th). The slender stems are from 1½ to 2 feet high, terminated by numerous flowered umbels of tubular flowers; the tube is rich crimson scarlet, with the limb segments and small corona pale green—a very pretty contrast indeed, and waving gracefully it strikes you, as, in fact, it really is, one of the most distinct of all hardy

bulbs, for hardy it is if planted in the right position in rich vegetable soil. Thorough drainage is essential, and yet a cool moist position, and the bulbs should be placed a good depth beneath the surface so as to be quite clear of severe frosts, say 6 inches deep, and it dislikes being often disturbed, but may remain some years in the same position before it shows signs of deterioration.

TROPEOLUM POLYPHYLLUM.—This is one of the finest hardy plants possible to cultivation, with its long trailing shoots of pretty glaucous foliage, and very numerous axillary golden yellow flowers, it forms veritable wreaths of gold decorated with silver. In a light sandy well-drained soil it does wonders. I have repeatedly proved this in a small way, but when a few days ago I called at Messrs. Backhouse's nursery at York, and a large bed was shown me crowded to excess, I was more than convinced of the right position for it—revelling in the greatest luxuriance it, by this, doubtless forms a unique picture. It is certainly a plant which all gardeners should try to accommodate, as am sure it would satisfy most persons.

DOUBLE ROCKETS.—I have four varieties of these most useful and showy flowers—the French and Scotch whites, a purple and a pink, or rose; the last is very beautiful, double, forming immense spikes of flowers, but I believe comparatively scarce. Mine were picked up in the suburbs of Manchester, where it is greatly appreciated. The French white is very free-growing, but the spikes are rather lax and the colour faulty, being heavily tinged with purple; nevertheless it is a good garden flower. The Scotch is an excellent variety, forming dense spikes of pure white very full flowers, but it is not so free as the last, neither does it seem happy in many places south of the Tweed. As soon as flowering the stem must be cut down to induce young growth for cuttings. The purple and pink are both very good and showy, and a good plan to adopt after flowering is to peg the stems down to the soil, make a few cuts at the strongest joints on the side next the soil, and cover with a little sandy rich compost. Cuttings will be freely produced, which may be removed later on, often with nice roots, inserted in a cold frame, and a good stock of young plants will be produced.

ALPINE PINKS.—These are a very charming series by whatever name they are known. I am referring to *Dianthus alpinus* and its numerous variations. Certainly there is a great difference between what is considered as typical *D. alpinus* and what is usually distributed as *D. glacialis*. From a gardening point of view the latter is by far the best, but its life is short, and after flowering it frequently dies. Seedlings from *D. alpinus* vary greatly; in some the leaves are much narrower than in others, and the flowers vary in colour and height. There is no doubt these pinks are given to cross-breeding; that they will do so Mr. Lindsay of the Edinburgh Botanic Gardens has proved, for he crossed *D. alpinus* with *D. barbatus*, and I have now in my garden one of this hybrid flowering pretty freely, with the growth and individual flowers of *alpinus*, but the habit of *D. barbatus* is clear enough, as the flowers are borne in an umbel nearly a foot high, it is certainly a very pretty plant. Whether the alpine pinks known in gardens as *D. alpinus*, *neglectus*, or *glacialis*, are finally recognised as only alpines I care not, but shall always endeavour to cultivate as great a variety of them as possible. That known as *glacialis* is by far the showiest, as I have before said, producing dense masses of its rich flowers in well-drained sunny fissures of the rockery, and with plenty of sand in the otherwise rich loamy soil.—T.

HORTICULTURAL ARGUMENTS.

MUCH information may be derived by your readers from the discussions that from time to time arise and flourish for a while in your Journal, but there is occasionally a spice of personality cropping up in some of the discussions that takes away considerably from the pleasure and profit of perusal. No one will assert, with any show of sound reason, that discussions cannot be prolonged without the indulgence in personalities which too often take place. Gardeners as a class are labouring for the advancement of horticulture quite irrespective of personal advantage, either as regards mere pecuniary reward, or, what is more evanescent, a slight advantage in a wordy war.

Motives other than the elucidation of questions affecting the progress and welfare of gardening should not prompt anyone to seize the pen and rush into print. That such is not always the case is to be regretted, and the hope may be expressed that with the increased circulation, and consequently increased power of the gardening press, there may come an even more friendly and entirely impersonal manner of conducting horticultural arguments. It will always be found that no harm can be done by treating others in a spirit of fair play and honourable rivalry, a rivalry not

prompted by personal feelings of jealousy or animosity, but born of the desire to bring to light some new theory, elaborate some apparently valuable idea, or record in the fullest and best manner the success or failure of some particular mode of practice.

Young writers are too often prompted to attempt smartness at the risk of becoming personal. Such should be strictly guarded against. Others there are, who are no novices with the pen, and yet are sometimes found indulging in what can only be described as personal attacks. All who wish that Horticulture should be maintained in all its aspects at as high a position as possible, will, I feel sure, re-echo the expression of the hope that soon personalities in horticultural discussions will be conspicuous by their absence.—SCOTUS.

THE AURICULA ELECTION.

As noted last week, the general remarks accompanying the voters' returns in many instances contain many interesting remarks, and they are given below.

The Rev. F. D. Horner writes:—"Since the last general election, which I tabulated in the 'Florist and Pomologist' (Dec. 1876, to Feb. 1877), very few new Auriculas have come into distribution, through many are yet in the hands of the various raisers. When the best new seedlings appear, the old flowers will be mostly surpassed. Of those that were 'old' in 1876 there remain two green-edged (Prince and Colonel), two greys (Lightbody and Hero). No white edges and no selfs are able to hold their own against the new flowers in their respective classes."

The Rev. H. H. D'Ombraïn says:—"There are some which have been omitted, and which are perhaps better than some named, but it is impossible to get them, and when obtained difficult to keep, such as Page's Champion and Booth's Freedom. Others, such as Conservative, although first-rate varieties, are too high-priced to recommend to beginners, for whom this list is intended to be a guide."

Mr. J. T. D. Llewelyn thus speaks of Heroine (Horner):—"Few Auriculas have pleased me more than the Rev. F. D. Horner's Heroine (self)."

Mr. Douglas writes:—"The above are the best that are to be obtained at present in the usual way through the trade. I have left out Freedom and Champion in green edges because of the great difficulty in growing them. Silvia is more a grey than a white, and has been placed in the grey-edged class. Sapphire I would put in the selfs, but am not aware that it has been let out."

The following is from Mr. Henwood (Reading):—"Among seedlings not yet obtainable are Horner's Monarch (green edge), far and away the best green yet shown. Horner's Heroine, a glorious flower far in advance of any other self. Brockbank's Wm. Brockbank, a superb grey that is bound to make its mark. Brockbank's Lord Rosebery, a grand self. Mellor's Reliance, one of the best white-edged varieties yet staged. Mellor's Mrs. Heap, a lovely blue self, rather small, but of splendid form. There are many other good seedlings that must ultimately displace some of the good old sorts. But still the good old sorts need not fear, for judging from present appearances we young exhibitors shall be grey-headed before some of the grand seedlings are in commerce."

Mr. Richard Gorton states:—"Were a number of the well-known new varieties allowed to be classed in the list a great change would result. Horner's Heroine is certainly at the top of the tree in selfs, and his Greyhound would also be in the first three in greys; Simonite's F. D. Horner would be high up, and his Heather Bell would be placed second or third also in the white edges."

Mr. C. M. Royds (Rochdale) says:—"Seedlings in all classes of much quality are now being exhibited, and will supersede many of the old varieties, but our old friends must not be neglected."

Mr. Bolton favours with the following note:—"I have given the varieties only in commerce, but my opinion is that several of those named are surpassed by seedlings, notably in selfs by Heroine (Horner), which I consider the best self raised; and in the other classes Mr. Horner has seedlings that well deserve to be placed in the best six. Mr. Douglas, Mr. B. Simonite, Miss Woodhead, and S. Barlow, Esq., have also some very good seedlings, which, when in commerce, will hold a place in a good twelve, if ever they are so fortunate as to be distributed."

Mr. Ben Simonite makes no remarks anent seedlings, which are not sent out; but adds that the Rev. F. D. Horner and himself "have seedlings which would upset the list given." He preferred, however, that these should win their way, and stand on their own basis.

Mr. H. White (T. E. Hay, gardener) writes as follows:—"The improvement in Auriculas is steadily going forward, the Rev. F. D. Horner, Mr. Douglas, and Mr. Simonite being especially successful in raising new varieties. In green edges Simonite's Rev. F. D. Horner (not in commerce), I consider the best, and in grey edges, Greyhound, raised by Rev. F. D. Horner, is second only to George Lightbody, which I think is the most perfect Auricula we have. In white edges Rev. F. D. Horner's Luna, Magpie, and Miranda are the best I know of not in commerce, and in selfs Rev. F. D. Horner's Heroine is a long way in front of anything yet raised."

Mr. R. Dean confines his selection to what he has grown of flowers known to be in commerce. His simple aim was to give a selection of good standard useful varieties that can be obtained by anyone desirous of commencing to grow Auriculas.

Mr. C. Orchard thinks that the election will be a good thing for young beginners, as giving them a guide as to what to exhibit.

Mr. J. Garner writes:—"I want it understood that there are several sorts I have never seen, and I have made the list out with nothing but what have been grown and shown, and the majority are not only in commerce, but can be had for a trifle, whilst some other inferior sorts command a much higher price."

Mr. C. Phillips states:—"Horner's Monarch will take a conspicuous place amongst the greens. Douglas's Mabel, Horner's Greyhound, and Mellor's William Brockbank are splendid greys, but will not displace Geo. Lightbody. Horner's Heroine is unsurpassable."

ALPINE AURICULAS.

Only fifteen growers have sent in lists of twelve Alpines, many florists growing only the show kinds. The following return will show the views of the best southern growers, most of the varieties being of Mr. Turner's raising.

	Votes.		Votes.
Diadem	14	Sensation	6
King of the Belgians	12	John Ball	5
Mrs. Llewelyn	10	Geo. Lightbody	5
Mrs. Dodwell	10	Unique	5
Mrs. Ball	9	Mariner	5
Queen Victoria	8	Amelia Hardwidge	4
Philip Frost	7	Conspicua	4
John Leech	7	Col. Scott	4
S'ough Rival	7	Mrs. Phipps	3
Mrs. Meiklejohn	7		

The following had two votes each:—Elcho, Marchioness of Westminster, Beatrice, A. F. Barron, Duchess of Connaught, W. Fowle, Dazzle, Mercury, Goliath; and the following one vote each—Spangle, Distinction, Ada Hardwidge, Rosamund, S. Fellowes, Flora, Echo, Mrs. Thomson, President, Sailor Prince, Vesuvius, Silvia, John Jones, Fair Rosamond, Mauve Queen, Black Prince, F. Copeland, Phoenix, Susie Matthews, James Fowle. The following gentlemen kindly contributed to this list:—Rev. E. L. Fellowes; Messrs. J. T. D. Llewelyn, R. Gorton, W. Brockbank, J. Garner, C. Orchard, R. Dean, W. H. White, J. Douglas, T. Stirk, E. Wilson, H. N. Rolt, J. Ball (C. Turner), J. Cheetham, and J. Booth.

GUNNERSBURY HOUSE.

HAVING long been familiar with the productions of Mr. James Hudson at several of the leading exhibitions—admirably grown specimen plants, highly meritorious fruit, beautifully arranged groups of plants, with charmingly furnished dessert tables and floral decorations, for which Mrs. Hudson has won so many prizes, a note in the Journal last week on the Lord Napier Nectarine suggested that the garden itself in which so much good work is done might be worthy of a visit.

Gunnersbury House, Acton, is the residence of J. Atkinson, Esq., whose mansion is pleasantly situated in well wooded and charmingly diversified grounds ten acres in extent. They are separated by a lofty wall from the famous seat of the Rothschilds, Gunnersbury Park. A previous owner of Gunnersbury House displayed much ingenuity, and must have expended a considerable sum of money in rendering his side of the boundary wall ornamental. He had it faced with masonry to resemble an old ruin. Pillars, arches, embrasures, and mullioned windows were devised, and these now heavily mantled with Ivy have a romantic effect. In one part of the "ruins" are rooms for young gardeners, and over these, fruit rooms, store rooms, a Grape room, and other offices, so that the work, which is remarkable, is useful as well as picturesque. Parallel with the ruins, and a few yards from them, is a row of magnificent Elms, and a long embowered promenade is formed, which is delightfully cool in the summer.

From the natural terrace on which the mansion stands an extensive lawn recedes unmarred by a flower bed, and a miniature lake and several handsome trees and shrubs contribute to the attractiveness of the grounds. Such is the general character of the surroundings of Gunnersbury House, and a few of its special features may be briefly particularised.

THE FLOWER GARDEN.

This is small, but prettily arranged, and some beds of Begonias are full of promise, the plants being dwarf, stout, healthy, and just unfolding brilliant blooms. These have never been in pots. The tubers are started in boxes, then planted in rich free soil in cool frames preparatory to their removal with a wig-like mass of roots to the beds at the proper season. This is the right method, and with rich moist soil the plants grow luxuriantly. But Roses overshadowed everything else—not Hybrid Perpetuals, which were good, but a bower of old-fashioned climbing or rambling Roses. The trees are apparently half a century old, judging by their thick gnarled stems. It is known they were "trees" thirty-five years ago, and their great arms branch right and left, and the flowers are piled in dense masses overtopping the boundary wall like a bold undulating mass of fleecy clouds. The trusses appeared to be piled in heaps, and without doubt a cartload might have been cut from one tree of Alice Gray. Truly these floriferous old Roses are very delightful. In another portion we find a bed wholly occupied with Persian Yellow Roses, which are charming when expanding, Harrisoni larger and brighter, and the yellow and copper-coloured Austrians. The growths are pegged down and flower freely. We pass through a "strip" of kitchen garden, and

arrive at a rather extensive range of glass, two plant houses, a Peach and Nectarine house, and three vineries, but would first refer to a bed of

SELF-SOWN DAHLIAS.

As it is considered essential in raising Dahlias from seed for flowering the same year to sow in heat early, pot the seedlings and grow them under glass for a considerable time preparatory to planting out, a simpler method may be described, and so far as I know it is the first recorded example of exactly the same nature. Some single Dahlias grown in a bed last year ripened and shed their seed. Beyond taking up the roots and raking over the surface nothing was done to the ground in the winter. The scattered Dahlia seed germinated at the proper time, and now as fine a lot of plants are growing as could be wished, and that are certain to flower freely; in fact, buds are already perceptible in some of them. These naturally sown and undisturbed seedlings are sturdy and vigorous, very different to many that are drawn up under glass, and the trouble involved in the usual manner of raising them is often great, while by the natural method accidentally discovered it does not exceed that incurred in growing Radishes, and it is perfectly clear that single Dahlias can be raised without the aid of any glass shelter whatever.

LORD NAPIER NECTARINE.

The tree alluded to by Mr. Hudson on page 4 last week occupies the trellis in the house, which it practically fills; and there is not a gardener in Britain who would not be proud of such a tree. Mounting the step ladder at the back and taking a bird's eye view the sight was one to be remembered. Every fruit that could be raised was supported above the foliage on labels resting on the trellis and bridging the space between the wires. As usually seen this Nectarine is mottled, green being the prevailing colour, but on the tree in question the fruits are bronzy red or crimson, and it may be safely said that no better coloured examples of the variety have ever been seen; they are large too, some exceptionally so, and what is more, of excellent quality, full of vinous juice, melting and richly flavoured. Mr. Hudson is justified in regarding this as one of the most valuable Nectarines in cultivation, and he entertains a doubt if there is any other that would have developed into such a tree in the same time and produced a crop equal in all points—numbers, size, earliness, colour and quality; and if he were growing Nectarines for commercial purposes he would rely mainly on Lord Napier. At the same time he does not question the accuracy of the statements of persons who have found it less satisfactory in other and perhaps less dry and sunny districts, yet Mr. Bardney has it equally good in every respect, except perhaps in colour, and his exposed fruits are not very deficient in that respect. Mr. Atkinson's tree, it may be repeated, covers a space of 190 square feet, and this year's crop numbered 300 fruits. The tree was planted in 1878, and has been practically grown on the extension system.

GRAPES—FIRM VINE BORDERS.

Out of three houses, which at a rough guess may be 20 feet, 30 feet, and 40 feet long respectively, an uninterrupted supply of fruit is maintained all the year round as good as could be desired in size of berry, finish, and quality, "big" bunches not being coveted, indeed it is a little difficult to prevent their being too large. The early house from which the crop is being cut is occupied with Black Hamburgh, Foster's Seedling, and Madresfield Court, all of which are bearing medium-sized, full, regular bunches of very fine berries. In the Muscat house the crop is in every respect an excellent one, "lumpy" bunches with large berries of uniform size, and very fine are those of Alnwick Seedling and the bunches perfectly filled. The late house is regularly furnished with Lady Downe's and Alicante, but West's St. Peter's has failed to set well.

The wood of the Vines is not strong, but firm and short-jointed; nor are the leaves very large, but they possess great substance. The Vines are neither syringed in summer, nor peeled, daubed, or washed in winter, and not an insect troubles them. How is this? First, because the roots, actively working near the surface, are never dry; and, secondly, because the atmosphere of the houses after the Grapes are stored is heavily charged with ammonia. The borders outside are not dug and left for the sun to dry them and drive the roots downwards, but they are almost as firm as a garden path and covered with a layer of manure. That is the way to get a multiplicity of roots in the right place. The drainage of the borders is about as perfect as it can be, for the bottom is floored with rows of drain pipes placed side by side, from back to front, 2000 being used in the work. Pipe drains are also provided for ventilating one end, rising through the border, the other just under the hot-water pipes in the houses, where the air is warmed, hence rises, and a buoyant atmosphere maintained. When the borders were made care was taken that the soil was in the proper condition for compression, and it was made firm, as if in potting Vines, Strawberries, or Chrysanthemums. The object was to have Vines lastingly good, not for producing sensational growth and bunches at first, then a falling off, but good Grapes for years. It is to these firm borders that may be traced the character of the wood, not luxuriant but fruitful, the sub-laterals showing bunches freely.

SUB-LATERAL EXTENSION.

The management of the growths is not exactly orthodox. "Do not let the laterals run," say some authorities, "as undue root-action will be incited, and the berries of Madresfield Court will split or crack." Mr. Hudson knows very well what causes the splitting of this grand Grape, which few growers finish in better condition than he does. With well-drained borders he has no fear of any amount of rain, and it is very clear he has no fear of active root-movement; he encourages it by not stopping

the sub-laterals of any of his Vines after the stoning period, while he does not top the leading growths at all, but lets them run down the back wall and ramble where they like. The fruit-bearing laterals are thinly disposed, and care is taken that the leaves between the main rods and bunches are exposed to full light; this insured, the secondary growths can go anywhere, and invite all the root-action they can for supplying sap to the berries for making them as large as possible. He is strongly opposed to checking the sap in any way, but likes it to flow freely and feed the fruit.

FEEDING THE LEAVES—PREVENTING GRAPES CRACKING.

Towards evening, when the owners of the Vines and their visitors do not usually pass through the houses afterwards, liquid manure is applied strong and freely to the floor, and all convenient surfaces, and the atmosphere is heavily charged with ammonia, but only, as has often been advised in the Journal, after the Grapes are stoned. The air is pungent and not altogether sweet, but the Vines enjoy it, and insects keep outside. Strong drainings from manure are preferred for this evening feast for the Vines, but guano is employed in its absence.

This evening damping and ammonia-charging is not practised where the Madresfield Court is ripening; on the contrary, that house was dry, and at seven o'clock in the evening the front ventilators were open to the extent of 3 or 4 inches. When the outside air is dry they are left open, when it is damp they are closed. In two or three years the berries split—a grievous disappointment. Damp air was at last found to be the insidious enemy, and the cause removed the evil ceased. There is no cracking of this Grape now, but the berries are as clear as the Hamburgs, as most persons know who have had to compete with them at shows. There has been a good deal of discussion on this matter lately, and it seems only right that Mr. Hudson's experience—not his words, but his work—should be thrown in with the rest, and it is commended to the notice of all who are interested in the subject.

WATER FOR VINES—AN OBJECT LESSON.

"Vines like water" has become an axiom with those who best understand them; hence they say, "Given good drainage they cannot easily have too much of it." There is a very good example of Vines liking water in the early house in the range under notice. A square tank is formed under the floor covered with a lid. A root from one of the two Black Hamburgs in the house found its way just over the top of the tank, or through a fissure near the top, and dipped down into the water. It has been said that a resisting medium is necessary for the multiplication of roots, and hence in firm soil far more fibres are produced than in a light medium. It is not easy, however, to conceive a more extraordinary increase of the roots of a Vine than has taken place in this tank. The one root has multiplied into thousands—a thick bundle or besom-like mass of fibres, without any greater "resisting" medium than the water, for it is clearly not necessary for them to come into contact with the sides of the tank or each other for the increase of fibres. After extending a few inches, what may be termed laterals start from them in beautiful regularity, and these in turn produce others, and this increase has been so remarkable that a good "lift" is needed to raise the mass out of the water. They are as brittle as glass, and as smooth as the roots of Hyacinths in water, but much smaller. No root hairs are visible with the aid of a magnifier, and Mr. Hudson has not been able to ascertain that any parts die corresponding with the fall of the leaf as is the case in the soil where the root hairs decay; but in the water, instead of an alternate decay and increase, there appears to be nothing but progression. They remain as fresh and, seemingly, as active in winter as in summer, but less quick in their extension during the resting period of the Vines. It must be understood that the water in the tank is not stagnant, but is constantly being used, and it is clear therefore that water is not injurious to Vines or Vine roots in winter when it is sweet—i.e., aerated.

The two Black Hamburg Vines in the house used to ripen their crops together, but the one with the roots in the water has gradually crept ahead of its rival, until now it starts distinctly sooner and the fruit is ripe quite ten days earlier. It was nearly all cut last week, but not a bunch had been taken from the other Vine. There is not a doubt that such a mass of roots with thousands of spongioles constantly imbibing moisture must have an effect in some way, but not many persons would have anticipated that this would be shown in the earlier ripening of the crop. The case is interesting, and gardeners who may call on Mr. Hudson should ask to see the Vine roots in the tank.

VEGETABLE CULTURE.

The same thought is given in this as in other departments, and the same good culture manifest. It can only be said, however, that Veitch's Extra Early Pea was the first gathered, leading William the First, and that if the ground in the distant kitchen garden were not trenched the supply of vegetables could not be maintained, as the crops would fail under dry weather. This is one of the many gardens in which deeply working the land is economical in saving after labour in watering; indeed, no expenditure in this work would produce anything like equally full crops in shallow soil. It is an instance of the old saying that the "spade beats the water pot entirely." In heavy soils on clay it is quite another matter. Mushrooms are plentiful and good. Beds are now just coming in, in what was once the Princess Amelia's wine cellar, which is close to the boundary wall of the Rothschilds, and belonged to the old mansion before the property was divided.

Mr. Hudson's charge is not an extensive one, but in every way agreeable. He ranks amongst the best of British gardeners. He secured the maximum number of marks in every section at the Chiswick examina-

tions, and seems to have won as many silver cups and medals as he cares for, and has hence practically relinquished exhibiting plants, nearly all the large specimens having been "done away with," a greater number of smaller being now grown for home-decoration; there is, however, a splendid example of *Asparagus plumosus nanus*, bluntly oval-shaped, perfectly furnished, and about 5 feet high. I intended calling at the "big place over the wall," but the absence of Mr. Roberts being ascertained the pleasure of a visit was deferred.—A CALLER.

ARNICA MONTANA.

THE genus *Arnica* is not an important one, nor does it contain many species of garden value; that, however, shown in fig. 4 is worthy of more



Fig. 4.—*Arnica montana*.

attention, as it is now comparatively neglected or confined to botanic gardens. On a rockery it has a pretty appearance, its bright orange yellow flowers being freely produced, and at Kew it has been attractive for some weeks past. Of the ordinary shades of yellow we have abundant floral representatives, but a pure orange is not so frequently seen, and contrasts with many other colours very effectively.

THE ADVENTURES OF COMTESSE DE NADAILLAC.

I THINK rosarians may be interested to hear a veracious account of the produce of a very small plant of Comtesse de Nadaillac Tea Rose, growing in the garden of a certain Rose-loving country parson.

Oddly enough, by-the-by, one of this same parson's boys, when about five years old, when asked as to his choice of a profession, made exactly the same answer as that recorded by Mr. Alexander in

the last number of the Journal. This plant of Nadaillac, which had never distinguished itself before, and was treated exactly the same as its companions, was on an old Briar about a foot high, and had one bit of wood only, old and withered-looking, about the size of a pencil. From this came, this year, two very short shoots only, and each had only one bud. When the first Countess showed petals, instead of coming fully out in the hot sun, as might be expected, and as so many on much longer and stronger shoots do, she took to swelling and growing, and by June 19th was fully out, and had petals nearly as long as the parson's finger. The first available Show was on the 23rd, and as it appeared hopeless she was cut and placed in a vase in the house. On the third morning she seemed dead, having either lost water or been placed too near a lamp, but completely revived again on being newly cut and receiving fresh water. She went to the Show after all with no attendant, and was "gone" before the day was out, but the best amateur Tea grower of last year failed to beat the stand in which she stood.

On June 26th the other Countess "came out," and she also had to stand four days before being shown, but was taken care of where she was. On June 30th she figured, against strong competition, in a winning box of twelve Teas, and was personally awarded the prize as the best Tea in the Show. On the next day she started again for another large show. Her stand of twelve Teas was again victorious, and this time she was awarded by the Judge, Mr. B. R. Cant, the silver medal as the best Rose (not Tea Rose only) exhibited by amateurs in the Show.

A trifle *passée*, she was refreshed sufficiently by a night's rest after two days in very hot tents to visit her third show, and make a very creditable appearance in another first-prize stand of twelve Teas. She exhibits some traces of dissipation after such a prolonged "season," but not a petal has fallen, and her "point" is still well preserved, as she passes her glorious old age in a place of honour in the parson's home.

I think it must be rare for the same bloom to be shown successfully three times, and twice to win premier honours against really strong competition. A bloom of Marie Van Houtte accompanied the Countess throughout, and was a conspicuous rival to her ladyship on the first day.—A. F. M.



MR. LAXTON has sent us examples of his new STRAWBERRIES King of the Earlies and The Captain. They arrived last week, but we were not able to acknowledge them sooner. Both these Strawberries have been fully described. King of the Earlies is medium sized, and rich in flavour; The Captain much larger, but not quite equal to the other in quality.

— DURING September of this year an extensive HORTICULTURAL EXHIBITION WILL BE HELD AT BERLIN from the 5th to the 15th of the month, and a large number of medals will be offered. The management of the Show is entrusted to Mr. Späth, 154, Kopnickerstr. Berlin.

— MR. ROBERT OWEN sends us a bloom of CHRYSANTHEMUM MDLLE. MELANIE FABRE, a beautiful incurved variety. The bloom was taken from a plant growing in a 48-pot. The plant had four blooms. The one sent is a lateral bloom, the centre or crown bloom being much larger. The plant never had any stimulants applied to it, or the flowers might have been much larger, the pot being full of roots. Judging from its appearance he thinks it will be a great acquisition, as the colour is quite new and distinct. The bloom we have received is certainly attractive, its colour very closely resembling that of La France Rose.

— FRUIT AT THE BATH SHOW.—Strawberries are generally very fine at the Bath Rose Show, but this season there was a marked exception to the rule, as they were shown fewer in number and much smaller than usual. Mr. H. S. Dutton had the best six dishes, distinct, these consisting of Marguerite, Newton Seedling, Sir J. Paxton, Duke of Edinburgh, Sir C. Napier, and President. Mr. G. Garraway was second. Mr. W. Tylee third. Mr. H. Scott had the best three dishes, and Mr. Tylee was second. With a single dish Mr. G. Garraway was first with Sir J. Paxton, Mr. Warden following with the same variety, and Mr. T. Evry third. A certificate of merit was awarded to Mr. W. Pratt, Longleat, Wilts, for a

seedling Melon named Longleat Perfection, this being a cross between Eastnor Castle and Hybrid Cashmere, and apparently possesses the good qualities of both.

— MR. J. H. CLARKE desires us to state that Mr. Featherstone of St. Ann's Nurseries, Leeds, contributed a group and a large collection of plants, not for competition, to the late Leeds Flower Show, which attracted much attention, besides having personally superintended the arrangement of the Show.

— THE taste for the original wild single Roses has developed remarkably since the introduction of the *Rosa rugosa*. The *Journal des Roses* says that one of the best is *ROSA RUBRIFOLIA*—red-leaved Rose. It is a native of Dauphiny, chiefly in the Vosges and the humid mountains of Auvergne.

— THE splendidly grown plants of CARNATION SOUVENIR DE MALMAISON at Kensington on Tuesday excited the admiration of all who saw them; and the exhibitor, Mr. Jennings, gardener to Leopold de Rothschild, Esq., Ascott, Leighton Buzzard, deserves the highest commendation for such excellent productions. It is doubtful if so large a number as 187 plants in 8 and 10-inch pots could be shown from any other private garden in the kingdom, and never have more vigorous and profusely flowered specimens been publicly exhibited. The plants had each from six to twelve blooms of great size and substance, while buds innumerable were expanding. The growth was very strong, and a slight stake to each plant was sufficient to support the heads of the flowers. It is to be hoped that the Royal Horticultural Society will accord Mr. Jennings a substantial recognition of this handsome exhibit.

— MEEHAN'S "Gardener's Monthly" has the following on How to PRODUCE VARIATION:—"Just what induces a plant to become variegated is still a mystery. Mr. Rupp, the famous improver of the Chinese Primrose, tried in vain everything he could think of to produce variegation in the leaves. At length, noting a variegated plant of the common Clover in the fields, the thought struck him that possibly there might be some condition of the soil which induced it. He took the soil about this Clover plant, put some in a pot with a seedling Primrose, and got his long-desired variegation. 'One swallow does not make a summer.' Perhaps so, but it is worth looking out for more when we see one."

ROYAL BOTANIC SOCIETY'S EVENING FETE.

JULY 1ST.

ONE of the most beautiful events of the London season is the annual Fête in the Royal Botanic Society's picturesque Gardens, Regent's Park, and when the weather is favourable as it was on the 1st inst. very large numbers of visitors are invariably attracted. Seldom, however, does such a brilliant company assemble as on the occasion under notice, for the Gardens were thronged until nearly midnight, and continuous lines of carriages occupied all the roads for a considerable distance around the Gardens. Coloured lamps were freely employed, either lining out the flower beds or suspended from the branches of the trees, giving a fairy-like aspect to a most charming scene. A slight chilliness in the air rendered promenading more agreeable than sitting, and with this exception there was nothing to lessen the delights of a most successful gathering.

The exhibition of floral decorations occupied the large marquee which is devoted to the summer shows, and the Bagshot Rhododendrons filled another tent of great size, which was brilliantly lighted and very effective. The tables of flowers proved extremely interesting to the majority of visitors, and it was generally remarked that a most commendable improvement was observable in the taste exercised in the arrangement, and in the leading exhibits few could take exception to either the arrangement or the flowers employed. For a table decorated with flowers Mr. E. A. Chard, Clapham Common, won first honours for a very tastefully arranged table, on which were placed three trumpet stands containing a light and graceful association of double scarlet Potentillas, Chrysanthemum Etoile d'Or, Rhodanthes, and Grasses, the basal portion of the stands being chiefly filled with Eucharises, while around the table were placed small Cocos Weddelliana surrounded by Odontoglossums, double Primulas, and Carnations. The stands were wreathed with long trailing sprays of Lygodium scandens. Miss Hassall, Southfleet, Gravesend, and Miss H. Murray, The Red House, Wandsworth, secured the second and third prizes, in which perhaps rather too many flowers had been employed, and otherwise they were quite satisfactory. In the class for a table of hardy flowers some pretty arrangements were noticeable, but they were slightly heavy, and it is often seen that as regards public exhibitions stands of such flowers are rarely so graceful as the choicer flowers otherwise employed, and this is certainly not from any lack of suitable material, but apparently from a want of appreciation of their qualities. Miss F. Paget, Orchardleigh, Caterham, won chief honours with a pretty combination of Roses, Irises, Gladioli, Grasses, Sedges, and Ferns in three centre stands and four smaller corner glasses. Miss M. R. Hardy, Portland Place, was placed second, the chief features of her table being Oxeye Daisies, Grasses, Asparagus, and Ferns. Mr. J. R. Chard was third with a pleasing arrangement of Potentillas, Chrysanthemum frutescens, Sweet Sultan, and yellow Violas in three large central stands with saucers at the base and four others of smaller size. The tables of evergreens were all somewhat heavy, the first one from Miss Paget being particularly so, and, moreover, too elaborate

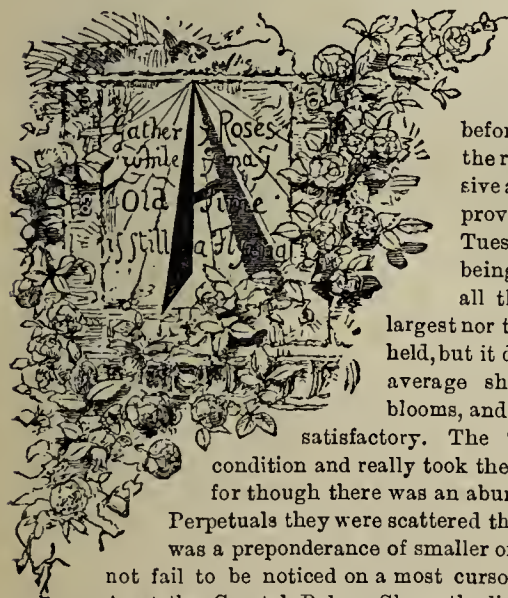
in design, consisting of a central arch upon which were placed the Grasses, chiefly Brizas, variegated Ivies and Hollies employed on the stands. Mrs. Edith Sperling and Mr. W. L. Buster, St. Mary Cray, were second and third, principally *Enonymuses*, *Berberises*, and variegated *Taxus* in the second, and miscellaneous variegated foliage in the third. The groups for a recess were not distinguished by any remarkable merit and do not require comment.

In the classes for wreaths, bouquets, and single stands the Judges evidently gave their favour to the most simple arrangements, which are becoming much more popular than the elaborate designs too often attempted by floral decorators. With flowers for personal adornment Mr. F. Perkins, Leamington, was placed first with wreaths chiefly of white and purple Pansies. The second prize was secured by Mrs. E. Clingo, 2, Swan Terrace, Belsize Park, for similar wreaths of purple Pansies and *Heliotropes*. With three stands for a dinner-table Mr. W. L. Buster won first honours with a simple arrangement of *Alstromerias* in the centre, with English Irises and foliage at the ends. Mr. Chard took the second place with three large stands and six smaller ones of *Chrysanthemum frutescens* and Grasses with pink Carnations. The competition was keen with bouquets, but there was a great diversity in the styles adopted, and in the merits of the respective exhibits. Messrs. Hooper & Co., Covent Garden, had the best bride's bouquet, composed of *Phalæopsis*, white Roses, *Pancratiums*, and *Stephanotis*, with Fern fronds not too much crowded. Messrs. Henry & Co., 8, Victoria Buildings, staged the second-prize bouquet, which chiefly consisted of *Lilium longiflorum*, *Eucharises*, *Tuberoses*, and *Odontoglossum Alexandræ*, but the two first named were rather too large, and somewhat marred the otherwise good effect. Mr. W. Wood, 66, Conduit Street, was placed third with a combination of Roses, *Gardenias*, Orange blossom, and *Tuberoses*, but it was a trifle too heavy. Over a dozen competitors staged ball bouquets, and some had spent considerable time in producing painfully formal and enormous masses of flowers that few beyond the exhibitors could admire. A bold but simple yet magnificent bouquet of dark crimson Roses gained Mr. W. Wood the first prize, and attracted the admiration of the majority, though some objected to it on the score of heaviness. Mr. Prewett, Hammersmith, followed with a tasteful combination of light and dark *Heliotropes*, which under artificial light would have a rather dull appearance, but this quietness was pleasing, and its fragrance delicious. Messrs. Nieman & Cornish, Orchard Street, were third with a bouquet of Pansies and yellow Roses, which we did not admire. A class was also provided for an untied bouquet in water, and Mr. A. F. Youens, Leigham Court, Streatham, won chief honours with a most graceful and simple arrangement of *Pæonies*, *Lagurns ovatus*, other Grasses and Ferns. The great charm of this stand was the apparently careless, yet eminently artistic manner, in which the materials were associated, and Mr. Youens evidently possesses an accurate taste in such matters. Messrs. Nieman and Cornish followed with Pink Carnations, Asparagus, and Brizas lightly arranged.

Not the least important portion of the Exhibition was that comprising the groups not in competition, and especial praise must be given to Messrs. T. Rivers & Son's two extensive groups of fruit trees, comprising about sixty specimens of Cherries, Peaches, Nectarines, Plums, Pears, and Apples, and representing some of the choicest varieties from the Sawbridgeworth collections. Most of the trees were heavily fruited, and the silver medal awarded for the group was a suitable recognition of its merit. Messrs. Barr & Son, Covent Garden, also obtained a similar award for large collection of hardy flowers that formed beautiful groups in the marquee. J. T. Peacock, Esq., Sudbury House, Hammersmith, contributed a remarkably handsome group of Orchids, in which the superb *Odontoglossum vexillarium* predominated. This species is one of the features in the Sudbury House collection, and the condition of the plants shown prove how well they are grown. Many other *Odontoglossums* were included, and some richly coloured *Cattleyas* imparted much warmth to the groups. Miscellaneous ornamental articles were also shown in the corridor by several firms.

ROSE SHOWS.

NATIONAL ROSE SOCIETY.—JULY 7TH.



ALTHOUGH the weather had been disastrously dry for a considerable time before this important event in the rosarian season, yet an extensive and beautiful Exhibition was provided at Kensington on Tuesday last, the competition being extremely close in nearly all the classes. It was not the

largest nor the best that the Society has held, but it deserves a position as a good average show as regards quality of blooms, and in numbers it was highly

satisfactory. The Tea Roses were in grand condition and really took the foremost position in merit, for though there was an abundance of handsome Hybrid Perpetuals they were scattered through the stands, and there

was a preponderance of smaller or rougher blooms that could

not fail to be noticed on a most cursory glance round the tables. As at the Crystal Palace Show, the light and dark varieties were better proportioned than is usually the case, and this imparted much beauty to the display viewed generally, while in brightness or clearness of tint the blooms were admirable.

About 7000 blooms were staged in competition, and to these four rows of tables extending the whole length of the conservatory were appropriated. The centre table had two rows of stands, and for a portion of its length three rows, while on the other side tables were arranged single lines of boxes. The large central table had a grand appearance, which was due nearly as much to the line of Carnations separating the stands as to the Roses themselves. These Carnations, all of the variety *Souvenir de Malmaison*, were exhibited by Leopold de Rothschild, Esq., Ascott, Leighton Buzzard (gardener, Mr. Jenniugs), and never has so large a number of superbly grown plants been shown from one garden. The plants, of which 187 were exhibited, were in 8 to 10-inch pots, and bore from six to twelve expanded flowers of great size and substance, with numerous buds, the foliage and growth being extraordinarily vigorous. They constituted a grand feature in the Show and will long be remembered as a triumph of skilful culture.

Another triumph will render this Exhibition memorable, and that was the award of a gold medal to Mr. W. Bennett for his Rose Mrs. John Laing, which is the second honour of a similar character that has been obtained by this successful raiser. Her Majesty was the variety previously recognised, and those who saw the two together at Kensington on Tuesday did not hesitate to give the preference to the new comer. It was shown some time ago, but has not fully developed its characters until the present season, and now it has come in magnificent form; for probably over 100 blooms have been staged at three Exhibitions during the past week—namely, at Shepperton on Thursday, the Crystal Palace on Saturday, at both of which it was certificated, and at Kensington on Tuesday. It may be described as resembling *François Michelin* in build, with somewhat of the curl of petal in *Lady Mary Fitzwilliam*, but it is more globular than that Rose; and is, moreover, a Hybrid Perpetual, with the powerful fragrance of the old Cabbage Rose. The colour is a clear rosy pink, a delicate and pretty, but not strongly marked shade. If it maintain the characters it has displayed recently it will take a foremost place amongst exhibition Roses, as it possesses both substance and symmetry.

NURSERYMEN'S CLASSES.

In the larger classes devoted to nurserymen the blooms shown were not so fine as we have seen them at many previous Shows of the National Rose Society, and some extremely weak blooms were observable even in the winning stands. This was especially noticeable in the class for seventy-two single trusses, in which the Challenge Trophy, value sixty guineas, and £5 were offered as the first prize, for not one of the four collections staged were equal to some that have won the honours in preceding years. Yet considerable difficulty was experienced by the Judges in awarding the prizes, particularly as regards the first and second, and after they had accomplished their task much difference of opinion prevailed as to whether those selected for the first were really superior to the second. Mr. B. R. Cant, Colchester, was the fortunate winner of the Trophy, and no doubt he chiefly owed his success to the fine Tea blooms his stand contained, as many of the Hybrid Perpetuals were much weaker than those he had at the Crystal Palace on Saturday, and altogether we did not consider his collection up to his standard of preceding seasons. They were, however, bright, fresh, and clean, the light and dark varieties being well proportioned to produce a good effect. The varieties represented were as follows—*Gloire de Vitry*, Harrison Weir, *François Michelin*, *Souvenir de Mons. Boll*, *Innocente Pirola*, *Benoist Comte*, *Victor Verdier*, *Marie Baumann*, *Boieldieu*, *Madame Prosper Laugier*, *La Boule d'Or*, A. K. Williams, *Countess of Pembroke*, *Madame Crapelet*, *Mlle. Marie Cointet*, *Lady Mary Fitzwilliam*, *Ferdinand Chaffolte*, *Madame de Watteville*, very handsome; *Alfred Colomb*, *Niphetos*, *Reynolds Hole*, *Madame Charles Wood*, *Souvenir d'Elise Vardon*, *Etienne Levet*, *Jules Margottin*, *Comtesse de Serenye*, *Comtesse de Nadailac*, *Hippolyte Jamin*, *Horace Vernet*, *Emily Laxton*, *Merveille de Lyon*, *William Warden*, *Jules Chrétien*, *Star of Waltham*, excellent; *Rubens*, *Duke of Wellington*, large and handsome; *Duchesse de Vallombrosa*, *Marchioness of Exeter*, *Queen of Queens*, *Madame Gabriel Luizet*, *Louis Van Houtte*, admirable; *Madame Eugène Verdier*, *Le Havre*, *Souvenir d'un Ami*, *Madame Annie Wood*, *Marie Baumann*, *Maréchal Niel*, *Duchess of Bedford*, *Baroness Rothschild*, *Général Jacqueminot*, *Madame Caroline Kuster*, *Marquise de Castellane*, *Ferdinand de Lesseps*, *Mons. Noman*, *Ulrich Brunner*, *Etoile de Lyon*, *Ville de Lyon*, *Marie Rady*, *Catherine Mermet*, *Fisher Holmes*, *Madame Montet*, *Xavier Olibo*, *Madame Welche*, *La France*, *Beauty of Waltham*, *Annie Laxton*, *Mrs. Baker*, *Madame Marie Verdier*, *Dr. Andry*, *Madame Ducher*, *Madame H. Jamin*, and *Madame Victor Verdier*. The second prize was adjudged to Messrs. Paul & Son, Cheshunt, for a collection which, like the first, contained many weak blooms, but it also included some of considerable merit, and the contest between the Colchester and Cheshunt champions was so close that Messrs. Paul had no reason to be ashamed of their defeat. The finest flowers were the following—*François Levet*, *Marquise de Castellane*, *Ulrich Brunner*, *Sultan of Zanzibar*, *Mrs. G. Paul*, *Comtesse de Serenye*, *Emily Laxton*, *Souvenir de Madame Alfred Vy*, *Prince Arthur*, *Madame Gabriel Luizet*, *Etoile de Lyon*, and *Edouard Andry*. The Cranston Nursery Company, Hereford, was third, and Mr. C. Turner, Slough, fourth, both having rather small blooms.

With forty-eight triplets Messrs. Paul & Son were the most successful of the six exhibitors, and in this class the general quality of the blooms was more satisfactory. The Cheshunt stand comprised good examples of the following varieties—*Marie Rady*, *Madame Gabriel Luizet*, *Madame Prosper Laugier*, *La France*, *Star of Waltham*, *Queen of Queens*, *Mrs. G. Paul*, *Madame Lacharme*, *Marie Baumann*, *Baroness Rothschild*, A. K. Williams, *Merveille de Lyon*, *Etienne Levet*, *Abel Grand*, *Dr. Andry*, *François Levet*, *Beauty of Waltham*, *Boieldieu*, *Duke of Teck*, *Caroline Kuster*, *Alfred Colomb*, *Marquise de Castellane*, *Horace Vernet*, *Pride of Waltham*, *Niphetos*, *Marguerite de St. Amand*, *Heinrich Schultheis*, *Ulrich Brunner*, *Comtesse de Serenye*, *Madame Eugène Verdier*, *Comtesse de Paris*, *François Michelin*, *Alba Rosea*, *Maréchal Vaillant*, *Devoniensis*, *Souvenir d'Elise Vardon*, *Louis Van Houtte*, *Jean Ducher*, *Countess of Rosebery*, *Devienne Lamy*, *Centifolia Rosea*, and *Duchesse de Vallombrosa*. Second honours were secured by Mr. C. Turner, whose blooms of *Etienne Levet*, *Duchesse de Vallombrosa*, *François Michelin*, *Xavier Olibo*, *Capitaine Christy*, *Baroness Rothschild*, *Beauty of Waltham*, *Lady Mary Fitzwilliam*, and *Duc de Montpensier* were worthy of mention. Messrs. Keynes, Williams,

and Co., Salisbury, and Mr. B. R. Cant followed in that order, each showing fairly good but not remarkable blooms.

The four collections of eighteen Teas, single trusses, formed an interesting and beautiful class, Mr. G. Prince of Oxford again maintaining his pre-eminence with these favourite Roses by charming blooms of the best varieties, distinguished throughout by their substance and excellent form. The varieties shown in the premier stand from Oxford were Niphetos, *Maréchal Niel*, *Innocente Pirola*, Hon. Edith Gifford, Catherine Mermet, very handsome; *Francisca Kruger*, *Souvenir d'un Ami*, Anna Ollivier, *Souvenir d'Elise Vardon*, Madame Caroline Kuster, *Souvenir de Paul Neyron*, Madame H. Jamain, Rubens, a grand bloom; Mlle. Marie Arnand, Princess of Wales, Jean Pernet, *Bellefleur d'Anjou*, and a magnificent bloom of Comtesse de Nadaillac, of grand substance, for which a silver medal was awarded as the best Tea Rose in the nurserymen's classes. Mr. B. R. Cant, who was second, also had some substantial beautiful blooms, very prominent amongst which was Madame de Watteville, white or creamy tinted with rose round the margin of the petals, a lovely variety somewhat like a large but less highly coloured Madame Cusin. The latter variety was also splendidly shown together with Catherine Mermet and Madame Bravy, the others being slightly deficient in size. Mr. C. Turner followed, having *Souvenir d'un Ami*, *Triomphe de Milan*, and *Innocente Pirola*, very fine. Messrs. Paul and Son took the fourth place with smaller blooms.

Competition was keen in the four classes of division B, and eleven exhibitors entered with forty-eight single trusses, Messrs. Curtis, Sanford and Co., Torquay, winning first honours with a fresh, even, and bright collection of the best varieties. Mr. F. Cant, Colchester, had rather rougher blooms, but of good colour, and he well deserved the second prize awarded to him. Messrs. J. Burrell & Co., Cambridge, and Mr. John House, Peterborough, were third and fourth, each with less regular collections, and Mr. House's blooms were not nearly so good as some of those he had at the Crystal Palace. With twenty-four triplets Messrs. Curtis, Sanford & Co. were again the most successful of the nine exhibitors, being followed by Mr. J. House; Messrs. G. Cooling & Son, Bath; and Messrs. J. Jefferies and Son, Cirencester. A beautiful collection of twenty-four single trusses gained Messrs. Kinmont & Kidd, Canterbury, the premier honours, their blooms being greatly superior to those shown by the five other exhibitors. They were distinguished by their fine substance, and in this respect they were amongst the best of those staged by nurserymen. Especially noteworthy were A. K. Williams, Reynolds Hole, Charles Lefebvre, Dupuy Jamain, Beauty of Waltham, Horace Vernet, Marie Baumann, Madame Gabriel Luizet, and Xavier Olibo. The remaining prizes were secured by Mr. J. Mattock, Oxford, Mr. J. Walker, and Mr. G. Mount, St. Dunstan's, Canterbury, whose stand contained three uncommonly handsome blooms—namely, Duke of Wellington, Lady Mary Fitzgerald, and Marie Baumann, the latter most symmetrical and wonderfully bright in colour, its merits being recognised by the Judges in the award of a silver medal as the best Hybrid Perpetual in the nurserymen's classes.

Nine excellent collections of a dozen Teas and Noisettes were staged, and Mr. G. W. Piper, Uckfield, won the leading honours for very handsome blooms of *Souvenir d'un Ami*, *Souvenir d'Elise Vardon*, Catherine Mermet, *Devoniensis*, *Niphetos*, *Maréchal Niel*, *Innocente Pirola*, Duc de Magenta, Madame Caroline Kuster, Adam, *Souvenir de Paul Neyron*, and Jules Mansais. Messrs. G. Bunyard & Co., Maidstone, were second, their finest blooms being *Maréchal Niel*, Catherine Mermet, *Souvenir d'Elise Vardon*, and *Homère*. Mr. J. House and Messrs. J. Burrell & Co. were third and fourth respectively.

AMATEURS' CLASSES.

There was a good display in these classes, and the competition was close; but we cannot accord unqualified praise to the blooms staged, for amateurs have often shown much more strongly than on this occasion. As in the other classes, the dry weather had evidently produced an injurious effect, and when cutting their blooms the majority of exhibitors had selected young flowers that were frequently under the average size; and if they had been tempted by older and larger blooms they proved very disappointing when staged. Of course there were exceptions, and one of the most remarkable of these was the superb Ulrich Brunner in the Rev. J. H. Pemberton's stand, which was awarded the silver medal as the best Hybrid Perpetual in the amateurs' classes. This was of wonderful substance and size, over 5 inches in diameter, the petals massive, and the colour very bright.

Eleven competitors staged in the class for forty-eight distinct single trusses, for which the challenge trophy, value 60 guineas, and £5, were awarded to the Rev. J. H. Pemberton, Havering, Romford, for the following collection, reading the names as staged from left to right, beginning with the back row:—*Marquis de Gibot*, Mlle. Eugénie Verdier, Madame Charles Wood, Magna Charta, Alfred Colomb, Baroness Rothschild, Countess of Rosebery, Ulrich Brunner, Madame Eugénie Verdier, Dr. Andry, La France, finely built flower; Edouard Morren, Merveille de Lyon, Marie Baumann, Pride of Waltham, Etienne Levet, Madame Lambard, Exposition de Brie, Anna Ollivier, *Souvenir d'Elise Vardon*, Countess of Oxford, Madame Jacquin, Madame Gabriel Luizet, Marie Rady, Madame Hippolyte Jamain, A. K. Williams, Miss Hassard, Star of Waltham, Madame Margottin, Madame Montet, Madame Prosper Laugier, Jules Finger, Devienne Lamy, Mons. Noman, Abel Carrière, William Warden, Marquise de Castellane, Louis Van Houtte, Henri Ledechaux, Horace Vernet, *Devoniensis*, François Michelin, Reine Marie Henriette, Pierre Notting, Marie Cointet, Madame Victor Verdier, and a wrongly named variety. W. J. Grant, Esq., Hope End Farm, Ledbury, was a very good second, having fine blooms of Constantin Treiakoff, Marie Verdier, Duke of Teck, Rosieriste Jacobs, Marie Baumann, *Souvenir d'Elise Vardon*, and Alba Rosea. T. W. Girdlestone, Esq., Sunningdale, Berks, was awarded the third position for a bright collection, amongst which several Teas were very prominent. The fourth place fell to the Rev. R. C. Hales, Woodmancote Rectory, Henfield, Sussex; this was a beautiful class in which 528 blooms were staged. In the class for twenty-four distinct varieties there were only two collections staged, the Rev. F. Page Roberts, The Rectory, Scole, Norfolk, and J. Gurney Fowles, Esq., Woodford, Essex, were first and second respectively.

Eleven entries were staged of twelve distinct varieties, three trusses of each. The Rev. J. H. Pemberton was well to the front with a noble collec-

tion, the blooms both bright and massive. Etienne Levet, La France, Madame Victor Verdier, Madame Gabriel Luizet, Ulrich Brunner, Pride of Waltham, Mons. Noman, Louis Van Houtte, Merveille de Lyon, A. K. Williams, Duchess de Vallombrosa, Exposition de Brie. T. W. Girdlestone, Esq., took second honours. *Souvenir d'Elise Vardon*, Marie Baumann, and Merveille de Lyon grand examples. R. N. G. Baker, Esq., Heavitree, Devon, and Mr. S. P. Budd, 8, Jay Street, Bath, were awarded third and fourth prizes in the order of their names. In this, like the forty-eight class, the prizes were very keenly contested, all the exhibits being of good quality and colour.

The Rev. F. Page Roberts worthily deserved the premier award for eighteen Teas, so remarkably even were they that to attract the admiration of everyone. His varieties were *Innocente Pirola*, Anna Ollivier, Madame Welche, Caroline Kuster, Madame Bravy, La Boule d'Or, Madame Hippolyte Jamain, Jean Ducher, *Souvenir d'Elise Vardon*, Comtesse de Nadaillac, Madame Margottin, Niphetos, Marie Guillot, Catherine Mermet, Marie Van Houtte, *Souvenir de Paul Neyron*, and Etoile de Lyon. T. W. Girdlestone, Esq., was awarded second honours. Alfred Slaughter, Esq., Jarvis Villa, Steyning, third, and T. B. Hall, Esq., Larch Wood, Rock Ferry, fourth.

The chief class in division D was that for twenty-four single trusses, in which there were eight entries. H. J. Waterlow, Esq., Great Doods, Reigate (gardener, Mr. J. Brown), being awarded first honours for a pretty collection of well-selected varieties, comprising the following:—La France, Duc de Rohan, Henri Ledechaux, Merveille de Lyon, La France, Mrs. Baker, Ferdinand de Lesseps, Heinrich Schultheis, Baroness de Rothschild, Anna Ollivier, Lady Mary Fitzwilliam, Etienne Levet, Duchess of Connaught, François Michelin, very fine; Madame Gabriel Luizet, Eugène Fürst, Star of Waltham, A. K. Williams, Duke of Connaught, Capitaine Christy, Pride of Reigate, very fine; Edouard Morren, Marie Rady, Mons. E. Y. Teas, extremely good; and Jules Finger, similarly beautiful. Miss Watson Taylor, Manor House, Headington, and R. E. West, Esq., Reigate, were second and third respectively. Six stands of eight triplets were staged; Mr. Brown; Mr. W. L. Jackson, Stagden Vicarage Mr. W. H. Wakeley, Rainham; and the Rev. E. L. Fellowes, Wimpole Rectory, Royston, being the prizetakers, the first-named having a particularly handsome collection, in which Marie Rady and Etienne Levet at once attracted attention.

With eighteen single trusses Miss Baker, Holmfels, Reigate, won leading honours for a pleasing stand of the varieties Etienne Levet, Charles Lefebvre, Madame Gabriel Luizet, Hippolyte Jamain, La France, Victor Verdier, Marquise de Castellane, François Michelin, Jules Finger, Violette Bouyer, and Dr. Hogg. E. M. Bethune, Esq., Denne Park, Horsham, was second with even blooms. Miss Christy, Coombe Bank, Kingston (gardener, Mr. Moorman), was third with a bright and good collection, and the Rev. E. L. Fellowes was fourth. Four other exhibitors showed in this class. Strong competition prevailed in the class for twelve Teas or Noisettes, ten exhibitors entering, and all staged well. Mr. Brown took the lead with fine examples of Jean Ducher (for which the silver medal was awarded as the best Tea Rose in the amateur classes), Madame Cusin, Madame Caroline Kuster, Anna Ollivier, *Souvenir d'Elise Vardon*, Barrillet Deschamps, *Devoniensis*, *Souvenir d'un Ami*, Catherine Mermet, Bouquet d'Or, Alba Rosea, and Comtesse de Nadaillac. Miss Baker was a close second, her blooms of Anna Ollivier, *Souvenir d'Elise Vardon*, Princess of Wales, Hon. Edith Gifford, Madame Willermoz, and Comtesse de Nadaillac being remarkably beautiful. Good examples were also noticeable in the third and fourth-prize stands from the Rev. E. G. King and Mr. W. H. Wakeley.

Division E contained four classes, in all of which there was good competition, but we cannot give the details of each. The prizewinners were however, as follows:—Class 16.—Twelve distinct, single trusses.—First, E. B. Lindsell, Esq., Hitchin. Second, Rev. A. Foster-Melliar, Bury St. Edmunds. Third, Rev. W. Wilks, Croydon. Class 17.—Nine distinct, single trusses.—First, Mrs. Fuller, Bexley, Kent. Second, Rev. C. Eddy, Basingstoke. Third, Rev. J. G. Hodgson, Hythe. Fourth, Mr. J. Sladden, Worcester. Class 18.—Six distinct, single trusses.—First, Mr. A. Horne, Reigate. Second, Rev. F. S. Taylor, Evesham. Third, Mr. J. Bateman, Highgate Road. Fourth, Rev. F. R. Burnside, Gloucester. Class 19.—Six Teas or Noisettes, distinct, single trusses.—First, Rev. A. Foster-Melliar. Second, Mr. J. Sladden. Third, Rev. J. G. Hodgson. Fourth, E. B. Lindsell, Esq.

EXTRA CLASSES.

Baskets of Roses were contributed by five exhibitors, all very similar in style, the blooms being arranged with Fern fronds, rather closely packed, and not quite so lightly placed as might have been desired. The most effective, however, was that from Eckroyde Claxton, Esq., The Rosery, Allerton, Liverpool, some handsome blooms being employed, and the lower part of the basket was clothed with moss. Mrs. Cuthell, Capelcraft, and the Rev. Allan Cbeales, Brockham Vicarage, being second and third. An additional class for twenty-four blooms, twelve Hybrid Perpetuals and the same number of Teas or Noisettes, was provided, in which the Veitch Memorial medal and prize were offered, and it was expected that these would have brought a stronger competition than was the case, as though there were nine entries the blooms were only of average merit. The Rev. W. H. Jackson secured the substantial honours named, with Hybrid Perpetuals Marie Rady, Madame G. Luizet, Etienne Levet, Duchess de Vallombrosa, Marie Finger, Duke of Edinburgh, Madame G. Luizet, Marie Baumann, Madame Lacharme, François Michelin, Charles Lefebvre, Eugène Verdier, and La France. Teas, *Souvenir d'Elise Vardon*, Alba Rosea, Madame Caroline Kuster, Catherine Mermet, Madame Marie Van Houtte, *Souvenir d'un Ami*, *Innocente Pirola*, *Homère*, Jean Ducher, and Madame Angèle Jacquin. The Rev. H. Berners, Harkstead Rectory, Ipswich, was second, and Mr. J. Grant third, each showing small but neat blooms. Far the best of seven collections of six varieties were from Mr. H. Foster, Ashford, Kent, who had excellent examples of Abel Carrière, A. K. Williams, Madame Hippolyte, Marie Rady, Avocat Du Vivier, and Alba Rosea. H. E. Ponsford, Esq., Elm Lodge, Reigate; P. Waterer, Esq., Sutton, Surrey; and the Rev. F. H. Gall, Hitchin, followed in that order.

For the best six trusses of any Hybrid Perpetual Rose there were eighteen entries, and the prizes were awarded in the following order:—First, Mr. S. B. Budd, Bath, with Ulrich Brunner very handsome; second, G. Christy, Esq., Buckhurst Lodge, Westerham, with Mons. Noman, almost equally good; third, Mr. Grant, with Constantin Treiakoff; and fourth, Mr.

Gray, Sevenoaks, with Etienne Levet. Nine boxes of six blooms, any Tea or Noisette, were also staged, the Rev. J. H. Pemberton leading with Anna Ollivier, beautiful, followed by Mr. C. S. Cuthell with Maréchal Niel, Miss W. Taylor with Catherine Mermet, and Mr. Bethune with Innocente Pirola, all good.

OPEN CLASSES.

Twelve classes were enumerated under this head, the majority being devoted to stands of one variety, but a few were for general collections as in the first for twelve Teas triplets, in which there were eleven competitors. Mr. G. Prince again won leading honours with superb blooms of the varieties Comtesse de Nadaillac, Souvenir d'Elise Vardon, Hon. Edith Gifford, Prince of Wales, Maréchal Niel, Innocente Pirola, Catherine Mermet, Jean Ducher, Alba Rosea, Perle des Jardins, Francisca Kruger, and Rubens. Mr. B. R. Cant followed with a good stand, Madame Cusin being in splendid condition. Messrs. Paul & Son were third and Mr. F. Cant fourth.

An extremely interesting class was that devoted to "Garden Roses," as distinguished from the ordinary exhibition varieties, and in which a number of old favourites were shown. Of the five competitors Mr. Julius Sladden secured the chief prize with pretty examples of the undermentioned varieties:—Rosa multiflora, Ma Capucine (Tea), Jules Margottin (H.P.), Princess Clementina (Provence), Bougère (Tea), Madame Fillion (H.P.), Celine Forestier (Noisette), Amabilis (Tea), Olga Marix (H.P.), La Ville de Bruxelles (Damask), Fabvier (China), Homère (Tea), Miss Hassard (H.P.), Narcisse (Noisette), Madame Plantier (Hybrid China), and Fillemberg (Noisette). Mr. J. Walker's second-prize stand also contained some interesting varieties, Messrs. Bunyard & Co. and Mr. W. Rumsey being the other prizetakers with similar collections. The Moss and Provence Roses from Messrs. Paul & Son, Cranston, G. Prince and Bunyard were all very pretty, the best in the first stand being Baron de Wassenaar, Perpetual White, Little Gem, Common Moss, and Lanei.

Bnttonhole Roses had a class devoted to them, and the seven collections entered contained some charming little buds. Mr. J. Mattock won the first place with exquisite examples of Anna Ollivier, Madame Lambert, Innocente Pirola, W. A. Richardson, David Pradel, Madame Falcot, Marie Van Houtte, Souvenir de Paul Neyron, Catherine Mermet, Homère, Ma Capucine, and Rubens. Messrs. Cranston, who were second, had neat buds of Charles Darwin, Fisher Holmes, and Bouquet d'Or in addition to many of the preceding. Messrs. Bunyard & Co. followed, Homère and Madame Cusin being two of their best.

New Roses were only shown by two exhibitors, and the blooms were not of remarkable merit in any of the stands. Messrs. Curtis, Sanford & Co. were first with Marquise de Romain, Admiral Seymour, Mrs. G. Dickson, Mdle. L'Anier, Madame Raimbaud, Lord Bacon, Directeur Alphan, Madame Dellevaux, Mdle. Julie Gautain, Mary Bennett, Baron de Rothschild, and Souvenir de Leon Gambetta. Messrs. Paul & Son were second with Pride of Reigate, Madame Alice Van Geert, Queen of Queens, Maréchal P. Wilder, Benoist Comte, Grace Darling, Madame Norman Neruda, Longfellow, Madame de Watteville, Eclair, Sunset, and M. Francisque Rêve. For twelve blooms of any new Rose not in commerce in England previous to 1883, Mr. B. R. Cant was first with Madame de Watteville, a lovely rose-tinted Tea variety previously noted. Messrs. Curtis, Sanford & Co. were second with Alphonse Soupert, and Messrs. Cranston third with Merveille de Lyon.

The special variety classes formed a beautiful display, and included some extremely fine blooms. For twelve of any yellow Rose Mr. G. Prince was first with Comtesse de Nadaillac, remarkably good. Messrs. Cranston were second with the same variety, and Mr. C. Turner third with Madame Margottin. In the White variety class there were nine stands of Merveille de Lyon, all very handsome, forming, indeed, one of the features of the Show. The prizes were won by Messrs. Curtis, F. Cant, and G. Paul. Fifteen stands of crimson Roses were entered, Messrs. Cooling taking the lead with A. K. Williams, followed by Paul & Son with Alfred Colomb, and G. Prince with Ulrich Brunner, all handsome blooms. Dark velvety crimson Roses were not largely shown. Messrs. Curtis were first with Jean Lelievre, and Paul & Son second with Abel Carrière.

With twelve blooms of any Rose Mr. H. Bennett, Shepperton, scored a success, for amongst fifteen competitors he was placed first with Her Majesty, of wonderful substance and very handsome, being followed by Messrs. Curtis, Sanford, & Co., with Ulrich Brunner, Mr. B. R. Cant with Souvenir d'Elise, and Mr. F. Cant with Mons. Noman, all remarkably beautiful examples of their respective varieties. Mr. Bennett's other success in the seedling class is referred to in the introduction to this report.

Miscellaneous exhibits, beyond the Carnations already mentioned and the magnificent collection of Roses from Messrs. J. Veitch & Sons, were not numerous, but the display of hardy flowers was beautiful and extensive.

The weather was very hot, necessitating the free ventilation of the conservatory, and during the day the blooms suffered considerably, some even of the medal blooms losing all their charms in a few hours. There was a large number of visitors, much satisfaction was expressed with what was collectively a handsome exhibition.

CRYSTAL PALACE.

MANY grand exhibitions of Roses have been held at the Sydenham Palace, and rosarians now regard it as one of the chief events of the year, but it is doubtful if so extensive a show as that of Saturday last has ever been provided there before. It was a great success, and though evenness of quality has been more notable on some previous occasions, yet there were abundance of blooms that could scarcely be surpassed either in substance, form, or colour. This was observable in nearly every stand, and the irregularity was attributed in most cases to the extremely dry weather that has prevailed for some time past. It seemed as though exhibitors had a difficulty in completing their stands, a proportion of very fine Roses were staged, and then the requisite number had to be made up of smaller and less satisfactory blooms. In the larger classes this was particularly notable, and especially so in the open class for seventy-two, which was one of the weakest as regards quality of blooms in the whole Exhibition. Some of the finest blooms were in the open classes for forty-eight triplets and twenty-four singles, and the competition in the latter was extraordinary, no less than

seventeen boxes of blooms being staged, and occasioned the Judges no slight difficulty. In the Tea classes there was a greater regularity of blooms than amongst the H.P.'s, and indeed they were extremely good in the majority of instances, as fresh and substantial as could be desired. In the H.P.'s there was a good proportion of light and dark colours, which was very noticeable when viewing the long lines of blooms from each end of the tables, and this added much to the beauty of the Show, for while the dark shades were very rich and bright, the light tints were clear and pure as they should be.

In all the leading classes the competition was very keen, and the bloom from the several exhibitors were so nearly equal in merit that the Judges had to give very careful consideration to them before they could determine their relative positions. A total of about 6000 blooms were entered in the classes, and together with about the same number from Messrs. William Paul & Son of Waltham Cross constituted an exhibition of unusual magnitude. The competing blooms were arranged in four lines on two series of tables reaching from the fountain to the centre transept, the central space between the lines of boxes being occupied with Palms, Ferns, &c., which served to break the monotony and formality that exhibitions of this character inevitably possess. All the arrangements were most satisfactorily conducted by Mr. W. G. Head, who deserves much praise for the highly successful show he was the means of providing.

OPEN CLASSES.—The most important of these is usually that for seventy-two single trusses, as the great Rose-growing firms put forth their utmost strength to insure success in what is often termed the champion class. This was not the case on Saturday, however, for even the renowned Mr. B. R. Cant of Colchester, who won premier honours, was not in his best form, and though his blooms were much superior to the others in the same class he has frequently exhibited finer and more even examples. He had blooms of the following varieties:—Ulrich Brunner, Innocente Pirola, Lord Macaulay, Magna Charta, Madame Prosper Laugier, Madame Bravy, Alfred Colomb, Niphetos, Boieldieu, Alphonse Soupert, Prince Arthur, La Boule d'Or, Duke of Wellington, Annie Laxton, Fisher Holmes, Marguerite de St. Amand, A. K. Williams, Victor Verdier, M. Isaac Perrière, Madame Noman, Jean Soupert, Duchesse de Morny, Général Jacqueminot, Madame H. Jamain, Dr. Seville, Comtesse de Nadaillac, Countess of Rosebery, Marquise de Castellane, Star of Waltham, Souvenir d'un Ami, Mons. Alfred Dumesnil, Hon. Miss E. Gifford, Earl Pembroke, Emily Laxton, Xavier Olibo, Madame Nachury, Mrs. Baker, Madame Caroline Kuster, Eugène Fürst, Baroness Rothschild, Horace Vernet, Madame Lacharme, Jules Margottin, Devoniensis, Marie Rady, Lady Mary Fitzwilliam, Madame Marie Verdier, Mademoiselle Julie Dymonier, Duke of Edinburgh, Maréchal Niel, François Michelin, Madame Gabriel Luizet, Comtesse de Sereney, Ferdinand de Lesseps, Souvenir d'Elise Vardon, Dr. Andry, Duchesse de Vallombrosa, Marie Baumann, Marie Van Houtte, Etienne Levet, Catherine Mermet, Abel Carrière, Mons. Noman, Dupuy Jamain, Marchioness of Exeter, Madame Ducher, Violette Bouyer, Le Havre, Merveille de Lyon, Sultan of Zanzibar, and Mademoiselle Marie Cointet. Messrs. G. Paul & Son, Cheshunt, were second, their blooms being rather less even and substantial, but there were some beautiful examples of Caroline Kuster, Sénateur Vaisse, Beauty of Waltham, Ulrich Brunner, Lady Mary Fitzwilliam, Etienne Levet, and Madame Eugène Verdier. Mr. Turner, Slough, was third with somewhat rougher blooms.

Four good collections were staged in the class for forty-eight triplets, and in this Messrs. Paul & Son won the chief position with rather full but handsome blooms, especially rich in colour. The varieties were Merveille de Lyon, Prince Arthur, Abel Carrière, Mons. Noman, Marguerite de St. Amand, Alfred Colomb, Marie Baumann, Countess of Oxford, Madame Gabriel Luizet, very fine; Louis Van Houtte, Dr. Andry, Madame Lacharme, Capitaine Christy, Marie Rady, Etienne Levet, Marie Cointet, Pride of Waltham, Antoine Ducher, Horace Vernet, excellent; Niphetos, Duchesse de Vallombrosa, Camille de Bernardin, A. K. Williams, extremely fine; François Levet, Centifolia Rosea, Mrs. G. Paul, beautiful in size and colour; Comte Raimbaud, Baron Rothschild, Madame Hippolyte Jamain, Xavier Olibo, Ulrich Brunner, very fine; Clothilde Rolland, François Michelin, Mons. E. Y. Teas, Beauty of Waltham, Violette Bouyer, Madame Eugène Verdier, Mons. A. Dumesnil, General Jacqueminot, Marquise de Castellane, Star of Waltham, Queen of Queens, Abel Grand, Victor Verdier, Duke of Edinburgh, Comte de Paris, Marie Verdier, and Duke of Teck. The second place was taken by Mr. B. R. Cant, who was not many points behind the first. Especially good were Comtesse de Nadaillac, La France, Madame Gabriel Luizet, Dupuy Jamain, Edouard Morren, François Michelin, Etienne Levet, and Ulrich Brunner, of wonderful substance. This Rose was indeed remarkably well represented throughout the Exhibition. Mr. C. Turner was third with smaller blooms.

The competition was keen in the class for twenty-four triplets, eight stands being entered, and they were all very close in merit, some of the best Roses shown being in this class. Mr. John House of Peterborough secured the premier prize with substantial and bright blooms of the following:—Baroness Rothschild, Beauty of Waltham, Duke of Teck, Madame Marie Verdier, François Michelin, Mons. E. Y. Teas, Dr. Andry, Violette Bouyer, Capitaine Christy, Louis Van Houtte, Fisher Holmes, Madame Gabriel Luizet, Madame Lacharme, Exposition de Brie, Marquise de Castellane, Marguerite de St. Amand, Magna Charta, Camille Bernardin, Horace Vernet, Duchesse de Vallombrosa, La France, A. K. Williams, Marie Baumann, Merveille de Lyon. Mr. W. Rumsey, Waltham Cross, and Mr. F. Cant, Colchester, followed in that order, an extra prize being awarded to Messrs. G. Cooling & Son, Bath.

Of the seventeen exhibitors with twenty-four single trusses Mr. John House was again the most successful, gaining the first place with very beautiful blooms, forming one of the most even stands in the Show. The varieties were A. K. Williams, La France, Ulrich Brunner, Souvenir d'Elise Vardon, Horace Vernet, Violette Bouyer, Lord Macaulay, François Michelin, Exposition de Brie, Marchioness of Exeter, Duchesse de Vallombrosa, Niphetos, Alfred Colomb, Madame H. Jamain, Louis Van Houtte, Maréchal Niel, Camille Bernardin, Madame Marie Verdier, Charles Lefevre, Marquis de St. Amand, Beauty of Waltham, and Comtesse de Nadaillac. The second prize stand from Mr. F. Cant was a very good one and contained some excellent blooms, Madame Gabriel Luizet, Mons. Alfred Dumesnil, Etienne Levet, and Merveille de Lyon being uncommonly fine. Mr. G. Prince, Oxford, was third with bright but rather irregular blooms.

The open class for Tea and Noisette Roses was for eighteen varieties,

three trusses of each, and of the seven competitors Mr. G. Prince was easily first with such a collection as we are accustomed to see from him, the blooms all fresh, beautiful, and even. The varieties were Comtesse de Nadaillac, Madame H. Jamain, Hon. Edith Gifford, Marie Van Houtte, Perle des Jardins, Rubens, Princess of Wales, Souvenir d'Elise Vardon, Jean Vernet, Souvenir d'un Ami, Jean Ducher, Niphotos, Innocente Pirola, Anna Ollivier, Maréchal Niel, Francisca Kruger, Catherine Mermet, and Alba Rosea. Mr. B. R. Cant was second, also with handsome blooms, the following being remarkably fine:—Madame Cusin (charming), Catherine Mermet, Madame Caroline Kuster, Souvenir d'Elise Vardon, La Boule d'Or, and Maréchal Niel. The third prize was awarded to Mr. C. Turner, his best blooms being Madame Margottin, Alba Rosea, Souvenir d'un Ami, and Innocente Pirola.

Classes were provided for collections of yellow, white, pink, crimson, and velvety-crimson Roses, three trusses of each, which were very interesting, though the entries were not numerous. With yellow Roses Mr. G. Prince was first, showing pretty examples of the following:—Comtesse de Nadaillac, Perle des Jardins, Sunset, Jean Pernet, Jean Ducher, Marie Van Houtte, Francisca Kruger, and Maréchal Niel. Messrs. G. Paul followed, having Madame Falcot, Maréchal Niel, Marie Van Houtte, Caroline Kuster, Sunset, and Jean Ducher in first-rate condition. Messrs. J. Barrett & Co., Home House Nursery, Cambridge, were third; Anna Ollivier, Perle des Jardins and Princess of Wales being of especial merit.

Five stands of white Roses were entered, but two were disqualified for containing blooms of pink varieties. Mr. B. R. Cant won the leading prize with a charming collection, comprising fine blooms of Madame Lacharme, Innocente Pirola, Niphotos, Violette Bouyer, Devonensis, and Merveille de Lyon. Mr. W. Rumsey followed, staging Souvenir de Malmaison, Souvenir d'Elise Vardon, Madame Lacharme, Merveille de Lyon, Niphotos, Alba Rosea, and Madame Hippolyte Jamain.

Pink Roses were handsomely represented in eleven stands, all of nearly equal merit. Messrs. G. Paul & Son were accorded first honours for admirable examples of Princess Beatrice, Lady Mary Fitzwilliam, Baroness Rothschild, Marguerite de St. Amand, Abel Grand, Madame Alice Durer, Madame Eugène Verdier, François Levet, Duchesse de Vallombrosa, Mons. Noman, Marquise de Castellane, Julie Touvais, and Madame Gabriel Luizet. The second place was secured by Mr. B. R. Cant, who had Madame Gabriel Luizet, Mons. Noman, La France, Marguerite de St. Amand, and Marie Cointet in capital form. Mr. J. Mattock, New Headington, was third, having Catherine Mermet, Mons. Noman, Princess Mary of Cambridge, Madame Isaac Perrière, and La France very fine.

The best crimson Roses were from Messrs. G. Paul & Son, who took the lead in the class with excellent richly coloured blooms of Maréchal Vaillant A. K. Williams, Duc de Roban, Star of Waltham, Beauty of Waltham, Marie Rady, Alfred Colomb, Dr. Andry, Mons. E. Y. Teas, Leon Renault, Marie Baumann, Jean Sury, Camille Bernardin, Madame Victor Verdier, and Comte de Raimbaud. Messrs. Bunyard & Co., Maidstone, were second with smaller, but neat and bright blooms, amongst which Dnpy Jamain, Sir Garnet Wolseley, Le Havre, and Richard Laxton were the best. The third place was taken by Mr. W. Rumsey. Messrs. Bunyard were well to the front with velvety crimson Roses, contributing substantial and brilliantly coloured blooms of the following:—Abel Carrière, Duke of Edinburgh, Eugène Fürst, Duke of Connaught, Charles Lefebvre, Xavier Olibo, Sultan of Zanzibar, Prince Camille Bernardin, Duke of Wellington, Fisher Holmes, Horace Vernet, Charles Darwin, Prince Arthur, and Rosieriste Jacobs. Mr. B. R. Cant, who was second, showed Reynolds Hole, Louis Van Houtte, and Xavier Olibo in excellent condition; Mr. W. Rumsey being again third.

Another group of classes was devoted to particular varieties or others of similar colour, and like the preceding were extremely interesting. For eighteen trusses of any Tea or Noisette, Mr. F. Cant won chief honours, having Souvenir d'Elise Vardon extremely fine in form and substance. Mr. B. R. Cant was second, also with the same variety, the blooms not quite so large but very even. Messrs. G. Paul & Son followed with Jean Ducher. All the prizewinning stands in this class were distinguished by the freshness and neatness of the blooms. There was only one stand of eighteen Maréchal Niel, from Mr. B. R. Cant, and for which the second prize was awarded, the blooms being rather small. There were eight competitors with eighteen trusses of François Michelin or similar coloured Rose, Messrs. G. Paul taking the first place with Ulrich Brunner, and Cranston Nursery Company, Hereford, were second with the same variety. The blooms in the first stand were exceedingly fine, and well merited the prize. When the class was first judged the second prize was given to a stand of Etienne Levet, but as it was subsequently found that this was also from Messrs. Paul & Son, it was removed, Messrs. Cranston's stand being advanced to the second place, and Mr. F. Cant to the third.

Nine boxes of Marie Baumann were entered, and all the prizewinners—namely, Mr. B. R. Cant, Messrs. G. Paul & Son, Messrs. Hugh Low & Co., Enfield, and Messrs. G. Bunyard & Co. showed that variety, the Colchester blooms being, however, much superior to the others. Prince Camille de Rohan was not so well shown, Messrs. Paul & Son being first with Abel Carrière, very fine, and Messrs. H. Low & Co. second for the only stand of the Prince.

The beautiful Rose Lady Mary Fitzwilliam is fast coming into favour as an exhibition variety, and it was not therefore surprising to find that in the class specially provided for it some fine examples were contributed. Thirteen stands of magnificent blooms were staged, and most appropriately Mr. W. Bennett, Shepperton, secured leading honours with large and handsome examples of the variety named. S. P. Budd, Esq., Bath, was second with La France, Mr. B. R. Cant being third with Baroness Rothschild. The best of the five boxes of A. K. Williams was that from Messrs. G. Paul and Son, who had some grand blooms. Mr. G. Mount and Mr. W. J. Grant were second and third. Messrs. F. Cant, B. R. Cant, and G. Prince were the prizetakers for eighteen blooms of Niphotos, those in the first stand being very handsome, but the others were smaller and not of a remarkable character. The bright orange-coloured and distinct William Allen Richardson was exhibited by eight competitors, all the blooms being very bright. Messrs. House, Paul & Son, and G. Bunyard secured the prizes, the Peterborough blooms being extremely fine. For twelve bunches of Rosa polyantha there were only two exhibitors, Mr. G. Prince leading with charming

blooms of Anna Maria de Montravel, Mignonette, and Paqueritte, Mr. G. Mount having similar varieties, with the addition of The Pet, a white-flowered form. No exhibits of Rosa rugosa were staged in the class provided for it.

AMATEURS' CLASSES.—Amateurs showed very well, and it was observable that taking their stands generally there was greater evenness than in the open classes, while the blooms in many cases were equally as fine. There were thirteen competitors with forty-eight single trusses; Mr. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, gaining the premier prize with a most handsome collection, the blooms very even, of good substance, and exceedingly bright. The varieties were Etienne Levet, Camille Bernardin, Charles Darwin, Marie Verdier, Pride of Waltham, Beauty of Waltham, La France, Duke of Teck, Marie Van Houtte, François Michelin, Marie Rady, Madame Isaac Perrière, Marie Baumann, Lady Mary Fitzwilliam, Alfred Colomb, Madame Gabriel Luizet, Madame Victor Verdier, a pink sport from Madame C. Joigneux; Edouard Morren, Victor Verdier, Dr. Andry, Violette Bouyer, Auguste Rigotard, Mons. E. Y. Teas, A. K. Williams, Emily Laxton, Le Havre, Marquise de Castellane, Madame Lacharme, Louis Van Houtte, Duchesse de Vallombrosa, Mrs. Baker, Mons. Noman, Ulrich Brunner, Heinrich Schnltheis, Horace Vernet, Merveille de Lyon, Mrs. Laxton, Baronne de Rothschild, Magna Charta, Dupuy Jamain, Duke of Wellington, Charles Lefebvre, Capitaine Christy, Xavier Olibo, Countess of Oxford, Comtesse de Choiseuil, and Duchesse de Caylus. Second honours were accorded to the Rev. J. H. Pemberton, Havering atte Bower, Romford, for grand blooms, but some were rather full. Mr. A. Slaughter, Jarvis Villa, Steyning, was third, amongst his best blooms being an extremely fine example of Dr. Hogg.

A class was constituted for twenty-four varieties, single trusses, Hybrid Perpetuals only, and the non-observance of this stipulation compelled the Judges to reluctantly disqualify a stand which contained some Tea Roses, the collection being as a whole superior to those which gained the prizes. Of the four competitors Mr. R. Gray, gardener to Earl Stanhope, Chevening, Sevenoaks, was first with the following varieties, the blooms very fresh and bright:—Marguerite Brassac, Countess of Rosebery, François Michelin, Horace Vernet, A. K. Williams, Mons. Noman, Etienne Levet, Madame Gabriel Luizet, Alfred Colomb, La France, Duke of Edinburgh, Louis Van Houtte, Duke of Teck, Madame Victor Verdier, Merveille de Lyon, Marguerite de St. Amand, Duchesse de Vallombrosa, Abel Carrière, Marie Baumann, Marquise de Castellane, Marie Finger, Marie Rady, Mons. E. Y. Teas, and Madame Charles Wood. The other prizes were awarded to Mr. G. Christy, Westerham, Kent, and to Mr. R. E. West, Reigate, in the order named.

With twenty-four triplets Mr. T. W. Girdlestone, Sunningdale, won the principal honours for handsome, substantial blooms, of which the most notable were Etienne Levet, Ulrich Brunner, Madame Prosper Langier, Souvenir d'Elise Vardon, General Jacqueminot, and A. K. Williams. Mr. J. Brown, gardener to A. J. Waterlow, Esq., Great Doods, Reigate, was second, Ulrich Brunner and Mons. Noman being remarkably fine; and the Rev. J. H. Pemberton was third. Mr. E. B. Lindsell, Hitchin; Mr. J. Brown; Mr. E. Wilkins, Lyndhurst, Sutton; and Mr. E. M. Bethune, Denne Park, Horsham, were the prizetakers with twelve varieties of H.P.'s; while with the same number of Teas Mr. A. Slaughter, Mr. Bethune, and the Rev. H. Berners, Harkstead Rectory, Ipswich, were the most successful, all showing good blooms.

PLANTS AND FLOWERS.—In addition to the classes for Roses, five were devoted to plants and flowers, the most important being that for a group of Tuberos Begonias to occupy a space of 100 square feet. Messrs. J. Laing and Co., Forest Hill, had a grand collection of their celebrated Begonias, which were arranged in a pyramidal form with Palms and Ferns, constituting a most imposing group at one end of the Rose tables, and comprising all the best of the numerous fine varieties raised in that establishment, about 250 plants being staged. Mr. H. Coppin was placed second. Mr. C. Turner was the only exhibitor of Lilioms, and was awarded the first prize for six good plants of L. auratum. There was not a remarkable display of Carnations and Picotees. Messrs. Turner, Douglas, and Hooper of Bath taking all the prizes.

MESSRS. W. PAUL'S ROSES.—In the opposite nave to that containing the Roses in competition was an extraordinary exhibition by Messrs. W. Paul & Son, Waltham Cross, which will be maintained in its present condition for a week. Three large tables, each about 40 feet long, are filled with cut blooms arranged in baskets or stands, and having a most graceful effect, far superior to the orthodox method of showing Roses in formal boxes. In the centre of the nave are handsome groups of Roses in pots, charming dwarf profusely flowered plants, which with a margin of Selaginellas, tall Ferns, and Palms being interspersed amongst the Roses, have a most novel and pleasing effect. Nearly the whole collection of Roses grown at Waltham Cross—namely, 700 to 800 varieties, is represented, and there is about the same number of plants, while there cannot be much less than 10,000 blooms. Altogether it is a remarkable exhibit, and attracted equally as much attention on Saturday as the competing stands. It will no doubt induce many rosarians to visit the Palace during the present week.

MISCELLANEOUS.—There were not many non-competing groups shown, but Messrs. H. Cannell & Sons, Swanley, contributed an extensive and beautiful collection of hardy flowers, Pelargoniums, Tuberos Begonias, and other treasures from the "Home for Flowers." Mr. W. Bennett, Shepperton, exhibited stands of his Roses Her Majesty and Mrs. John Laing, the latter being certificated. Messrs. Cheal & Sons showed a collection of hardy flowers, and Messrs. Cooling & Son, Bath, had some Tea Roses.

A certificate was awarded for the following:—

Rose Mrs. John Laing (W. Bennett).—A pedigree seedling H.P. Rose of the François Michelin build, globular in form, of great substance, lively pink in colour, and possessing an exquisite fragrance like the old Cabbage Rose. It is a grand variety, and was much admired both at the Palace and Sunbury, where it was certificated a few days previously. It was shown a season or two ago, but had not then developed its best characters.

HITCHIN.

THE fifth annual Exhibition of this Society, one of the most promising and vigorous affiliations of the National Society, was held in the pretty

grounds of the Priory on Thursday last. The competition was spirited and well kept up in nearly all the classes, there being six entries in the open forty-eights, but owing to the fixture clashing with Bath and other important attractions on the same day, and probably also to the frequently recurring

this progress the local growers are largely indebted to the effective influence of the Society's work and its liberality in offering prizes open to all England, and which has been this season extended by the opening of all the prizes to members of the Society or others without respect to residence the result



Fig. 5.—CYMBIDIUM LOWIANUM. (See page 28.)

cold nights of the previous period of ten days, some strong battalions were not able to show their colours. The Roses, although not including such dashing blooms as those shown by Mr. House last year, were, however, on the whole generally of a higher standard and much more even than at any of the previous shows at Hitchin, the staging, too, being greatly in advance of the primitive attempts formerly noticeable here at the early shows. For

fortunately not having brought discouragement to the Committee and their zealous Hon. Secs., the Revs. E. T. Carey and W. H. Gall. The latter, than whom there can be no more ardent devotee to the Rose, was on this occasion a redoubtable, although not a successful, exhibitor in the lists; but as the possessor of a pure white buttonhole of the famous and costly Gloire Lyonnaise deserves a note of admiration. Possibly it may have been a sport from that dazzling gem, but although many were the conjectures as to the name of the stranger it remained unrecognised, all the features of the craved yellow H.P. being absent. Tea Roses were as usual here an important attraction, the Revs. Dr. King and W. H. Jackson being deservedly honoured. Dr. King showed blooms of Souvenir de Thérèse Levet, a veritable Tea of a dark fruity crimson colour and appearance, with stout petals, a very striking and distinct Rose, but too heavy in colour to harmonise with the delicate tints of Teas and Noisettes, the deepest tone admissible amongst these being the pale carmine of Madame Lambard. Mr. House had also a good bloom of Lanetta, a prettily shaped cream-tinted Tea, and the Hon. Edith Gifford appeared to advantage as an exhibition flower. Duchesse de Vallombrosa has never been so fine, the present season seeming to suit it exactly; on the contrary, good blooms of Alfred Colomh were few and far between. Heinrich Schultheis, a carminated pink H.P., and Lady Mary Fitzwilliam, a fine hold flower of Mr. Bennett's, were both well shown, the latter giving the impression of a cupped and improved Souvenir de la Malmaison, the foliage, too, having something of the Bourbon character. Mr. Laxton of Bedford staged a box of his pretty new flush seedling Bedford Belle, a very free-flowering and distinct new Rose, which attracted much attention.

For the class of forty-eight distinct Roses, open to all England, Mr. T. House of Peterborough was first, having fine specimens of Violette Bouyer, Lady Mary Fitzwilliam, Mdle. G. Luizet, Duke of Edinburgh, Merveille de Lyon, Emily Laxton, Charles Darwin, Ulrich Brunner, Duke of Teck, Prince Camille de Rohan, and Catherine Bell, a nice-looking H.P., intermediate in colour and appearance between John Hopper and Coupe d'Hébé. Mr. Atherton of the Nurseries, Chatteris, was creditably second, and closely

followed by Messrs. E. P. Francis & Co., Hertford. For twelve Teas in the open class Mr. House stood well first, having very beautiful flowers of Catherine Mermet, Comtesse de Nadaillac, Niphotos, Alba Rosea, and J. Ducher. In the class for thirty-six distinct Roses, open to all England, amateurs, the Rev. W. H. Jackson of Stagsden Vicarage, Bedford, was prominently foremost and received the first prize, having amongst his best blooms La France, Marie Baumann, François Michelin, Duchesse de Vallombrosa, Charles Darwin, Etienne Levet, and Maréchal Niel, very good. Mr. J. T. Curtis of Chatteris was second with very fresh blooms, including in his best A. K. Williams, Lord Macaulay, and La France; and the Rev. E. L. Fellowes of Wimpole Rectory, Royston, approached closely as third. In the class for twenty-four blooms, open to members of the Hitchin Rose Society, Mr. E. B. Lindsell of Bearton, Hitchin, had in his first-prize stand remarkable blooms, including Mdle. G. Luizet *couronnée* with the bronze medal of the National Rose Society as the best amateur's H.P. in the Show, Countess of Oxford, Duchesse de Vallombrosa, Marie Baumann, Louis Van Houtte, Etienne Levet, and Devoniensis. Mr. Jackson was here second and Mr. Fellowes third. For twelve blooms, open to members, Mrs. Lawson of the Manor House, Lilley, Herts, was first. The Rev. Dr. King of Madingley Vicarage, Cambridge, taking with a fine flower of Niphotos the National Rose Society's bronze medal for the best Tea; the silver medal going to Mr. S. Tuke of St. Ippolyts, Hitchin, for the best nine Teas; the Rev. F. Fox Lambert of Clothall coming second. For eighteen Teas, open to all amateurs, the Rev. Dr. King was first and the Rev. W. H. Jackson second; and for the prize for twelve Teas offered by Mr. George Panl, open to members, the Rev. W. H. Jackson was awarded first and Dr. King second; the Rev. F. Jenyns, Knebworth, and Mr. Fellowes taking prizes also in the two last classes. The ladies' prizes for epergnes, baskets, and buttonholes were well contested and the arrangements very tasteful, the chief prizes in these classes falling to Miss M. Ransom, Mrs. E. B. Lindsell, and Miss Grace Lucas.

The day was very fine and the Show in all respects a successful one, the proverbial affability, cordiality, and hospitality of Hitchin contributing much to make all things go smooth. Another feature is that the management knows how to keep the outgoings within the bounds of income; exhibitors under these circumstances may be expected at Hitchin again.

REIGATE.—JULY 2ND.

FAVoured with charming weather, and with the delightful surroundings of one of the most charming places in a neighbourhood so full of delightful places as Reigate is—in the grounds of Great Doods, the residence of A. J. Waterlow, Esq., the annual Exhibition of this well-known and energetic Society was held on Thursday last, and proved to be a great improvement on that of last year, and indeed was the best that I remember in the years that I have been privileged to act as Judge at the Show; for although the Tea Roses were certainly not up to the Reigate mark, which has always been famous for them, the general quality of the flowers was excellent. The box of twenty-four shown by Mr. Slaughter, and that of twenty-four Teas shown by Mr. Prince, could hardly have been surpassed, but amidst all that was bright and beautiful, there was in, I believe, all who had ever been at Reigate before, a feeling that there was a cloud over us, that it lacked something to make it what it used to be, and that the vacant space caused by the death of their former President, Mr. G. Baker, was never likely to be filled up. There are many kind, hospitable, and enthusiastic lovers of the Rose there, but he was so thoroughly *facile princeps*, that his loss has indeed been a severe one. I think, too, many felt the state of snuffing in which the owner of the place, Mr. A. J. Waterlow, was, not enabling him to see the scene which, through his kindness, existed in his own grounds.

In class 1, for thirty-six distinct blooms, open, the first prize was awarded to Messrs. Paul & Son for a stand containing good blooms of Senateur Vaisse, Captain Christy, Abel Carrière, La France, Henrich Schultheis, Madame Gabriel Luizet, Madame Prosper Laugier, Abel Grand, Reynolds Hole, Madame Nachury, Marquise de Castellane, Hero of Waltham, Camille de Rohan, Centifolia Rosea, Madame Bernardin, Lady Mary Fitzwilliam, Duke of Edinburgh, Etienne Levet, Duke of Teck, Duke of Wellington, Countess of Oxford, Merveille de Lyon, Madame Victor Verdier, Mons. Noman, Beauty of Waltham, Pride of Waltham, Xavier Olibo, Marie Cointet, Pride of Reigate, the curious shaped Rose raised by Mr. J. Brown; François Louvat, A. K. Williams, Violette Bouyer, Prince of Wales, Marie Verdier, Mons. E. Y. Teas, and Clothilde Rolland. Mr. Piper was second. In class 2, for twenty-four Teas, Mr. Prince was easily first with a lovely stand which fully maintained the widely known reputation of the Oxford firm for Tea Roses. They were—Comtesse de Nadaillac, of which also he had a most lovely stand of twenty-four; Anna Olivier, Souvenir d'un Ami, Alba Rosea, Catherine Mermet, Hon. Edith Gifford, Maréchal Niel, Souvenir d'Elise Vardon, Madame Caroline Kuster, François Kruger, Niphotos, Perle des Jardins, Devoniensis, Jean Ducher, Merveille de Lyon, Rubens, Marie Van Houtte, Souvenir de Madame Pernet, Innocente Pirola, Marquise de Sanuria, Madame Hippolyte Jamain, Amazon, Prince of Wales, and La Princesse Vera. Messrs. Paul & Son were second. In class 3 Mr. Waterlow was first with Lady Mary Fitzwilliam, Victor Verdier, Marie Finger, Countess of Oxford, La France, Etienne Levet, Madame Gabriel Luizet, Louis Van Houtte, Magna Charta, Camille Bernardin, Madame Montet, Mrs. Baker, Baroness Rothschild, Chesbunt Hybrid, Catherine Soupert, Charles Darwin, Marquise de Castellane, Ulrich Brunner, Madame Isaac Pereiere, Marie Baumann, Mons. Noman, Duke of Teck, Madame Victor Verdier, A. K. Williams, Mrs. Poole, Mrs. Laxton, John Hopper, Dupuy Jamain, Madame Cointet, Duchess of Bedford, Princess of Wales, Le Havre, Auguste Rigotard, Violette Bouyer, Madame Prosper Laugier, and Duke of Wellington. In class 6 Mr. Slaughter was first with Marie Rady, La France, A. K. Williams, Camille Bernardin, Louis Van Houtte, Duchesse de Caylus, Maurice Bernardin, Marguerite de St. Amand, Marquise de Castellane, Duchess of Bedford, Marie Baumann, Charles Lefebvre, Auguste Rigotard, Horace Vernet, Etienne Levet, Alfred Colomb, Countess of Rosebery, Jean Liabaud, Marie Verdier, Fisher Holmes, E. Y. Teas, Madame Gabriel Luizet, Général Jacqueminot, and Prince Arthur. This was a very grand box, indeed there was not an indifferent bloom in the box. Mr. Haywood was second with an excellent box. In class 7, eight trebles, Mr. Haywood was first with excellent blooms of Marie Verdier, Dupuy Jamain, La France, Marquise de Castellane, Marie Baumann, Gabriel Luizet, Charles Lefebvre,

and Violette Bouyer. Mr. Slaughter was second in class 8 for the best box of blooms of any one variety. Mr. Haywood was first with fine blooms of A. K. Williams, and Mr. Slaughter second with good blooms of La France. In class 9, for twelve Teas, Mr. Slaughter was first with good blooms of Belle Lyonnaise, Souvenir d'un Ami, Jean Ducher, Anna Olivier, Rubens, Madame Willermoz, Maréchal Niel, Alba Rosea, Etoile de Lyon Homère, Catherine Mermet, and Jean Pernet.

In class 10, for amateurs residing within ten miles of Reigate, the first prize for twelve went to E. M. Bethune, Esq., for Henri Ledechaux, La France, Dupuy Jamain, Ferdinand de Lesseps, Annie Laxton, Madame Gabriel Luizet, Louis Van Houtte, Auguste Rigotard, Marie Baumann, Madame Eugène Verdier, Beauty of Waltham, and A. K. Williams. In class 11, for six varieties, Mr. Ponsford was first with Duke of Edinburgh, Star of Waltham, Countess of Rosebery, Prince Camille de Rohan, Général Jacqueminot, and Baroness Rothschild. In class 12, for six trebles, Mr. Ernest Williams of Lyndhurst, Sutton, was first with Emily Laxton, Marquise de Castellane, Duchess of Vallombrosa, Madame Gabriel Luizet, Charles Lefebvre, and Marie Rady. In class 13, for six of any one variety, Mr. E. M. Bethune was first with La France. There were a number of fine stands exhibited in this class. In class 14, for Teas, Mr. E. M. Bethune was first with a good box containing amongst others a nice bloom of Grace Darling, and in the class for six Teas Mr. W. D. Freshfield was first with Maréchal Niel, Madame Lambert, Catherine Mermet, Souvenir d'un Ami, Caroline Kuster, and Perle de Lyon. The gold medal of the N.R.S. for the best box in the Show was awarded to Mr. Slaughter, the silver medal for the best box in the local classes.—D., Deal.

NEW BRIGHTON.—JULY 4TH.

This was held on the date named at St. George Mount, New Brighton, belonging to W. Bell, Esq., the active Hon. Sec., and a good one it was. The entries in the amateurs' classes especially were not so numerous as last year, owing to the very early appointment of the Exhibition, especially when the district is considered and the late season; for last year the Show was only one day later, and the entries were much more numerous. As an instance of the lateness of the season around Liverpool, mention may be made of the fact that at the day of the Show the Secretary had only about half a dozen Roses in bloom in his garden, whereas last year he staged in several classes. It was important, too, for the Liverpoolians that the Show should be held on the Saturday; indeed, this was essential to insure the success of the venture. The difficulty was, therefore, to arrange the time without clashing with other Shows; but although the exhibits were not so strong numerically, the character of most was first-rate, both in the amateur and nurserymen's classes. As is his wont, Mr. T. B. Hall scored the highest distinction in the former, his blooms being in excellent form and colour. The stands of Teas and Noisettes could not be over-praised; indeed, we doubt whether the Exhibition held at the Crystal Palace the same day included any finer than those culled from the Liverpool district, as murky and often unless as it is. They were simply perfection. Judging from the patronage at the early hour we left the ground we should think the affair a success in every way.

NURSERYMEN'S CLASSES.—In the premier class for forty-eight blooms, each one distinct, there were two magnificent collections staged, almost equal honours were merited. Messrs. Cranston & Co., Hereford, were first, their flowers having an advantage in colour and earliness. The second prize was awarded to Messrs. F. & A. Dickson, Upton Nurseries, Chester, who staged a superb collection, the colours being more diversified than in the Hereford stands. The following varieties constituted the leading collection. Back row.—Merveille de Lyon very fine, Mdle. Marie Rady, Mad. Hippolyte Jamain, Fisher Holmes grand, Pride of Waltham, Dupuy Jamain, Lady Mary Fitzwilliam, Mad. Chas. Crapelet, Alfred Colomb, Earl of Pembroke, Lælia, Mad. Chas. Wood a magnificent bloom, Constantine Tretia-koff, Violette Bouyer, Duke of Edinburgh, and Le Havre. Second row.—Sultan of Zanzibar, Mad. Gab. Luizet, Dr. Andry, Madame Thérèse Levet, Mons. E. Y. Teas splendid, Gloire de Dijon, Rosieriste Jacobs, Antoine Ducher, Henrich Schultheis, Baroness Rothschild, Mrs. Jowitt, Mons. Alfred Dumesnil, Auguste Neumann, Beauty of Waltham, Mad. Bravy, Alfred K. Williams fine. Front row.—Marquise de Castellane, Jules Chretien, Duchesse de Vallombrosa, Duke of Wellington, Monsieur Noman, Barthélemy Joubert, Mdle. Marie Cointet, Lord Macanlay, Elie Morel, Mad. Ducher, Marquise de Mortemart, Mons. Etienne Levet, Souvenir d'un Ami, Maurice Bernardin, Annie Laxton, Marguerite de St. Amand excellent. The finest flowers in Messrs. F. & A. Dickson's collection were Lady Mary Fitzwilliam, Mdle. Eugénie Verdier, Mad. Hippolyte Jamain, Crown Prince, Ulrich Brunner fils, Annie Laxton, Princess Beatrice, Mdle. Veuve, Alexandre Pommery, Merveille de Lyon, A. K. Williams, Baroness Rothschild, and Niphotos, all of which were as fine as could be desired.

For twelve varieties, three blooms of each, the same exhibitors staged very fine lots. Messrs. F. & A. Dickson of Chester were this time well to the front with the following varieties, nearly all in first-rate condition:—Monsieur Noman, François Michelin, La France splendid blooms, Ulrich Brunner fils, Merveille de Lyon very large and perfect, Emily Laxton, Madame Gabrielle Luizet, Madame Laurent, Lady Mary Fitzwilliam excellent, Annie Laxton, Elie Morel, and Marquise de Castellane. The best truss in Messrs. Cranston's collection were Merveille de Lyon, Madame Chas. Wood again unusually fine, Mons. E. Y. Teas, Madame Furtado, Comtesse de Paris, and Maurice Bernardin. For twelve Teas or Noisettes Messrs. Cranston were first, theirs being the only collection staged; the best flowers were Devoniensis very good, Madame H. Jamain, Comtesse Riza du Parc and Madame Willermoz. For twelve named varieties, open only to nurserymen in the Wirral district, Mr. S. Johnson of Oxtun was first, the only lot staged.

AMATEURS' CLASSES.—In that provided for twenty-four varieties, single blooms, for which the National Rose Society's gold medal and £2 in cash was the first prize, the premier award fell to T. B. Hall, Esq., Larchwood, Rock Ferry, who staged a first-class collection, some extraordinarily fine for so early in the season. Back row.—Marie Baumann especially good, Madame Gabrielle Luizet, Olivier Delhomme, Perle des Jardins, Marquise de Castellane, Innocente Pirola splendid, A. K. Williams, Annie Laxton extremely fine. Middle row.—Lady Mary Fitzwilliam, Charles Lefebvre, Catherine Bell a splendid light Rose, Souvenir d'Adolphe Thiers, Dingé Conard very good, Mons. Noman, Violette Bouyer, Général Jacqueminot,

Long Bacon, Reine Marie Henriette, Duke of Wellington, Marie Van Houtte, Constantin Tretiakoff, Safrano, Comtesse d'Oxford, and Madame Noman. The second collection was staged by Rev. L. Garnett, Christleton, Chester, whose best flowers were Catherine Mermet, Baroness Rothschild excellent, Marie Van Houtte, François Michelin, Marie Finger, and La France, a magnificent bloom. Mr. Hall was again first for eighteen varieties, and Rev. L. Garnett of Christleton second, both staging good lots. The premier collection were excellent, particularly the following:—Gloire de Dijon, Madame Gabrielle Luizet, Marie Banmann, Catherine Bell, Souvenir de Malmaison, and Dingee Conard. For twelve blooms, any light variety, and a similar exhibit of any dark variety, Mr. Hall was first in each class, staging Catherine Bell and Dingee Conard respectively, both stands being very fine, particularly the twelve dark blooms, Dingee Conard being a very fine variety.

For twelve Tea or Noisette varieties the National Rose Society's silver medal, in addition to cash, was offered. Three superb stands were staged, any of which merited the leading prize. The first award, however, fell to Eeroyde Claxton, Esq., Allerton, whose blooms were magnificent, the collection included the following:—Caroline Kuster, Madame Cusin, Princess of Wales, Souvenir d'Elise Vardon, Alba Rosea, Comtesse de Nadaillac, Souvenir d'un Ami, Innocente Pirola, immense; Madame Hippolyte Jamain, Catherine Mermet, David Pradel, Amazone. Second, T. B. Hall, Esq., with a splendid lot; Innocente Pirola, Perle des Jardins, President, and Marie Van Houtte were especially good.

In the class for six varieties M. Bullay, Esq., was a good first with splendid blooms of Madame Cusin, Innocente Pirola, very large; Souvenir d'Elise, Marcellin Rhoda, Etoile de Lyon, and another not named; and W. Hall, Esq., second.

The miscellaneous exhibits added materially to the attractions of the Show, notably the three boxes of Roses, thirty-six varieties of herbaceous Pæonies and hardy flowers staged by Messrs. James Dickson & Son, Newton Nurseries, Chester. We scarcely knew which to admire most, the Pæonies or Roses, but the palm must be given to the queen of flowers. Messrs. F. & A. Dickson, Chester, staged an admirable collection of twenty-four Pæonies, which were greatly admired. Mr. S. Johnson, South Grove Nurseries, Oxton, had a fine group of foliage and flowering plants, Palms, Crotons, Dracænas, Pelargoniums, Gloxinias, Rhodanthe Manglesi, Lilium eximium, &c., as well as boxes of Pæonies, Pelargoniums, and Roses. Eeroyde Claxton, Esq., Allerton, showed a beautiful stand of ten Roses; especially praiseworthy were twelve blooms of Madame Cusin, also David Pradel and Madame H. Jamain.

CARDIFF.—JULY 1ST.

THIS was held in the Drill Hall, Cardiff, on July 1st. It was the fifth annual Show, and the only real Rose Show held in Wales. At the first, we can remember, the exhibits were very few and the attendance small—not by any means an encouraging beginning, but this did not deter the indefatigable Hon. Sec., Mr. Pettigrew, and a well organised Committee from pushing on with their good work, and the Show under notice was a great success in every respect, there being numerous exhibitors, local, and from a distance, a gorgeous display of blooms, and a good attendance of the public. The Hall is a spacious one, well lighted, and admirably adapted for a flower show and promenade. The Roses occupied two rows of tables in the centre, and others were staged along the sides, and the floral display was greatly enhanced by lines and groups of beautiful flowering and fine-foliaged plants from Cardiff Castle. These were a show in themselves, and added much to the general effect.

Coming to the Roses, we need not give a list of the names of the blooms in each collection, as these included all the best forms in cultivation, conspicuous amongst which were Duchess of Connaught, Lady Mary Fitzwilliam, Duke of Albany, Countess of Pembroke, Merveille de Lyon, White Baroness, Earl of Pembroke, Mary Pochin, Abel Carriere, Alfred Colomb, Duchess of Bedford, Marie Baumann, Marquise de Castellane, Violet Bowyer, Alba Rosea, Jean Ducher, Madame Lambard, and Princess of Wales. These were the cream, and a grand cream too. Merveille de Lyon was shown in many of the stands; the Cranston Company, Hereford, exhibited a special box of it, and in every instance it was magnificent. One local nurseryman, Mr. Crossling of Penarth, had it so fine that a visitor was so captivated that he ordered a dozen plants there and then. La France was numerous and much admired; A. K. Williams, although there in plenty, gave one the impression of being a too-much-praised Rose.

Local nurserymen and exhibitors generally from South Wales hardly came up to their opponents from Bath, Torquay, Hereford, and other places, the lateness of the season telling very much against the former. One extensive Rose-grower near Cardiff told us he had not a bloom open three days before the Show, and it was only after twenty-four hours' sunshine on the two preceding days that he was enabled to cut a few dozens. This shows the disadvantage under which many exhibited, and yet it must be understood their exhibits were far from discreditable; indeed many of those who have shown since the Society exhibited have grown with it, and would, under favourable conditions, hold their own in any part of the country.

In the nurserymen's class, open, for forty-eight varieties, Messrs. Cranston, Hereford, were first; Messrs. Curtis, Sanford & Co., Torquay, second; and Mr. Stephen Treseder, Ely Road Nurseries, Cardiff, third. For twenty-four varieties Messrs. Cranston, Treseder, and Crossling were the prizewinners. In the South Wales open class for thirty-six varieties Mr. Steven Treseder was first, and Mr. Crossling, Penarth, a close second. In the open amateurs' class for twenty-four varieties Mr. J. Grant, Hope End, Ledbury, was a capital first with large finely formed, beautifully coloured blooms, which also gained him the gold medal of the National Rose Society; Mr. Pettigrew was a close second with well shown blooms. In the twelve varieties Mr. S. P. Budd, Bath, was first with excellent blooms, Mr. Grant, second, and Mr. Pettigrew, third. The above class was for three trusses of each variety. In the single twelves the Rev. H. Arkwright, Leominster, was first, Mr. Pettigrew second, and Mr. Budd third. In the groups of twelve blooms of one variety the honours were pretty well divided between Mr. Grant, Mr. Budd, Mr. Hobbs, Bristol, and the Rev. H. Arkwright.

In the amateur class, open to South Wales and Monmouthshire, the first prize for twenty-four varieties was taken by Mr. Moor, Cardiff, who also

secured the silver medal of the National Society with uncommonly fine blooms; Mr. Ryder, Cardiff, was second, and Mr. Pugsley, Penarth, third. In the class for twelve Mr. Fisher, Cardiff, was first, Mr. Pugsley second, and Mr. Armatage, Llandaff, third. Besides these gentlemen Mr. Case of Rumney secured some of the smaller prizes which followed in this section. The handsome prizes offered by the Marquis of Bute for the best box of blooms of the York-and-Lancaster Rose brought out some keen competition, Colonel Lee, Cardiff, being first, Mr. Moor second, and Mr. Pettigrew third, with a charming lot of buds which we preferred to the full open blossoms. The special prizes offered by the Mayor of Cardiff, Messrs. Treseder, Mr. Crossling, Mr. Thomas, Mr. Case, and others, were well competed for, the exhibitors being numerous, and the exhibits of considerable merit. Some very pretty bouquets were shown, and many dishes of Strawberries, as well as some new honey, the whole of which added greatly to the interest of a good and well managed Show.—A VISITOR.

BATH.—JULY 2ND.

OWING to the backwardness of the season a very superior display of cut Roses was hardly looked for at this early fixture, but on the whole the Committee had every reason to congratulate themselves upon the success of the meeting. A liberal list of prizes succeeded in attracting most of the leading nurserymen, including Messrs. Paul & Son, Cheshunt; B. R. Cant, Colchester; Keynes, Williams, & Co., Salisbury; Curtis, Sanford, & Co., Torquay, and the Cranston Nursery Company, and although none of these was able to exhibit in their usual superior style they yet made a very good fight for the premier positions. Local growers, including Messrs. George Cooling & Son, and S. P. Budd, Esq., were also very successful, while among amateurs from a distance the most conspicuous in the prize list were T. W. Girdlestone, Esq., Sunningdale, Berks; Captain Christy, Sidmouth; and Miss Watson Taylor. The weather was brilliantly fine and the attendance apparently very large as usual at Bath under similar circumstances.

NURSERYMEN'S CLASSES.—Four lots of seventy-two trusses, distinct, were shown, Mr. B. R. Cant being easily first. Included were fine fresh blooms of Prince Arthur, Madame Marie Cointet, Madame Ducher, A. K. Williams, Niphetos, Sultan of Zanzibar, Jean Ducher, Countess of Rosebery, Heinrich Schultheis, Madame Gabriel Luizet, Charles Lefebvre, Madame C. Kuster, Dupuy Jamain, Lady Mary Fitzwilliam, Mons. Alfred Dumesnil, Mons. E. Y. Teas, Souvenir d'Elise, Marie Baumann, La Boule d'Or, A. Colomb, Countess of Pembroke, Xavier Olibo, Annie Laxton, Reynolds Hole, Mdlle. Julie Dymonier, La Duchesse de Morny, and Marquise de Castellane. Messrs. Paul & Son were second, their stands containing many good blooms. Messrs. Keynes, Williams, & Co. followed closely.

With thirty-six triplets, distinct, there were the same number of competitors, and with these Messrs. Paul & Son took the lead, some of the best represented varieties being Horace Vernet, Heinrich Schultheis, Merveille de Lyon, Countess of Oxford, Madame Gabriel Luizet, La France, Prince Arthur, Grandeur of Cheshunt, C. Lefebvre, François Michelin, A. K. Williams, Captain Christy, E. Y. Teas, Ulrich Brunner, Mdlle. Prosper Laugier, Etienne Levet, Pride of Waltham, Camille Bernardin, and Senateur Vaisse. Mr. B. R. Cant was a good second. Messrs. Keynes & Williams were again a creditable third with varieties very similar to those in the other collections.

The best eighteen triplets were staged by Messrs. Curtis, Sanford, and Co., and among these were some of the finest blooms in the Show. Very good were General Jacqueminot, Marguerite de St. Amand, Duke of Edinburgh, Duchesse de Morny, Marquise de Castellane, Merveille de Lyon, Alfred Dumesnil, Marie Baumann, Mdlle. Gabriel Luizet, and Ulrich Brunner, a perfect bloom of the latter being awarded the silver medal of the National Rose Society offered for the best Hybrid Perpetual. Messrs. George Cooling & Son were a very creditable second, their best being Lady Mary Fitzwilliam, Dr. Sewell, Etienne Levet, Julia Touvais, Madame Victor Verdier, La France, Maréchal Niel, and Marquise de Castellane. Mr. J. Mattock, Oxford, was third. Messrs. Curtis, Sanford, & Co. were also first with eighteen trusses, distinct. Messrs. Cooling & Son followed with medium-sized fresh examples, and Mr. G. Mount was third, several others exhibiting creditably.

The competition with eighteen Teas or Noisettes, single trusses, distinct, was close and good. Mr. B. R. Cant took first prize with a generally excellent collection, consisting of Maréchal Niel, Souvenir d'Elise, Jules Finger, Innocente Pirola, Comtesse de Nadaillac, Souvenir de Paul Neyron La Boule d'Or, Madame Caroline Kuster, Devonensis, Catherine Mermet Niphetos, Jean Ducher, Souvenir d'un Ami, Hippolyte Jamain, Anna Ollivier, Etoile de Lyon, Marie Van Houtte, and Moire. Mr. J. Mattock was a good second, his stand including lovely blooms of Amazone, Devonensis, Paul Labonte, Rubens, Marie Van Houtte, and Perle des Jardins. The third prize was well won by the Cranston Company.

AMATEURS' CLASSES.—With thirty-six distinct varieties, single trusses, Mr. T. W. Girdlestone was easily first, many of his blooms being very substantial and good in colour. The best were Capitaine Christy, Maurice, Bernardin, Sultan of Zanzibar, Mary Bennett, A. K. Williams, Duke of Teck, Nachury, Baronne de Rothschild, Marie Finger, Lady of the Lake, Violette Bouyer, Mrs. Baker, La France, Crown Prince, Charles Lefebvre, Etienne Levet, Maréchal Valliant, Madame Gabriel Luizet, and Merveille de Lyon. Mr. S. B. Budd was a very good second, his blooms being somewhat smaller, but of good colour; and Miss Watson Taylor was third. Captain Christy took the lead with twenty-four trusses, distinct, having fairly good examples of La France, Abel Carriere, A. K. Williams, Duke of Edinburgh, E. Y. Teas, Thomas Mills, Maréchal Niel, and Dupuy Jamain. The Rev. C. Eddy, Bramwell Rectory, was a good second, and Mr. A. Evans, Oxford, third, and there were five other lots staged.

Mr. T. W. Girdlestone staged the best twelve triplets, distinct, his very creditable lot including Ulrich Brunner, La France, A. K. Williams, and other good sorts. Mr. S. P. Budd was a good second, and Miss Watson Taylor third. With six triplets, distinct, the prizewinners were the Rev. C. Eddy, Captain Christy, and Mr. J. Smith, Warminster; and with six singles, distinct, Mr. G. Tanner was first, Mr. J. Wills second, and the Rev. C. C. Layard third.

The best twelve Teas or Noisettes, single trusses, distinct, were staged by Mr. T. W. Girdlestone, this including very good blooms of Marie V Houtte, Rubens, Jean Ducher, Souvenir d'un Ami, Anna Ollivier, Souv

d'Elise, Madame Margottin, Catherine Mermet, Belle Lyonnaise, and Niphetos, the last-named being also selected for the award of a silver medal for the best Tea in the Show. Miss Watson Taylor was a good second, and Mr. J. Grant, Hereford, third. With six Teas the prizewinners were Messrs. Narroway of Oxford, J. Smith, and G. Tanner.

LOCAL AMATEURS' CLASSES.—The competition in these was surprisingly poor, and Mr. S. P. Budd easily secured the award of the National Society's gold medal for a stand of twenty-four distinct varieties, included among which were good examples of Ulrich Brunner, Lady Mary Fitzwilliam, Dupuy Jamain, Countess of Rosebery, Merveille de Lyon, and Duke of Teck. The winners with twelve distinct varieties were Mr. F. Clerk, Rev. G. E. Gardiner, and Mrs. Horne, and with nine Teas Mr. S. P. Budd was again successful.

OPEN CLASSES.—In the classes for stands of one variety the competition was close, and many fine blooms were staged. There were twelve stands of twelve trusses of any Rose, Messrs. Paul & Son being placed first with Ulrich Brunner in fine condition. Miss Watson Taylor followed with a creditable lot of Catherine Mermet, and equal thirds were awarded to Mr. Cant and the Cranston Company, who respectively staged Marie Cointet and Merveille de Lyon, the latter being much discoloured. A moderately good stand of Maréchal Niel staged by Mr. Evans won the first prize for any yellow variety, the Cranston Company following with the same variety, and Miss Taylor was third with fairly good Belle Lyonnaise. The best stand of any crimson variety, Marie Baumann, fresh, and of good size, was staged by Mr. Cant, Curtis, Sanford & Co. following with Alfred Dumesnil, and the third prize went to the Cranston Company for A. K. Williams. Mr. Cant won the first prize for any pink variety with a good stand of the lovely Mdle. Gabriel Luizet, Messrs. Paul & Son following with the same variety, the third prize going to Mr. S. P. Budd for La France.

In the class for any new Rose of 1883 or 1884 Messrs. Curtis, Sanford, and Co. were easily first for Alphonse Soupert in excellent condition, the Cranston Company following with Merveille de Lyon, and Mr. Mattock was third with Lady Mary Fitzwilliam, which happened to be sent out in 1882.

As usual a large number of bouquets of Roses were staged. Messrs. Cooling & Son had the best twelve, these being very fresh and relieved with Moss Rosebuds and Rose foliage. The second prize lot staged by Mr. Mattock were very formal. Mr. W. C. Drummond, Bath, was third. In the amateurs' classes for six bouquets Miss W. Taylor was first; Mr. Warden, Glarendon Park, Salisbury, second; and Mr. J. Stuckey third, all displaying good taste. Messrs. Cooling & Son were also first for the most tastefully arranged basket of Roses, Mr. Mattock being second, and W. C. Drummond third.

FARNINGHAM.—JULY 1st.

In this pleasant little piscatorial village on the Darenth the annual Show of Roses was held on Wednesday last, July 1st. With it was combined also a show of plants, table decorations, and cottagers' productions; but the Roses were the *pièce de résistance*, and although not equal in extent or quality of blooms to that of last year, a pretty show was brought together. The only nurseryman from a distance who exhibited was Mr. B. R. Cant from Colchester, but amateurs were fairly represented by those in the neighbourhood, where several good rosarians cultivate the queen of flowers. It ought to be a good district, and one was not surprised to see many good stands; still there was nothing that shone out pre-eminently above the others—no such Horace Vernets as Mr. Pemberton exhibited last year, or such blooms as Mr. Wakeley showed at Canterbury of Xavier Olibo. The Rev. F. R. Burnside, to whom the Society owes its existence, but who has now removed to Gloucestershire, brought his Roses from the western county and showed exceedingly well, while Mrs. J. M. Fuller of Bexley was rewarded for the care she bestows on her favourite flower by securing two first prizes.

In the class for thirty-six blooms, open to all comers who are members of the Society, Mr. B. R. Cant was easily first with a box containing the following flowers:—Marquise de Castellane, Catherine Mermet, John Hopper, Lady Mary Fitzwilliam, Edouard Morren, Madame Lacharme, Violette Bonyer (which has as yet this year been everywhere shown well), Beauty of Waltham, Niphetos (a very large bloom, reminding one of that shown by Mr. Jowitt some years ago at the Crystal Palace), Marie Baumann, Madame Marie Cointet, Dr. Sewell, Madame Alfred Dumesnil, Maurice Bernardin, Général Jacqueminot, Madame Bravy, Henri Schultheis, Ulrich Brunner, La France, Madame Isaac Pereira, Madame Ducher, Mdle. Eugénie Verdier, Mrs. Baker, Marie Verdier, Duchesse de Vallombrosa, Charles Lefebvre, Madame Gabriel Luizet, Dr. Andry, Maréchal Niel, François Michelin, Duke of Teck, Annie Laxton, Souvenir d'Elise, Prince Arthur, and Dupuy Jamain. The second prize was awarded to Messrs. Longley of Rainham, and the third to Messrs. George Bunyard & Co., Maidstone. For twelve Teas Mr. R. B. Cant was again first with Comtesse de Nadailac, Souvenir d'un Ami, Marie Van Houtte, Catherine Mermet, Etoile de Lyon, La Boule d'Or, Madame Angèle Jacquin, Madame Hippolyte Jamain, Caroline Kuster, Niphetos, Maréchal Niel, and Souvenir d'Elise. Messrs. Longley were second, and Messrs. George Bunyard & Co. third. In the class for twenty-four varieties for amateurs and gardeners, Mr. W. H. Wakeley was first with an excellent stand containing Henri Ledeaux, Ferdinand de Lesseps, Marguerite de St. Amand, Dr. Andry, Caroline Kuster, Thomas Mills, Maréchal Niel, Marie Baumann, Charles Lefebvre, Madame Gabriel Luizet, Captain Christy, John Bright, Eugène Fürst, Innocente Pirola, Violette Bouyer, Duke of Edinburgh, Abel Carrière, Marie Van Houtte, Louis Van Houtte, Marquise de Castellane, Étienne Levet, François Michelin, Camille Bernardin, and Catherine Mermet. Mr. G. Christy was second, and Lord Stanhope third. In the class for twelve varieties Mr. R. E. West was first with François Michelin, Duke of Teck, Prince Camille de Rohan, Marie Finger, Baroness Rothschild, Abel Carrière, Annie Wood, A. K. Williams, Madame Eugène Verdier, Violette Bowyer, Madame Victor Verdier, Baroness Rothschild. The Rev. J. R. Burnside was second, and Mrs. Spottiswoode third. In the class for nine Teas the Rev. F. R. Burnside was first with a fresh and clean stand, consisting of Souvenir de Paul Neron, Hon. Edith Gifford, Jean Ducher, Souvenir d'un Ami, Madame Bravy, Madame Hippolyte Jamain, Rubens, Madame Willermoz, and Catherine Mermet. Mr. Julius Sladden of Badsey, Evesham, was second, and Mr. Wallis third. In the class for six of any one dark Rose Mr. R. E.

West was first with Annie Wood, Mr. G. Christy second with Duke of Edinburgh, and Earl Stanhope third with Charles Lefebvre. For the best six of any light Rose Earl Stanhope was first with La France, Mr. Wakeley second with Madame Gabriel Luizet, and Mrs. Fuller third with La France.

For the best twenty-four for amateurs and gardeners residing within ten miles of the village of Farningham Mr. J. Burnaby Atkins was first with La France, Duchess of Vallombrosa, A. K. Williams, Marguerite de St. Amand, Marie Rady, Alfred Colomb, Duke of Edinburgh, Edouard Morren, Louis Van Houtte, Horace Vernet, Marie Van Houtte, E. Y. Teas, Madame Victor Verdier, Jean Ducher, Maréchal Niel, Maréchal Vaillant, Madame Clémence Joigneaux, Madame Gabriel Luizet, Charles Lefebvre, Heinrich Schultheis, Marquise de Castellane, Comtesse d'Oxford, and Marie Baumann. The prize for the best twelve was awarded to Mrs. J. M. Fuller for a very beautiful stand, also for the best six Teas. The bronze medal for the best box in the open classes was awarded to Mr. W. H. Wakeley, the silver medal for the best box in the local classes to Mr. F. Burnaby Atkins, and for the best Rose in the amateur classes to Mr. W. H. Wakeley.—*D., Deal.*

CYMBIDIUM LOWIANUM.

SOME time ago we received a magnificent raceme of this Orchid from Dr. A. Paterson, who, amongst his other treasures, grows it uncommonly well in his Bridge of Allan collection. A reduced representation of this is given in fig. 5, page 28, but no real idea of its beauty can be conveyed in a wood engraving. The species has become a great favourite with growers chiefly on account of the great length of time the flowers last, which is astonishing, for some plants have been in good condition for fully six months; and a specimen which opened its flowers at Christmas was shown at one of the summer exhibitions of the Royal Botanic Society, when it was as fresh and beautiful as anyone could wish. The long racemes also have a graceful appearance, arching over the sides of the pots, especially when a slight support is afforded them. The flowers cannot be termed brilliant, but they are very striking, and the contrast of the yellowish or creamy sepals and petals with the reddish brown lip renders them remarkable. For exhibition the plant is admirably adapted, as it suffers much less than many of its relatives; and at the Orchid Conference in May it was very strongly represented.

VEGETATION AND FRUITS OF NEW BRITAIN.

AN interesting essay was read a short time since before the Society of Arts by Mr. Wilfred Powell, and in the course of a very full description of the customs of the inhabitants he thus refers to the vegetable products:—

The fruit of Duke of York Island consists of the Banana, Cocoa-nut, Tan, Mummy Apple, and a description of wild Mango. Yams and Taro are also grown on the island, but Sweet Potatoes are the chief product, and serve as one of the main articles of trade between this and the other islands. The Bananas also are in some parts of the island very fine, but the Yams and Taro are not to be compared with those of New Britain, or the Yams of New Ireland, which are noted for their large size. The Taro of New Britain is also considered the finest in the South Seas. Taro is a large bulb-like tuber, with leaves much of the shape of the Caladium. I have never seen the flower. There are two different kinds, one of which grows in swampy ground, and the other on the hill sides; the latter is the largest and best, the swamp Taro being waxy to eat. Taro is planted in rows about one pace apart, and is kept clear of weeds by the women; the hill Taro grows to the size of 15 inches long by 1 foot circumference. When cooked in a small quantity of water the starch that exudes from it makes the water into a thick paste, therefore it requires more water added continually, and when cooked is soft and mealy, and is one of the very best vegetables I have even eaten. The native way of cooking it is even better than boiling; the outside rough brown coating is scraped off with a sharp shell, and after cutting the Taro in halves lengthways, it is wrapped up in Banana leaves and placed on a fire where it is not too hot; when cooked it is much like good new bread, and is excessively nutritious. After taking the Taro out of the ground the tuber is cut off, leaving about an inch still adhering to the stalks and leaves, this is again placed in the ground, and in about three months has another large tuber ready for cutting. The leaves are terribly astringent, and are eaten raw, will take the skin off the mouth and render it very sore for some days, but the young leaves cooked are very delicious.

There is also a fruit called the "Tan," which I do not suppose many Europeans know much about. It grows on very high trees, whose wood, by the way, is beautifully grained and very hard, though nice to work. The fruit is shaped much like an Apple, and also grows in bunches as some Apples do; but if you take one in your hand and press it when ripe the skin will come clean off, and the inside is then found to be beautifully clear jelly-like substance, which when placed in the mouth melts into water. This jelly surrounds a brown stone, of which the natives make a sort of cake, after it has been soaked for some days. The "Papau," or Mummy Apple, has also some curious facts connected with it that are useful to know. The very young Apples when boiled make a most delicate substitute for Vegetable Marrow; the stalks and leaves if boiled with clothes will render them beautifully clean and white; they come out of the boiler a bright gamboge yellow, but when hung up to dry in the air they turn perfectly white again; a small piece of the leaf or stalk boiled with an old fowl or tough piece of meat makes it quite tender.

HORTICULTURAL SHOWS. CROYDON.

THE eighteenth summer Show was held on the 1st inst. in the grounds of Wellesley House, kindly placed at the disposal of the Committee for the

occasion by J. S. Balfour, Esq., M.P. This Show was a great success both as a display and also financially, and extra space had to be provided to accommodate the large number of entries. As a rule the classes were well filled, the extraordinary quantity of Roses testifying to the popularity of the queen of flowers in the Croydon district, and local exhibitors being well to the front. There were no less than 120 feet run of tables occupied by stands and boxes of Roses, besides many detached lots for display and competition. In the open class for Roses, forty-eight blooms, distinct, the first prize went to Cheshunt, Messrs. Paul and Son's lot including extra good blooms of *Senateur Vaisse*, *Marquise de Castellane*, *S. Reynolds Hole*, *Madame Gabriel Luizet*, *Xavier Olibo*, *La Duchesse de Morny*, *La France*, *Merveille de Lyon*, *François Levet*, *Maurice Bernardin*, *Sultan of Zanzibar*, and *Abel Carrière*. The second prize was taken by Mr. W. Rumsey, Waltham Cross, with, amongst others, excellent samples of *Madame Gabriel Luizet*, *Princess Beatrice*, *Heinrich Schultheis* (grand), *Marguerite Brassac*, *Madame Sophy Fropot*, *Julius Finger*, *Edouard Morren*; and the third prize by G. Bunyard & Co., Maidstone, with a very even lot, including most of the above. In the class of twenty-four H.P.'s, Messrs. Paul, Bunyard, and Rumsey stood in the rotation given; whilst for twelve Teas, distinct, Mr. G. W. Piper, Uckfield, stepped into the first place with excellent blooms of *Jean Pernet*, *Madame Bernard*, *Belle Lyonnaise*, *Annie Ollivier*, *Souvenir d'un Ami*, *Catherine Mermet*, and others; Messrs. Bunyard taking second with, amongst others, good blooms of *Jean Ducher*, *Perle des Jardins*, *La Boule d'Or*, *Comte de Paris*, and *Madame Willermoz*. For twelve Roses, one variety, Messrs. Bunyard secured the premier place with splendid blooms of *Lady Mary Fitzwilliam*, a grand light flesh Rose, rather after the style of old *Baroness Rothschild*; Messrs. Paul being second with a good even stand of *A. K. Williams*.

For the National Rose Society's silver medal for the best Rose bloom in the Show exhibited by gardeners or amateurs, a perfect bloom of *Etienne Levet* was selected for the much-coveted honour, in the stand of twenty-four set up by Mr. H. Simmons, gardener to Rev. H. C. Hales, Woodman-court; whilst the Society's bronze medal was gained by Rev. W. Wilks, of Shirley, with a magnificent bloom of *La France*, in each case another bloom of the same variety running the winner very close.

In the open class competition for a group of plants staged for effect, Mr. H. James, Lower Norwood, took the first prize with a fine group of Orchids, including some very rare specimens of *Cattleyas* and *Masdevallias*, *Palms*, *Crotons*, *Dracenas*, &c.; Mr. T. Butcher, South Norwood, whose staging was very neat, running very close for second place, and only wanting in Orchids to have exchanged with Mr. James; Mr. Chaff, Park Hill Nursery, being a good third, but displaying rather too much colour for effect. Mr. James also took the first for six Orchids, which included a rare plant of *Epidendrum vitellinum*, carrying upwards of 100 blooms, a very fine *Aerides odoratum purpurascens*, and an equally good *Odontoglossum cordatum aureum*. The second six Orchids were highly creditable to Mr. Penfold, gardener to Canon Bridges, Beddington House, and included a rare plant of *Vanda tricolor*, extra good for the season, and a fine *Phalænopsis amabilis*; whilst Mr. A. Luff, gardener to R. R. Wyatt, Esq., Streatham, showed for third prize a good *Cypripedium Parishii*, a fair *Cattleya Warneri*, and some others.

The contest for nine stove and greenhouse plants in flower was an easy walk over for Mr. James, and his group had in it a very well-bloomed *Stephanotis* that would be hard to match, and excellent specimens of *Kalanthes coccinea*, *Erica ferruginea*, *Anthurium Schertzerianum*, *Ixora Williamsi*, &c. For the nine foliage plants, Mr. W. King, gardener to P. Crowley, Esq., Waddon House, was a good first with healthy clean specimens of *Crotons*, *Dracenas*, *Asparagus tennissimus* (the latter a grand specimen), *Palms*, &c. Second, with very large specimens, was Mr. Penfold with a fine *Cycas revoluta*, *Pandanus*, *Anthurium crystallinum*, and other well-grown plants; and Mr. James here had to content himself with the third prize, though setting up a really good group, including a grand plant of *Dracena Baptisti*, *Croton Wiesmanni*, and a fine old plant of *Macrozamia Dennisoniana*. In *Dracenas* there was a strong contest amongst district gardeners and amateurs, Mr. W. King being placed first for excellent specimens of *D. Baptisti*, *D. amabilis*, *D. recurva*, *D. vivicans*, and *D. Gladstonei*. T. N. Penfold second with several of the above, only wanting size to quite equal them; and Mr. A. Luff third, his group having *D. Lindenii* and *D. Goldieana*, both very distinct and effective, and all being clean and bright, but rather small.

The collection of twenty-four bunches of cut flowers went to Mr. A. Alderman, gardener to C. Czarnikow, Esq., Mitcham, consisting of fine bunches and trusses of *Gloxinias*, *Orchids*, and other stove and greenhouse blooms. The dinner table was safe in the hands of Mrs. Butcher, South Norwood, who has been very successful this year in cut-flower decorations at first-class shows.

The show of fruit was rather small, but *Strawberries*, *Melons*, and *Grapes* were very commendable for the season, and Mr. A. Alderman staged *Black Hamburgs*, very neat, shapely, well-coloured bunches that would have held their own in a much stronger competition. His six *Royal George Peaches*, too, were even, well coloured fruits of excellent quality. *Cucumbers* were a very strong class, the first prize pair—Mr. Penfold's—being *A1*. For the collection of vegetables Mr. J. Radbourne, gardener to Baroness Heath, came in well first in a strong class. Mr. J. Laing's special prize for six *Tuberous Begonias* was also keenly contended for, the first prize going to Mr. Penfold with even well-grown plants in fine bloom, Mr. Brice taking second with a nearly equal half-dozen.

Mr. T. Squibb, gardener to Alderman Cooper, Mayor of Croydon, set up a very handsome group of flowering and ornamental plants for decoration, which the Judges very highly commended. Mr. J. Laing, Forest Hill, also made a very fine display with examples rarely equalled at a local show, his *Begonias* fully sustaining their world-wide reputation, and were greatly admired. Messrs. Cheal & Sons, Crawley, also sent for decoration a very fine group of herbaceous plants (cut spikes and trusses), and a first-class stand of *Roses*; Messrs. H. Coppin & Son had a good group of *Begonias*, &c.; Mr. T. Butcher, a neat group of flowering plants, *Palms*, and *Ferns*; and the Westerham Nursery and Seed Company a choice collection of cut flowers.

The management reflected great credit on Mr. A. C. Roffey, the Secretary, who was ably seconded by an active and very courteous Committee,

who all thoroughly appreciate their work, and do it well. The staging was entrusted to Messrs. J. Fewell, T. Kemsley, W. Neale, H. Pinyon, and G. Belton, and the results showed their high qualifications for that office. The Judges included Messrs. J. Laing; J. Peed, Tulse Hill; Legge, Wimbledon; W. Jordan, Crawley, for the open class. Rev. A. Cheales, and Messrs. Ridout, and J. Brown, Reigate, for cut flowers; and Mr. E. Morley, Mr. W. Rumsey, and Mr. G. W. Piper for gardeners' and amateurs' classes. During the day, which was fine and warm, though not sultry, the ground was thronged and the tents filled with a great and fashionable company, including all the *élite* of the neighbourhood and many strangers. Everything passed off most harmoniously, and the Show was altogether very enjoyable.

TUNBRIDGE WELLS.

ONE of the most extensive and beautiful shows in Kent is that which annually attracts so many exhibitors and visitors to Tunbridge Wells, and which as regards the quality of the contributions is entitled to rank amongst the best provincial shows in the home counties. There is a freshness about all the produce that is most pleasing at midsummer, and each section of classes, plants, flowers, fruit, and vegetables are invariably well represented, so that a most diversified Show is provided. The site chosen is also a very suitable one, and this is a matter of considerable importance in the success of a flower show. The Calverley Hotel grounds are pleasantly situated, and in them the tents were placed that were devoted to the plants, groups, and vegetables, while the large Public Hall contained the fruit, *Roses*, miscellaneous cut flowers, and floral decorations. In a few classes the competition was not quite so keen as at some previous shows, but this was chiefly notable in the fruit section, except the black *Grapes* and *Peaches*.

PLANTS.—Stove and greenhouse plants are always an interesting feature at the Tunbridge Wells Show, and that now being noted was no exception to the rule. The largest prizes are offered in the open class for eight distinct varieties—namely, £3, £6, and £1 as the first, second, and third prizes respectively. First honours were accorded to Mr. A. Gibson, gardener to T. F. Burnaby Atkins, Esq., Halstead Place, Sevenoaks, who had beautiful fresh neat specimens, not of great size, but compact, healthy, and well flowered. They comprised *Clerodendron Balfourianum*, *Ixora Williamsi*, *Dipladenia regina*, *Dipladenia amabilis*, *Anthurium Schertzerianum*, and *Clerodendron fallax*, with twenty panicles of its brilliant scarlet flowers. This very handsome plant is rarely seen so well shown as at this Exhibition, and it is rather surprising that so effective a plant for the summer exhibitions should be neglected, as it invariably attracts much attention when in good condition, though it would not perhaps possess the same value as a good *Erica*, *Statice*, or other hardwooded plant. Mr. T. Gilbert, Hastings, secured the second place with plants of similar size and freshness, and but few points behind the first. He had *Erica Cavendishiana*, *Clerodendron Balfourianum*, *Aphelexis macrantha rosea*, excellent; *Allamanda grandiflora*, *Dipladenia amabilis*, *Statice profusa*, *Allamanda Hendersoni*, and *Erica Exquisite*. Mr. Rann, Handcross Park Gardens, Crawley, followed, two of his best specimens being *Hedera tulipifera* and *Statice Gilberti*. There was also another open class for four plants, in which there were five competitors, Mr. Gibson being again the most successful, having *Ixora Fraseri* with large trusses, *Dipladenia amabilis*, *Anthurium Schertzerianum*, and *Allamanda Hendersoni*. Mr. Samuel Pope, gardener to J. F. Barran, Esq., Holmewood, Tunbridge Wells, was placed second, his best specimen being *Allamanda Hendersoni* with numerous large and handsome flowers. Mr. Rann's plants were good, but not quite so fresh as the preceding, *Stephanotis floribunda* of globular form and freely flowered. In the local classes Mr. Moorhouse was first with six specimens, staging well-grown plants; Mr. S. Pope also taking first with four specimens in the same section.

Foliage plants were shown by many exhibitors, and in the class for eight specimens there was only one entry—namely, from Mr. Rann, who won the premier prize for magnificent plants in exceedingly healthy condition. They comprised the immense *Cycas revoluta* which has so frequently taken a prominent place at exhibitions; *Croton angustifolius*, about 6 feet high and beautifully coloured; *Beaucarnea recurvata*, *Thrinax elegans*, an enormous *Phoenix tenus*, and *Croton Prince of Wales* well coloured. Mr. Rann was also first, showing his magnificent plants of *Gleichenia Mendeli*, *Cyathea Smithii*, *Gymnogramma chrysophylla*, *Thyrsopteris elegans*, *Cyathea dealbata*, *Gleichenia rupestris gigantea*, and *G. flabellata*; the large *Gleichenias* from Handcross Park are well known, and seldom are such specimens seen so fresh and healthy as they were at Tunbridge Wells. Mr. S. Pope took the second place, *Dicksonias antarctica* and *squarrosa* with *Leucostegia immersa* being uncommonly good in his collection. Mr. Moorhouse, gardener to J. W. Temple, Esq., Leyswood, Groombridge, was third, *Leucostegia immersa* being one of his best plants. Two admirable collections of hardy Ferns were shown by Mr. H. Scammell, gardener to C. Kilby, Esq., Nevill Park, and Mr. J. Allan, gardener to G. H. Fielding, Esq., Ashurst Park. In the first named the most notable species and varieties were *Struthiopteris germanica*, *Osmunda gracilis*, *Onoclea sensibilis*, *Onychium japonicum*, *Athyrium Filix-femina Fieldiae*, and *Polystichum angulare proliferum*, all very graceful. Mr. Allan had *Polystichum plumosum*, *Asplenium marinum*, and *Lastrea grandidens* in excellent condition. *Caladiums* were represented by moderate-sized plants, but well selected distinct varieties brightly coloured. Mr. Shoobridge, gardener to W. Edwards, Esq., Fern Bank, Tunbridge Wells, took the lead with *Chantini*, *Houlletii*, *Discolor*, *Whitei*, and *Tricolor*, very beautiful. Mr. J. Allan followed with smaller but neat examples of *Belleymei*, *Beethoven*, and *Rubricaulis*, Mr. Turner being third with *Meyerbeer*, *Herald*, and *Houlletii*. Foliage *Begonias* were well shown by Messrs. Scammell and Beilby.

The contributions in the smaller classes for *Pelargoniums*, *Begonias*, and *Achimenes* added materially to the beauty of the exhibition, forming a margin near the sides of the tent. The principal prizes were secured by Messrs. Allan, Beilby, Turner, Wilkins, and Shoobridge.

Groups invariably constitute an important feature in the Tunbridge Wells Show, one tent being entirely devoted to them. On this occasion there were six competitors, all of whom had tasteful groups, differing chiefly in the lightness with which the plants were arranged, as in choice of materials and combinations of colours there was little to favour any of them specially. Premier honours were awarded to Mr. G. Fennell, gardener

to Mrs. Cazalet, Tunbridge Wells, for a very pleasing contribution, flowering and foliage plants being well proportioned, the former consisting chiefly of Pelargoniums and Canterbury Bells; while of the latter there were tall Palms for the centre and back, with a foundation of Abutilon marmoratum, Asparagus, and Caladium argyrites, margined with Golden Selaginella, Impatiens Sultani, and Lobelias alternately. This group had a bright and graceful appearance, and was preferable to those with a greater number of flowering plants. Mr. Wilkins was second, also with a pretty group, but containing rather too many plants. Lilies, Alonsoas, and Briza maxima were freely employed with good effect. Mr. Bashford was third, Canterbury Bells, Gloxinias, and Adiantum gracillimum constituting the greater portion of the group. Mr. Aylward was fourth, Mr. Pope fifth, and Mr. Cooke, gardener to T. B. de Crawshay, Esq., Rosefield, Sevenoaks, sixth, the last-named having a very graceful arrangement which in the opinion of many persons deserved a higher position.

A charming group of Ferns not for competition was shown by Mr. F. Webber, Tonbridge, and attracted more admiration than all the others. It was in the style which some exhibitors have adopted at Brighton and other towns on the south coast, and like those with which Messrs. Birkenhead have delighted numerous visitors to the Manchester Show. The groundwork was formed of Adiantums and Pterises, with three mounds near the back also formed of Adiantums and Pterises chiefly, with a few Pterises, Platyceriums, and Blechnums in the centre. In the front were two smaller mounds, principally composed of Adiantum gracillimum and A. farleyense, all very healthy and most tastefully arranged. There was a coolness and repose about this group that was most refreshing in contrast with the brighter colours of the other groups.

CUT FLOWERS.—Roses had several classes devoted to them, and the competition was fairly good, though we have seen better blooms staged there. Amongst the amateurs Mr. Alfred Slaughter, Jarvis Villa, Steyning, who secured the premier prizes with twenty-four and twelve Hybrid Perpetuals, and the same position with twelve Teas. Mr. Ridout, gardener to T. B. Haywood, Esq., Reigate, following in each class, Mr. Shoesmith and Mr. Simmons taking the third prizes. In the two open classes bright and handsome blooms were staged, especially in the stand for forty-eight blooms from Mr. Piper, which was, however, very reluctantly disqualified for containing two blooms of Duke of Edinburgh, though the first prize had been awarded to it. Messrs. G. Bunyard & Co., Maidstone, were placed second, and the Judges did not alter the award after the first stand had been disqualified, though the blooms well merited a higher position under the circumstances. Messrs. C. F. Woolard & Son, Cooksbridge, Lewes, were placed third. With twenty-four blooms Mr. A. Slaughter was again victorious, Messrs. Bunyard and Co. following, their stand containing the best Hybrid Perpetual Rose in the open classes (Violette Bouyer), for which the National Rose Society's silver medal was awarded. Three handsome collections of miscellaneous cut flowers were shown by Messrs. J. W. Temple, Johnstone, and Waterman, who secured the prizes in that order, the first stand chiefly containing Orchids. Buttonhole bouquets, hand bouquets, and stands of flowers were strongly represented, Mr. Chard of Clapham Common winning leading honours.

FRUIT.—Black Grapes were excellently shown, and were much the best of the exhibits in the fruit classes. There were six competitors. Mr. Moorhouse deservedly won the leading prize with three handsome bunches, solid, compact, even, and well proportioned, the berries large and superbly coloured. Mr. Hopgood was second with large but looser bunches and larger berries excellently coloured. Mr. Morris, gardener to C. F. Ebdon, Esq., Baldoleo Place, St. Leonards, was third also with large bunches and berries, but not quite so well coloured. White Grapes were of rather indifferent quality. Mr. W. Harvey, gardener to C. L. Huggins, Esq., Whiteleaf House, Warlingham, led with Muscat of Alexandria fairly ripened. Mr. Wilkins was second with Foster's Seedling, and Mr. J. Gore third. Mr. Hopgood was first with a collection of fruit, staging three good Pines, black and white Grapes, Strawberries, Raspberries, Cherries, Melons, Peaches, and Nectarines. They were tastefully arranged on Vine leaves and moss. Mr. Fennell followed, white and black Grapes being his best dishes. Mr. Waterman was third with good examples of Buckland Sweetwater and Black Hamburg Grapes and a Queen Pine. Peaches, Strawberries, and Melons were also well represented, the exhibitors already mentioned taking the leading prizes.

VEGETABLES.—Three handsome collections of vegetables were shown in the open class, and so close were they in merit that it was only after very careful comparison that the Judges could determine their positions. Ultimately Mr. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, was awarded premier honours for most praiseworthy samples of Early Naples Onions, Early London Cauliflowers, Early Nantes Carrots, Culverwell's Telegraph Cucumbers, and Moore's Cream Vegetable Marrow. Mr. J. Gilmour, Seacox Heath, Hawkhurst, was second with a good and well-displayed collection. Mr. W. Johnstone, gardener to the Marchioness Camden, Bayham Abbey, was third.

The weather was very fine, and a large attendance of visitors rendered the Show as successful as could be wished.

SHEPPERTON.

LAST year a Society was formed in Shepperton, and the first Exhibition held about this time proved so satisfactory that it gave the promoters good hopes of a still farther advance another season. These anticipations were fully realised in the Show of last Thursday, and it appears very probable that the Exhibition will steadily increase in importance, and take its place amongst the foremost local shows around London. This year the Committee were especially fortunate in having, through the liberality of their President, Lieut.-Col. W. H. Harfield, the beautiful grounds of Sunbury Court placed at their disposal, and the success of the Show from a horticultural point of view was undoubtedly in a great measure due to this fact. There is much local enthusiasm concerning the Society, and several of the most prominent officers are ardent horticulturists, Major Lendy being especially energetic in his efforts to establish the Society, while Mr. H. Bennett, of "Pedigree Rose" renown, has also rendered important assistance both technically and pecuniarily. The Hon. Treasurer, Mr. E. Rutter, and the Hon. Secretary, Mr. A. E. Stearns, have worked assiduously on the

Society's behalf, and the latter gentleman was indefatigable both before and on the day of the Show. It must have been with much satisfaction that these gentlemen viewed the result of their efforts in the numerous plants, flowers, fruits, and vegetables which were placed in competition for the moderate prizes offered in the majority of the classes. No less than five tents were occupied with the exhibits, one being devoted to plants, another to table decorations, a third to groups, a fourth to vegetables and cottagers' produce, and the fifth to fruit and Roses. All these were arranged to the best advantage by Mr. Bowell of Richmond, who was specially engaged for the purpose, and performed his rather difficult duties with general satisfaction.

After the awards had been made Lieut.-Col. Harfield entertained the Judges, Committee, and friends at luncheon, when, in the course of some short speeches, most cordial wishes were expressed for the Society's continued prosperity.

PLANTS.—One of the leading classes in this department of the Show was that for six Orchids, in which two good collections were staged. Mr. S. West, gardener to Major Lendy, Sunbury House, Sunbury, won the prize with well-grown plants of Cattleya gigas Sanderiana, an extremely handsome variety, bearing eighteen flowers; Odontoglossum vexillarium Cobbianum, twelve spikes; Cattleya Mendeli, Lælia purpurata, and Dendrobium thyrsiflorum. Messrs. Jackson & Son, Kingston, also had some healthy freely flowered plants, which were highly commended. Major Lendy was awarded the prize for the best specimen Orchid, Lælia purpurata, with twelve spikes of three to five flowers each, in fine condition. The stove and greenhouse plants were not large, but neat and well grown, especially so in the premier six from Mr. J. Reeves, gardener to W. Hewitt, Esq., Otlands Park, which comprised Erica Cavendishiana, Statice profusa, Impatiens Sultani, Bougainvillea glabra, and Plumbago capensis. Mr. J. Wakefield, gardener to E. Pettet, Esq., Otlands Park, was placed second, an excellent Erica ventricosa alba being noticeable amongst his plants. A handsome six foliage plants from Mr. Wakefield gained him the leading prize in that class; his best plants were Chamaerops excelsa, Cycas revoluta, Dicksonia antarctica, and Pandanus Veitchi, all vigorous plants. Some well-flowered Fuchsias were exhibited by Mr. J. Plowman, gardener to C. T. Lawers Smith, Esq., Walton-on-Thames, and brightly coloured Coleuses from Mr. Waite, gardener to the Hon. W. P. Talbot, Esher, and Mr. Batt, gardener to H. W. Cuthbert, Esq., secured those exhibitors the prizes in the order they are named. Half a dozen strong and beautiful Adiantums from Mr. Pratt, gardener to Lieut.-Col. W. H. Harfield, Sunbury Court, deservedly won the premier prize. The species shown were Adiantum cuneatum, A. macrophyllum, A. trapeziforme, and A. farleyense, the last named being represented by two very handsome plants. Mr. A. Frankis, gardener to J. W. Wilson, Esq., was third. Messrs. Waite and Wakefield were the prizetakers for hardy and exotic Ferns. Messrs. Waite and J. Bowdon, gardener to E. Barnett, Esq., Kenton Court, Sunbury, having the best Tree Ferns. Pelargoniums were bright, the double varieties being much the best; Mr. Child, gardener to Mrs. Slade, Claygate, Esher, and Mr. Wakefield securing the prizes, while Messrs. Beunett and Waite were awarded equal prizes for single Zonals. Caladiums and Begonias from Messrs. J. Reeve, S. West, J. Child, and G. Taylor also added to the extent and beauty of the Show.

CUT FLOWERS.—Foremost amongst these were the Roses, and the competition was keen in the two chief classes. There were nine exhibitors of twenty-four H.P. blooms, and Mr. C. Warwick, gardener to J. P. Kitchen, Esq., Manor House, Hampton, won the first honours with very beautiful blooms, of which the following were uncommonly fine—Général Jacqueminot, grand in size and colour, and for which a prize was awarded as the best bloom in the Exhibition; Etienne Levet, Baron de Bonstettin, Dupuy Jamain, Catherine Mermet, Charles Lefebvre, and La France. Mr. W. Davis, gardener to E. Rutter, Esq., Halliford, was placed second, and Mr. J. Wakefield's stand was highly commended. With twelve Roses Mr. Warwick was again first in a class of fifteen competitors, and was followed by Mr. Davis. In other classes the prizetakers were Messrs. West, Goddard, Richardson, and Roper. A class was provided for a collection of twenty-four varieties of cut flowers, in which Major Lendy was awarded the first prize for a most interesting stand of Orchid flowers, comprising the following—Dendrobium navissimum, densiflorum, and Jamesianum; Cattleyas Eldorado, Schofieldiana, Gaskelliana, Mossiae, and gigas; Odontoglossum vexillarium, cordatum^a Schliepperianum, Halli, and Alexandræ; Lycaste Deppei; Cypripedium Hookeri, caudatum, barbatum, Lawrenceianum, and niveum; Oncidium pulvinatum; Vanda tricolor, and Cœlogyne Massangeana. Mr. J. Reeves followed with a good miscellaneous collection.

The competition was keen in the class for table decorations, and every one of the fifteen tables arranged in the tent possessed some points to recommend them, and in several cases they were exceedingly tasteful. This was specially so with the table from Miss Lendy, which deservedly won for that lady the premier honours. It was light and tasteful, but might have been still further improved by employing a smaller quantity of material. It was, however, very beautiful, the principal flowers employed being Delphinium mediceale, Oncidiums, Spireas, Epidendrum vitellinum, and Begonias, with Ferns and Grasses, Brizas being freely employed. The centre of the table was occupied with low stands, surrounding these being small troughs similarly filled. Miss Skrine, Sunbury, was second with a diversified arrangement of Poppies, Brizas, Spirea filipendula, Oxeye Daisies, and the yellow Lotus. Miss Ada Gittens, River Bank, Shepperton, was third with a less bright arrangement of double Feverfew, Grasses, and Adiantum cuneatum. The best of the others were distinguished by combinations of Cornflowers and Poppies, Water Lilies and Forget-me-nots, pink and white Canterbury Bells and Everlasting Peas, and dark and light Roses. This tent was one of the most interesting in the Exhibition, and the Committee would do well to give as much encouragement as possible to what is likely to become an important feature in the Show.

FRUIT AND VEGETABLES.—There was not an extensive display of fruit, but it was of fairly good quality, especially the black Grapes. Mr. Osman, gardener to Lawrence G. Baker, Esq., Ottershaw Park, Chertsey, was first with three good bunches of Black Hamburg, well coloured, and Mr. J. Bowden followed with a black Grape named Gros Colman, but certainly not that variety; it was, however, very well coloured. Mr. Osman was also first with Buckland Sweetwater in the white Grape classes. Mr. C.

Gardner, gardener to R. H. Turner, Esq., Walton, was second with the same variety. Peaches, Nectarines, Melons, and Pine Apples were also shown by Messrs. Bowden, Sutton, Wakefield, Burns, Frankis, Reeves, and Waite. The last-named also had the best collection of vegetables in a class of eight competitors, winning the first place with admirable examples of Telegraph Peas, Cucumbers, Dedham Favourite Tomatoes, Snowball Turnips, White Leviathan Onions, and Snowdrop Potatoes. Mr. J. Child was a close second, and Mr. West's collection was highly commended.

Of the miscellaneous exhibits the most noticeable was a collection of Pedigree Roses from Mr. W. Bennett of Shepperton, and a stand of his new Mrs. John Laing was greatly admired, well deserving the certificate awarded for it, an honour that was repeated at the Crystal Palace a few days after. Her Majesty, Lady Mary Fitzwilliam, and the celebrated Francis W. Bennett were also very handsome. Messrs. Jackson & Son, Kingston, sent a very beautiful group of greenhouse plants, and Messrs. C. Lee & Son, Hammer-smith, had some boxes of Rose hlooms.

EALING.—JULY 7TH AND 8TH.

THE twenty-first summer Exhibition of the Ealing, Acton, and Hanwell Horticultural Society was held in the grounds of Gunnersbury Park, Ealing, on July 7th and 8th. The Show was of considerable magnitude, four large marquees having to be erected in order to provide space for the very large number of entries received. Classes were provided for specimen flowering and foliated plants, groups, Roses, and cut flowers, besides fruit and vegetables, and in all of them competitors were numerous. Under these circumstances it is to be regretted that neither time nor space will permit of a detailed report of the exhibits being given. We will, however, briefly glance at the most noticeable of them.

Perhaps the most distinctive feature of the Show was the groups of plants arranged for effect in the open classes for special prizes. These were without exception beautifully arranged. The first-prize group, that of Messrs. W. Fromow & Sons, Sutton Court Nursery, Chiswick, was one of the handsomest we have seen, and was greatly admired. Various Orchids, Lilliums, Gloxinias, Irises, and other plants were employed, and

were awarded first and second prizes respectively. In the corresponding classes for white Grapes, however, Mr. Baird's exhibit was a marked improvement, two very fine bunches of Duke of Buccleuch being shown. They were of good size and splendidly finished, first prize being deservedly awarded. Two excellent dishes of Strawberries were shown by Mr. Gardlondroy, gardener to Mr. C. B. Bingley, Stanhope Park, Greenford, the varieties being British Queen and Dr. Hogg. Mr. G. Fulford also showed a splendid dish of James Veitch. The other exhibits of fruit do not call for special comment.

There was plenty of competition in the vegetable classes, though nothing remarkable was exhibited. For Potatoes Messrs. Grainger, gardener to W. Clark, Esq., Ashton House, Ealing; Milsom; Holden, gardener to C. T. Amherst, Esq., Castle Bar House, Ealing; Wright, gardener to J. P. Greenfield, Esq., The Spring, Hanwell, and Chadwick were the principal prizetakers. Cucumbers were well shown by Messrs. Weeden, Langden, and Wright. Prizes for Onions, Carrots, and Turnips were also awarded to the last named exhibitors. Competition was keenest, however, in the cottagers' classes, and their exhibits were far more numerous, and, in several cases, quite equal in quality to those in the open classes. The Society wisely offered three, four, and sometimes five small cash prizes in each class, and the result was a much larger number of entries than would have been received had only one or two prizes of greater value been offered.

The exhibits not for competition were unusually numerous, and added so materially to the effect of the Show as to merit special mention. First and foremost must be placed the splendid group of Ferns and fine-foliated plants from Mr. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House. Grand specimens of *Gleichenia rupestris*, *Davallia bullata*, and *Asparagus plumosus* were conspicuous amongst smaller yet good plants, and were greatly admired. Messrs. Charles Lee & Son, The Arhoretum, Isleworth, were represented by a fine group of hardy ornamental trees in pots, and also by collections of cut and pot Roses; the former contained some of the finest blooms in the Show. Messrs. Veitch & Sons, King's Road, Chelsea, also showed a handsome group of Roses in pots, and a few stands of cut blooms. Mr. B. S. Williams, Victoria and Paradise Nursery,

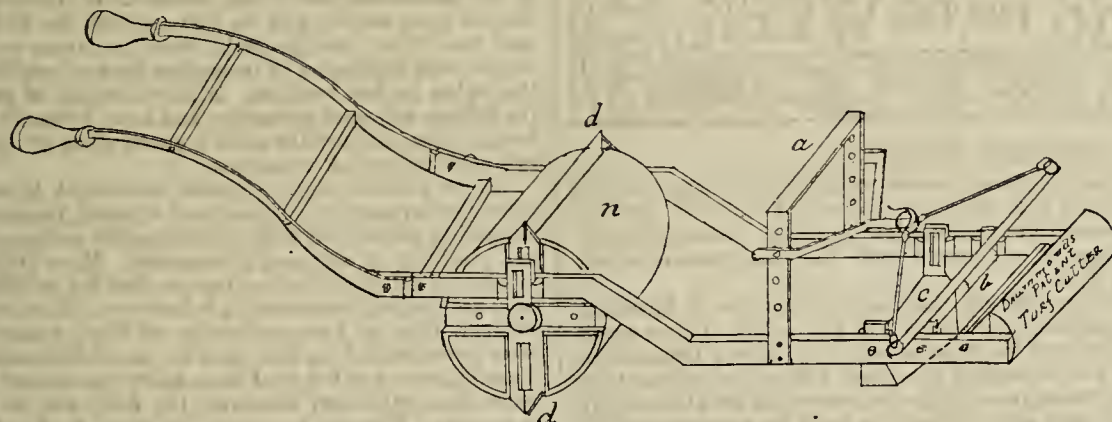


Fig. 6.—DRUMMOND'S TURF-CUTTING MACHINE.

their effect was not spoiled, as is too frequently the case, by a redundancy of green. Second prize was adjudged to Messrs. Hooper & Co., Covent Garden, who also showed an exceedingly effective group, Lilliums, Gloxinias, single and double Begonias, Carnations, Petunias, and other flowering plants being most effectively interspersed with Ferns, Dracenas, and Crotons. Mrs. Treadaway, Acton, was awarded third prize. Smaller but similarly attractive groups were staged for the Society's prizes. Messrs. Chadwick, gardener to G. M. Nelson, Esq., Hanger Hill House, Ealing; G. Fulford, gardener to J. Boosey, Esq., Hill House, Acton; Smith, gardener to Thos. Nye, Esq., Oakville, Castle Hill, were awarded first, second, and third prizes respectively. Seven groups in all were shown, and minor prizes were awarded to Mr. Davis, gardener to — Luke, Esq., Fairlawn House, Chiswick; and Mr. J. Fulford, gardener to G. Wright, Esq., The Elms, Acton. The same exhibitors were to the fore in the classes for specimen flowering and foliage plants, Messrs. Chadwick and Davis in particular exhibiting many highly creditable specimens, their plants being large and healthy. Classes were also provided for Gloxinias, Begonias, Petunias, Pelargoniums, Fuchsias, &c., the principal prizes going to the exhibitors already named, and Messrs. Weeden, St. John's Nursery, Ealing, and Milsom, gardener to W. Tindell, Esq., Manor House, Drayton Green.

Cut Roses were fairly shown. The challenge cup which, according to the conditions, becomes the property of the exhibitor who was placed first on two occasions, finally passed into the possession of H. H. Hayward, Esq., Hill Side, Ealing (gardener, Mr. Langden, who won it last year), good blooms of the most popular varieties being shown. Prizes were also awarded to Messrs. J. A. Morris, Florist, Church Road, Acton; Elliott, gardener to J. Moore, Esq., Melbourne Lodge, Ealing; and others. Mr. Langden, however, secured the lion's share of the prizes.

In addition to the preceding, numerous prizes were offered for bunches of cut flowers, bouquets, epergnes, baskets of flowers and wild flowers; and so great was the response that the exhibits in these classes occupied a considerable portion of space. Lady exhibitors were, as usual in these competitions, by far the most numerous, and many beautiful examples of tasteful arrangement were shown.

The fruit exhibits were not noteworthy for quantity, nor, with one or two exceptions, for quality either. Some very fine bunches of Black Hamburgh Grapes were shown by Mr. Milsom. The bunches were large, the berries of good size and well ripened. Equally large bunches, but lacking finish, were sent by Mr. Baird, gardener to C. N. Daw, Esq., Homefield, Ealing; they

Upper Holloway, London, N., staged an attractive group of Orchids, and greenhouse and stove plants; while from Messrs. J. Laing & Co., Forest Hill, came a handsome miscellaneous group of plants. Mr. Watkinson, market gardener, Ealing Common, showed some very fine Canliflowers and Vegetable Marrows.

The Show was admired by a large number of visitors, and Mr. Richard Dean, the Secretary, is to be congratulated on a decided success.

DRUMMOND'S TURF-CUTTING MACHINE.

MR. DRUMMOND requests us to draw the attention of our readers to his new turf-cutting machine. We have not seen it, but cite the following description from the *Invention and Inventors' Mart*:—"The turf-cutting machine invented by Mr. F. T. Drummond, gardener, of Cotton Hall, Bridgenorth, Salop, is very ingeniously contrived and an excellent labour-saving appliance, as it lifts as much turf as ten men would do. The turf is, moreover, cut perfectly true; for we are informed that on a test being made, out of 760 square yards of turf cut, there were only two lumps thrown out as thin ones when the men were relaying. Each turf was cut 2 feet long, 1 foot wide and 1½ inch thick, the whole being lifted in four hours.

"In our engraving, *a* is the draught bar for fixing the gearing to for hauling the machine. The gearing can be put to any height on the bar according to the draught required: *c* is the cutting blade, with vertical sides to cut the width. This works in guides, and can be altered to any required thickness of turf to be cut: *d* are the knives fitted to slide in arms *e*, on drum *n*, to cut the turf in lengths. There are four of them, and the drum being 4 feet in circumference turfs can be cut in 1, 2, or 4-foot lengths. We may state that in practical trials the 2-foot lengths were found to be most serviceable. They are handy to pick up, wheel away and stack, and are of a nice size to relay, the bottom of the turf and

sides being cut as true and smooth as if it had come out of a planing machine. The rolling frame is iron, with wooden rollers working in studded eyes varying in thickness from 2 inches to half an inch. There is a steel blade fixed at the bottom, so that by a jerk of the lever the blade is made to cut through the turf, the onward motion of the machine compelling it to run up the wooden roller, and the large roller causing it quickly to fall from the perpendicular. The lever is released when the turf is large enough, and the frame will run over the rolled turf, when the first motion is again repeated. It will be seen that the machine is a most useful appliance in the laying out of gardens, but this is not its only purpose. The inventor claims that by taking the knives off the drum, and using the appliance in this way, a piece of lawn which has become infested with objectionable growths, such as Daisies, Plantain leaf, rank grasses, Dandelions, &c., can be completely changed for the better, and that it can also be applied to rough pastures, as the machine could be used to destroy rank grasses in such pastures. Further, by substituting a blade with more pitch at *e*, as shown by the engraving, the ground to be levelled for tennis, cricket, &c., grounds, can be broken up in about the same time as it takes to lift the turf, thus obviating the digging, levelling, raking, and rolling by hand. The machine therefore is a very useful appliance, which should form a *sine qua non* of the landscape gardener, and would be useful in every gentleman's garden where turf requires levelling or renovating. It need only be better known to be highly appreciated."



KITCHEN GARDEN.

Staking Asparagus.—The recent warm weather has brought on the Asparagus shoots so quickly that they are now very tall. The growths should be secured to prevent their breaking over by the crown, which is very liable to be the case if left untied until the first storm of wind, which may happen any day.

Salsafy and Scorzonera.—Where these show any signs of blooming prematurely have them drawn up at once, and sow again. Crops which are going on all right should be thinned out to at least 6 inches from plant to plant. Those two vegetables were finer with us last winter than we ever had them. They were growing in what we might term thoroughly good Carrot soil, and as they were thinned in good time they developed without any check.

Mushroom Beds.—These are worse to manage now than they are in early spring or late autumn, as the summer heat brings maggots, and is otherwise troublesome. A cool position under large spreading trees and behind walls are good places for beds now, and very cool sheds or cellars will also do. Where maggots are destroying the crops dissolve a small handful of salt in 4 gallons of tepid water and water the surface thoroughly with this.

Swedish Turnips.—We have had to deal with cooks who would not use these, and we have found others who preferred them to all others in winter. They are very hardy and easily grown, and an excellent winter vegetable. Those who have not tried them might do worse than begin. The present is a good time to sow for a main winter crop. They require rich soil and an open position. The drills should be 2 inches deep, 18 inches apart, the seed sown thinly, and the plants thinned out to 1 foot apart as soon as they can be handled.

Vegetable Marrows.—These are now growing fast. If left alone at this season they soon become a tangled mass of growths, large leaves, and little fruit; but if thinned out systematically, each shoot kept clear of its neighbour, and all grown in the sunshine, sturdy growth and fruits at every joint will be the result. Many promising blooms which open never form fruit, and sometimes we hear complaints of the plants not fruiting at all. In nine cases out of ten this is owing to the crowded state of the shoots and leaves. Those who may have neglected thinning and training until they are reminded of it here need not be surprised if their plants do not begin to fruit on the day or week they are taken in hand, as when neglected at first their after fruiting is never altogether satisfactory, at least for a time. Give those bearing heavy crops abundance of liquid manure. Cut off the fruits before they become too old if a long succession of tender fruits are desired. The same remarks apply to ridge Cucumbers, and great attention should be given to them just now.

Cabbage.—For the autumn supply the seed ought to be sown now. Choose a good position, sowing in shallow drills, and when the plants have made a few leaves by the beginning of August plant them 18 inches apart in good soil after the Potatoes or some other crop.

Seakale.—This has grown unusually well this season. It came into flower in May, and we allowed it to bloom as much as possible that the bees might get the benefit of it, but were it not for this we would not have allowed, the flowers to expand, and those who are not in-

terested in bee-keeping should cut the heads off as soon as they show flower. Ours are out of bloom now, and the seed has been cut off. Fresh crowns are being sent up from the sides, and the main point now is to keep the plants free from dead leaves and weeds.

Late Peas.—The latest crops of all may still be sown, and if the autumn is favourable the produce will be very valuable. Rich deep soil will alone grow them well, and the position cannot be too sunny. Early kinds are sometimes put in now, but we do not like to trust to these altogether, as they are rather tender in late autumn, and often fail when the late sorts are going on all right.

Rhubarb.—Roots intended for early forcing should be kept free from decayed leaves that the crowns may be fully exposed to the sun. Where tender young Rhubarb is wanted in the autumn pull up most of the stalks from a few of the roots, and they will soon break into fresh growth and give a supply of as tender produce as any which could be grown in spring.

Late Beans.—Broad Beans may be put in for the latest crop. They will pod in September and remain good for a considerable time afterwards. Runners will come in very late if sown now in favourable districts, and dwarfs of Osborn's Forcing and the Ne Plus Ultra types may be put in with every certainty of their forming a very acceptable crop. Give them good soil, sow thin, and let their position be an open and sunny one.

FRUIT FORCING.

Figs.—Early-forced Trees in Pots.—When the second crop has been gathered fruiting should be discontinued, and the young growths allowed to find their way to the glass, where in the full light they will ripen to the points of the shoots, and set as many Figs as they have leaves; but care must be taken in their management, otherwise they will be too far advanced to stand over the autumn, and the thinning and forcing necessary to their swelling and ripening will weaken the trees and keep them too long to admit of a proper season of rest before they are started in November. Although a third crop is sometimes taken it is at the expense of the succeeding early crop, which is of more consequence as forced fruit is then scarce, and on this account we find it more profitable to take two crops, and gradually inure the trees to full exposure through August and September by increasing the roof ventilation, and withdrawing the lights in hot weather. A liberal supply of water is necessary, and the foliage will need syringing, and most probably sponging, in order to keep it clean and healthy until it shows signs of ripening, when a gradual reduction will be advantageous.

Trees Planted Out.—Similar treatment is necessary in succession houses with regard to stopping and ripening, the points of the shoots being allowed to ascend, but under the extension system of training over a trellis less pinching or stopping is required. Many fruits, especially Figs, are injured by being stopped too late or after the middle of July. When the trees are getting too strong it is better to lift, root-prune, and replant in autumn, than to have a quantity of blind points. When the trained trees have finished the first crop the needful cleansing of the foliage, and liberal thinning of the fruit from which the second crop is to be obtained, must have attention, otherwise the fruit will be small and indifferent in quality. Figs when growing delight in heat and moisture, and require an abundance of light and air when ripening.

PINES.—At this time of year we have advantages in the way of light and heat which should be utilised as much as possible, and artificial heat should be dispensed with or only employed when absolutely necessary. If the temperature in the fruiting house stands at 70° at night fire heat is not needed, while it is quite unnecessary where the young stock is located when the night temperature does not fall below 60°. The chief of the fruit will now be cut from the most advanced section of summer-fruiting plants; therefore, at as early a date as convenient, the suckers should be carefully screwed out, and without delay be potted firmly in good prepared friable loam in properly drained pots of 5 to 7 inches in diameter, after which they should be plunged into a bed having a temperature at 6 inches beneath the surface of 80° to 90° in a pit or house, which can be kept somewhat moist. Shading should be applied over the suckers whenever the sun is powerful, until new roots have formed, and growth is proceeding vigorously, after which little shade will be necessary unless the plants stand near to the glass. The suckers should be watered at the time of potting, but none should be given to them until it is actually needed. Keep the structure damp, and lightly dew the plants twice a day. In other houses the general management will comprise attention to watering, shading, syringing, and ventilating, the latter having prompt attention whenever necessary by opening the house early to dispel damp in the daytime, and by closing early. Water the plants judiciously, examining the surface of the soil in the pots by hand, and supply liquid manure whenever needed abundantly. Plants in small pots should be attended to at least twice a week.

THE FLOWER GARDEN AND PLEASURE GROUND.

Pinks.—There are few more popular flowers than these, and the number of superior varieties are increasing annually. The old white is still a great favourite, but to a certain extent is being replaced by the much larger and more continuous blooming Mrs. Sinkins, and this, again, may yet be superseded by La Belle Blanche, a charming variety, more pure white in colour and quite as free blooming. The present is a good time for striking cuttings—or pipings, as they are termed—of all the sorts, and as young plants will always be found the most profitable a certain quantity should be reared every season. A mild hotbed is the most suitable for the purpose, though in many warm districts it is quite possible to root them in handlights and frames without the assistance of

bottom heat; the cuttings to be from 4 inches to 5 inches long, cut to the fourth or fifth fully developed joint, and dibbled into boxes of loamy sandy soil, about 2 inches apart each way. They should be kept quite close until rooted, unless they give signs of damping, in which case a little air sufficient to dry them should be given every morning. They must also be kept uniformly moist and shaded from sunshine, and when rooted to be given plenty of air, and eventually bedded out where they are to bloom. Seedlings raised in May may now be picked off in boxes of light sandy loamy soil about 3 inches apart each way, and stood in a rather shady position for a time, bedding them out before they become crowded. They will, under this treatment, flower next summer. Seed of the stronger sorts may yet be sown with a fair prospect of some of the seedlings flowering next season. Cover the pans or boxes containing the newly sown seed with squares of glass, and stand them in a shady position till it has germinated, treating the seedlings later on as advised in the case of the earlier-sown seed.

Carnations and Picotees.—The choice border sorts will now be fast unfolding their blooms. They must, if fine blooms are required, be kept carefully staked up and have many of the side buds removed. These are best propagated by layering late in July or early in August. The common border sorts, and which partake more of the character of the perpetual-flowering varieties, can be readily increased by cuttings taken off and otherwise treated as advised in the case of Pinks. If abundance of flower is the principal consideration the stock of plants is best obtained from seed. Seedlings raised in May or early in June form fine plants the same season, and which yield a surprisingly large quantity of bloom the following summer. Many single sorts are usually included in every packet of seed, but these are frequently much admired. Prick out the seedlings either on a bed of fine soil or in boxes, and directly they are strong enough transplant them to their flowering quarters, disposing them 8 or 9 inches apart each way. They succeed best on slightly raised beds, and will be improved by the addition of some road grit and loam, nothing being better than the trimmings obtained from park drives to the ordinary garden soil. The bulk of ours are raised from seed, only the very best of these being perpetuated by cuttings, when these can be had.

Hardy Primulas and Auriculas.—Where these were taken up from the beds and temporarily bedded in, no time should be lost in properly planting them in their summer and early autumn quarters. All may readily be increased, and will be improved by division. A north border or some rather cool position best suits them, a liberal dressing of nearly rotten manure being well mixed with the soil. Every crown that can be split off with a few roots attached will soon grow into a good-sized plant providing they are planted at once and firmly, taking care to keep them supplied with water if necessary, and shaded from sunshine. April is the best month for sowing the seed of this class of plants, including in our case Polyanthus and the commoner Primroses, and the seedlings being pricked out during June or early in July in good light soil they attain to a good flowering size and suitable for transplanting to their flowering quarters in October or November. The seed may also be sown on a cool border as soon as it is ripe, but the seedlings thus obtained will not be of much or any service the following spring.

Spring-flowering Plants.—Many of these will now require attention if a good stock of plants is needed for planting in the flower beds next autumn. A row of handlights stood at the foot of a north wall or other cool position will be found very serviceable for propagating such plants as choice Wallflowers, Alysums, Iberises, Myosotises, and Sweet Williams, though all of these will sometimes strike freely under a north wall without the assistance of glass, while in many cases strong pieces can be split off with a few roots attached and soon make strong plants. For the cuttings a slightly raised bed should be formed with light sandy soil, the cuttings properly cut to a joint, being dibbled in firmly about 2 inches apart each way and watered. The seedling Wallflowers, Sweet Williams, German Stocks, and Forget-me-nots ought not to be left to take their chance in the seed beds, but should be pricked out on borders of good light soil, from which they will readily transplant if need be. The coolest borders are the most suitable for Daisies and double Primroses, and these should be freely divided, cleaned, and firmly dibbled out.

Pansies may be propagated whenever healthy flowerless young shoots can be procured, and these should be dibbled into boxes and placed in cold frames or into handlights, and kept close and shaded in either case till rooted, the choicest of them to be eventually potted up and wintered in frames. The bedding section or *Violas* that have been flowering all the spring ought when lifted from the beds to be divided and replanted rather deeply in good soil. This induces them to push up abundance of fresh shoots, and these being struck early form strong hardy plants, very superior in every respect to divided old plants. Seedling plants of any sort raised in April or May should, when of good size, be dibbled out in a cool enriched border, and will grow into fine plants for next spring. More seed may be sown in August, and the plants from this sowing will give a good late display next season.

THE BEE-KEEPER.

BEEES AND HIVES FOR BEGINNERS.

I HAVE been prompted to tak up the above subject in consequence of the numerous inou ries, Which are the best

hives and bees? To answer the first question to meet the approval of everyone is a difficult matter when the numerous kinds are taken into consideration; but, on the other hand, refusal or unwillingness to answer the question direct would betray inability and weakness, so I will fearlessly say that the best hive for all purposes, and taking every requirement into consideration, is the Stewarton of both types, square and octagon.

The first thing a bee-keeper should take into consideration is the site; but as many have no choice in this matter, if the situation is unfavourable artificial means should be used to shelter them from eddy winds. The best means of doing so is to plant a hedge of some sort. Privet grows quickly, but it requires shelter or support, and where ground can be spared a double hedge of evergreens is the best. This not only shelters the hives, but is useful in other ways when manipulating, besides being a safe retreat for timid persons or children. Wooden fences or stone walls make bad protectors against wind. When it strikes either the force is not broken, but rather increased, and falls on the lee side with greater power and comes down like a cascade on all on the supposed sheltered side. To render the apiary more perfect, vegetables, particularly Cabbage, should not be planted near the bees, as they are destructive to those which alight thereon, whereas stirring and working the soil irritates the bees greatly. A single post let firmly into the ground, having a board nailed, or, better, bolted with a bed bolt, the nut let into the post, makes an efficient stand, and is proof against mice. I at one time had metal pillars having a cup filled with water, which the pillar passed through. This kept out all creeping vermin, but these were expensive. The hive placed on this stand will resist any storm if a wire or cord is passed over the hive and fastened to the post. A straw hackle is made on a string reaching only to the upper edge of the hive, the top being covered with hay, and a sheet of corrugated iron projecting over and some distance above the hay, and fastened to T posts, completing the arrangement, and forming the most efficient protection to a hive, that neither cold nor heat will affect, nor will damp show itself anywhere in or about the hive.

Loose straw will sometimes be scattered about, which makes a garden look untidy. Where this is an objection, outside cases or cheap bee houses obviate it, but single-cased hives so protected are far superior to any double-cased ones, and can be moved about from place to place with greater ease and more cheaply than the unwieldy and costly so-called perfect hives, which are in many cases productive of mischief, through dampness engendered therein that is entirely absent at all times in both straw and single-cased wood hives managed in the manner described. To keep a hive free from damp at all times is the first and greatest point towards success in apiculture. Dryness keeps the bees quiet, comfortable, and healthy during winter, encourages breeding and the spreading of brood with more safety than any art or manipulation.

When we make a defence in one place we should be careful not to weaken or neglect another that the enemy may enter. I could mention many weak points in frame hives, but one prominent is the double casing and packing entirely away from the free action of the air so essential to the sanitary and healthful condition of the hive. A thin piece of wood does not retain damp like a thick piece, or rather may I say two thicknesses with the packing, which when damp, is more difficult to dry than a thin piece. Some may argue that this dampness is essential to bees when breeding, and using the enamelled quilt is a proof that this is believed in, but I differ entirely from such an opinion. The drier a hive is kept at all times the more progress the bees will make with the breeding. The foregoing is but an outline of the course I advise bee-keepers to follow. It is the cheapest, most simple and natural, as well as the most rational system that has ever been adopted. Dryness, with a free circulation of air on a hive, with walls little more than half an inch thick, covered 2 inches thick with straw, will brave the coldest winter ever experienced here.

What bees do I approve most of? is the next question. The answer to this is, there are some people through carelessness or too much meddling with their bees fail to succeed with the common bee, now very rare in this country. Others, failing to perceive the qualities and requirements of the Ligurian bee, can make nothing of them, while others, better able to trace cause and effect, have proved them to be in every way superior to our native bee. The Cyprians and Syrians come under the same category, though I must confess these varieties seem tender in our climate during winter, but are otherwise excellent. The Syrians, and perhaps the Cyprians too, seem sensitive in a greater degree to the change of weather than any other variety,

are therefore valuable on this point. The crosses with these varieties with the Carniolian are far the best working bees I ever possessed. If irritated they are vicious, but unless when at the Heather, and then not always, I never use a veil. My bees neither sting me nor anybody else, unless through some provocation. The only protection I use is a little carbolic acid on paper, or a feather, which if carefully applied subdues the most vicious bees instantly. As the season is now at hand bee-keepers will have an opportunity of proving its efficacy in clearing supers of bees before removing them from the hive. I preserve my sheets of saturated paper, so that very little carbolic acid is required to be effective.

The Carniolian bees are not only good workers, flying a long distance for forage, but are, perhaps, the most docile bee in existence. I never knew them make an attack on anyone, and never was stung unless when I inadvertently crushed them. Where there are children or timid ladies, these bees could not fail to give satisfaction. They are also very enduring, and will live and prosper where some varieties would be a failure. I have, therefore, confidence in placing the Carniolian bee as the one that will give the greatest satisfaction with the least disappointment.—A LANARKSHIRE BEE-KEEPER.

KILLING BEES IN AUTUMN.

UNDER the above heading, pages 279, 280 (last volume), your contributor, "A Hallamshire Bee-keeper," says that he was disappointed at my omitting some important advice in my reply to Mr. W. Kruze, on page 221, and then gives his advice as supplementary to what I said. My reason for omitting so important a matter in apiculture was that I had already explained the system he supplements in the numbers for July 31st and August 7th, 1884, which I considered unnecessary to repeat, and which appears to have been unnoticed by your correspondent. His remarks, however, are the more valuable and pleasing by giving his practical results, which corroborates my own experience, and refutes the arguments of those who say that extra large swarms of bees do not gather so much as medium ones will do. Then your correspondent hits the mark, and deserves credit for purchasing bees from bee-keepers in earlier districts when they are no longer of use there, but by the wise action secures a profit to the bee-keeper, with a prospective, and very likely one, to those who purchase the condemned bees. His plan, however, of having 8 lbs. of bees in a light box, with a journey of twenty hours, is open to question; at least there is more risk in driven bees full of honey without combs travelling, therefore they require great care in transmission. If there is nothing but the bare walls of the hive for the bees to support themselves the jarring they are likely to get causes them to become heated and die. May I suggest, to prevent the disaster, for him to fit his boxes with thin boards about two-thirds down from the top of the box, so that the bees will be divided and get sufficient foothold, so that they will not be affected by any rough or undue handling or jarring? The essential ventilation above and below must on no account be overlooked. Another important matter is that in such cases it is absolutely necessary they should travel by passenger train; and as each package is charged separately, a considerable saving would be effected if a number were lashed together or packed into a crate. As your correspondent may have provision made to avert likely disaster, still the foregoing remarks may be found useful to others who may follow your correspondent's commendable plan of saving condemned bees.—LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

E. H. Krelage & Son, Haarlem.—*Wholesale Catalogue of Bulbs and other Plants.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (Miss Moorewood).—"The Greenhouse Manna" is at present out of print, and if the name and address of your friend be sent to the publisher the order shall be traced if possible and the stamps returned.

Marechal Niel Rose Blooms.—A correspondent has sent us two very fine blooms of this Rose, but his letter appears to have gone astray. We shall be glad if he will write to us again, stating the conditions under which the plant is grown that produces such handsome flowers.

Allamanda Leaves Curled (B. C.).—The species, *A. grandiflora*, is naturally more delicate than the larger forms, and more liable to be scorched by the sun. In the case of your plant the moisture is extracted from the shoots faster than it is supplied by the roots, and this break in the supply naturally causes the collapse of the foliage. Whether the root-action is defective by unsuitable soil, or whether there has been a little mistake in watering we cannot tell; but by some cause or other the growths do not receive adequate support; and it will be better to shade slightly till the root-action is better than to allow the growths to be injured like those before us.

Disbudding Chrysanthemums (Cambridge).—We have consulted one of the best growers on the subject of your letter, and he thinks you have not gone far wrong in the treatment of your Chrysanthemums. He advises leaving only 1 and 4 in your diagram, as No. 2 is invariably the weakest shoot. He would take that off entirely. At the end of July Nos. 1 and 4 will be showing each a flower bud again, which should be removed promptly, allowing two side shoots on each growth to extend for flowering. Four flowering shoots are sufficient to leave, and there is always a chance of one being damaged or going blind. If the plants are not very robust, he would only leave one shoot this time, but leave two or three at the next pinching, and he satisfied with that number of flowers.

Carbonate of Soda as a Manure (J. M.).—In reply to your inquiry as to whether this is of "any value" as a manure we reply in the affirmative, but we do not know that its exact value has been tested on any extensive scale. The fertile fields of Syria and some of the most profusely luxuriant fields of the Orientalists abound in carbonate of soda. This alkali enters into the composition of many vegetables and is calculated to accelerate the growth of most crops. It has been used as a liquid manure with advantage to Strawberries, a pound of the soda being dissolved in fourteen gallons of water. Mixed with bone dust or guano it could scarcely fail to be serviceable to the majority of crops. You may safely try it and thus ascertain how far it is beneficial to the soil in your garden. Your Fern is, we think, *Polystichum Lonchitis*, the Holly Fern.

Fungus on Tomatoes (W. S. T.).—Your plants, judging by the portions sent, appear as if they had been too generously treated. Either the soil is very rich, or liquid manure has been given so freely that the leaves seem to be unable to elaborate the sap, and a fungus has taken possession of them similar to that which attacks Potatoes. We should feed the plants less, supporting them chiefly with pure water and an occasional top-dressing if needed of fresh soil or some such phosphatic manure such as superphosphate of lime. We should also apply sulphur to the leaves. A simple method is to dissolve an ounce or two of soft soap in a gallon of water, adding sulphur to form a kind of cream that will pass through a syringe; or it may be dusted on the parts affected. Maintain a buoyant atmosphere, never wholly closing the house at night, and increase the ventilation very early in the morning.

Gall-mites on Treas (G. M. Dougall).—It has been discovered that the Alder is infested by at least four species of the gall-mite tribe. The first you describe, showing itself by silvery patches, usually beneath the leaf, is, we presume, *Erineum Alneum*. The second scatters thickly over the leaves galls of green or yellow tints: this is *Cephaloneon pustulatum*. By the third galls are produced along the nervures, the upper showing most traces, this would be *Phytoptus Alni*, a less frequent kind. Upon the Plane or Sycamore the first gall described is very common, it is the work of *Phytoptus Aceris*, similar to that produced by its congeners that haunt the Lime and the Maple. We should attribute the second kind to a species of *Erineum*, possibly as yet unrecognised by naturalists. To *Phytoptus Pruni* must be attributed the raised galls on the Plum, sometimes like purses or clubs in miniature. Continental observers describe another gall-mite of the Plum, which infests the twigs of young trees, and even occasions their death in some instances. As to *Chermes Abietis*, we do not think the specimens you mention are males, but rather immature females. The males are invariably winged; of their partners there are both winged and wingless forms, appearing at different seasons.

Pruning Junipers—Clipping Yews—Cutting Down Old Holly (Sussex).—Junipers will bear clipping, but not to such an extent as Yews, as they do not break from the old wood, or very tardily. It is best to only cut back irregularities during moist weather in April, confining the pruning to the removal of those parts detracting from the symmetry of the specimen. Yews should be cut or clipped in August, as they have then made the growth for the season, consequently they keep the form then given through the autumn and winter. If they require much cutting-in it should be done during moist weather in April, which will cause them to break freely even from the old wood, and any irregularities may be removed early in September, as the growth from cutting back will be later. The present is not an inappropriate time for cutting down an old Holly, but it would have been better performed in April or May. We have, however, cut Hollies very hard in even as late as the middle of July, and giving them some good soakings with water and liquid manure alternately, preceding and after cutting in they have made good growths, and in a year or two were converted from ungainly into symmetrical specimens, than which there are none finer for lawns, both the green and variegated kinds being highly ornamental.

Exhausted Peach Trees (A. B. T. T.).—Judging by the examples sent, your trees are in a very enfeebled state indeed. Either the border is exhausted or sour, or what amounts to the same thing, the root-action is defective. The trees are certainly not receiving anything like the support that is requisite for supporting the crop and at the same time producing satisfactory growths. Only a very light crop of fruit should be permitted to remain on the trees. One fruit to every 18 square inches will be ample, and

we should take off all the rest at once. If left they will be of little if any value, and will exhaust the trees needlessly. If the border is at all dry, not on the surface merely, but 2 feet below it, give liquid manure copiously. This will support the trees for a time; but they require fresh soil. The old border should be removed, good drainage provided, and the trees planted in good loam. They will never be satisfactory until fresh roots form in a better medium. If the trees were ours we should lift one at a time immediately the crop was gathered, but it would be requisite to keep both roots and leaves constantly moist during the operation, and afterwards to shade and syringe sufficiently to keep the leaves fresh; new roots would then form before winter, and the growth of the trees would be very different next spring. If you have not the means and skill at your command for removing the trees in summer, let them remain till the autumn, as summer-lifting cannot safely be entrusted to persons who have not had experience in the work.

Market Measures.—The following are usually employed for fruit and vegetables:—These, being often made either of osier or deal shavings, they vary triflingly in size more than measures made of less flexible materials. **Seakale Punnets.**—8 inches diameter at the top, and $7\frac{1}{2}$ inches at the bottom, and 2 inches deep. **Radish Punnets.**—8 inches diameter and 1 inch deep, if to hold six hands; or 9 inches by 1 inch for twelve hands. **Mushroom Punnets.**—7 inches by 1 inch. **Salading Punnets.**—5 inches by 2 inches. **Half Sieve.**—Contains $3\frac{1}{2}$ imperial gallons. It averages $12\frac{1}{2}$ inches in diameter and 6 inches in depth. **Sieve.**—Contains 7 imperial gallons. **Diameter 15 inches, depth 8 inches.** A sieve of Peas is equal to 1 bushel; a sieve of Currants 20 quarts. **Bushel Sieve.**— $10\frac{1}{2}$ imperial gallons. Diameter at top $17\frac{1}{2}$ inches, at bottom 17 inches; depth $11\frac{1}{4}$ inches. **Bushel Basket.**—Ought, when heaped, to contain an imperial bushel. Diameter at bottom 10 inches, at top $14\frac{1}{2}$ inches; depth 17 inches. **Walnuts, Nuts, Apples, and Potatoes** are sold by this measure. A hushel of the last-named cleansed weighs 56 lbs, but 4 lbs. additional are allowed if they are not washed. A junk contains two-thirds of a hushel. **Pottle.**—Is a long tapering basket that holds rather over a pint and a half. A pottle of Strawberries should hold half a gallon, but never holds more than 1 quart; a pottle of Mushrooms should weigh 1 lb. **Hand.**—Applies to a bunch of Radishes, which contains from twelve to thirty, or more, according to the season. **Bundle.**—Contains six to twenty heads of Broccoli, Celery, &c.; Seakale twelve to eighteen heads; Rhubarb twenty to thirty stems, according to size; and of Asparagus from 100 to 125. **Bunch.**—Is applied of herbs, &c., and varies much in size, according to the season. A bunch of Turnips is twenty to twenty-five; of Carrots thirty-six to forty; of Greens as many as can be tied together by the roots. Grapes are put up in 2 lbs. and 4 lbs. punnets; new Potatoes by the London growers in 2 lbs. punnets. Apples and Pears are put up in bushels, sieves, or half sieves. A hundredweight of Kentish Filberts is 104 lbs. Weights are always 16 ozs. to the pound.

Carnations, Picotees, and Pinks (W. G. A.).—The broadly distinguishing marks between these are these Pinks are altogether smaller both in flowers and foliage, and they also bloom earlier than either of the others, and the colour round the petals has an outer ring of white. The following are the characteristics of a good Pink:—The flower must be fully double; so much so, that it should form the half of a ball, rising up to the centre, and should be perfectly circular in outline. Each petal should be stout, broad, and smooth at the edges. This smoothness is called rose-edged; that is, without any notches or teeth. The lowest tier of petals should be the widest, reaching in diameter at least from 2 to $2\frac{1}{2}$ inches. The next row should be shorter, so much so as to show the lacing fully on the lower petals; and the next shorter again, and so on up to the centre, which should be well filled up without confusion. The ground colour should be pure white. The lacing, or circular stripe, should leave an edge of white outside of it, and another inside; this lacing of colour should be of the same width as the outside edging of white, and should be smooth and even at the edges; in fact, laid on as if it had been traced by a skilful hand with a fine camel-hair pencil. Then, at the bottom of the petals, there should be another body of colour, the same as the lacing, to form a bold, rich eye. The Carnation has the marks on its petals from the centre to the edge, and through the edge in flakes, or stripes of colour. The Picotee has its coloured mark only on the outer edge of its petals. Properties of a good Carnation.—Carnations are divided into five classes, namely:—1, Scarlet Bizarres. 2, Pink or Crimson Bizarres. 3, Scarlet Flakes. 4, Rose Flakes. 5, Purple Flakes. *Bizarre* is a French word, meaning odd or irregular; the flowers in these classes have three colours, which are irregularly placed on each petal. Scarlet Bizarres have that colour predominating over the purple or crimson, but the pink or crimson Bizarres have more of these colours than the scarlet. Scarlet Flakes are simple white grounds, with distinct stripes or ribbons of scarlet. Rose and purple Flakes have these two colours upon a white ground. The properties in other respects are—1, The flower should be not less than $2\frac{1}{2}$ inches across. 2, The guard or lower petals, not less than six in number, must be broad, thick, and smooth on the outside, free from notch or serrature on the edge, and lapping over each other sufficiently to form a circular Rose-like flower; the more perfectly round the outline the better. 3, Each layer of petals should be smaller than the layer immediately under it; there should not be less than five or six layers of petals laid regularly, and the flower should so rise in the centre as to form half a ball. 4, The petals should be stiff, free from notches, and slightly cupped. 5, The ground should be pure white, without specks of colour. 6, The stripes of colour should be clear and distinct, not running into one another, nor confused, but dense, smooth at the edges of the stripes, and well defined. 7, The colours must be bright and clear, whatever they may be; if there be two colours, the darker one cannot be too dark, or form too strong a contrast with the lighter. With scarlet, the perfection would be black; with pink there cannot be too deep a crimson; with lilac, or light purple, the second colour cannot be too dark a purple. 8, If the colours run into the white and tinge it, or the white is not pure, the fault is very great, and pouncy spots or specks are highly objectionable. 9, The pod of the bloom should be long and large, to enable the flower to bloom without bursting it; but this is rare; they generally require to be tied about half way, and the upper part of the calyx opened down to the tie of each division; yet there are some which scarcely require any assistance, and this is a very estimable quality. 10, Decided superiority of perfume should obtain the prize when

competing flowers are in other respects of balanced merit. Properties of a good Picotee.—Picotees are divided into seven classes. 1, Red, heavy-edged. 2, Red, light-edged. 3, Rose, heavy-edged. 4, Rose, light-edged. 5, Purple, heavy-edged. 6, Purple, light-edged. 7, Yellow grounds, without any distinction as to the breadth of the edge colour. The characteristics of good form are the same as for the Carnation, but with regard to colour—1, It should be clear, distinct, confined exclusively to the edge of the petals, of equal breadth and uniform colour on each, and not running down (called sometimes feathering or barring), neither should the white ground run through the coloured border to the edge of any one of the petals. 2, The ground must be pure white, without the slightest spot. This rule renders the name, still retained by florists, inappropriate, for *Picotee* is the French for spotted. Cloves are self-coloured; Carnations so named because of their peculiar fragrance.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A Reader.*)—You employed not the slightest packing to keep the flowers and Ferns fresh, not even a green leaf; and you have no idea of their withered condition on arrival. It is impossible to name the Ferns without better and fresh fronds. The Orchises all appear to be varietal forms of *O. maculata*, but no one can tell with certainty from such shrivelled examples. (*T. W. S.*)—*Macleania punctata*.

COVENT GARDEN MARKET.—JULY 8TH.

LITTLE or no alteration to quote. Market well supplied, with a fair business doing. Bush fruit putting in an appearance, with promise of good supply.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	$\frac{1}{2}$ sieve	0 0 to 0 0	Lemons	case 15 0 to 21 0	
Cherries	$\frac{1}{2}$ sieve	4 0 10 0	Oranges	100 8 0 12 0	
Cobs, Kent	per 100 lbs.	0 0 0 0	Peaches	per doz. 3 0 8 0	
Currants, Red ..	$\frac{1}{2}$ sieve	0 0 0 0	Pears, kitchen ..	dozen 0 0 0 0	
Black	$\frac{1}{2}$ sieve	6 0 6 6	„ dessert	dozen 0 0 0 0	
Figs	dozen	4 0 6 0	Pine Apples English ..	lb. 2 0 3 0	
Gooseberries ..	$\frac{1}{2}$ sieve	1 6 2 0	Strawberries	lb. 0 3 0 3	
Grapes	lb.	1 6 2 6	St. Michael Pines ..	each 3 0 7 0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen 1 0 to 2 0	
Asparagus	bundle	2 0 5 0	Mushrooms	punnet 0 0 1 4	
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress ..	punnet 0 2 0 0	
Beet, Red	dozen	1 0 2 0	Onions	bunch 0 3 0 0	
Broccoli	dozen	0 9 1 0	Parsley	dozen bunches 2 0 3 6	
Brussels Sprouts ..	$\frac{1}{2}$ sieve	0 0 0 0	Parsnips	dozen 1 0 2 0	
Cabbage	dozen	0 0 1 0	Potatoes	cwt. 4 0 5 0	
Capsicums	100	1 6 2 0	„ Kidney	cwt. 4 0 5 0	
Carrots	bunch	0 3 0 4	Rhubarb	bundle 0 4 0 0	
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle 1 0 0 0	
Celery	bundle	1 6 2 0	Scorzouera	bundle 1 6 0 0	
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket 0 0 0 0	
Cucumbers	each	0 3 0 6	Shallots	lb. 0 3 0 0	
Endive	dozen	1 0 2 0	Spinach	bushel 2 0 4 0	
Herbs	bunch	0 2 0 0	Tomatoes	lb. 0 6 0 8	
Leeks	bunch	0 3 0 4	Turnips	bunch 0 6 0 0	



A WALK ROUND THE FARM.

EARLY in June before haymaking began, when every field and meadow had some special attraction—for farm crops are then seen in all the freshness and vigour of early summer growth, free from spot or blemish, except it be stunted growth or poverty of condition—we walked round the home farm to inspect the crops closely, and to see if results so far proved our culture to be sound or otherwise, so that success or failure might serve to render our future efforts and plans more certain. In point of fact, we wished to learn the truth, or as much of it as we could, about our work, for that is the end and aim of all earnest thoughtful inquiry, and it is our intention to tell something of our inspection and its lessons, in proof that we practise as well as preach.

We first came to a field of Winter Oats in superlative condition, the sturdy vigorous growth showing by its deep green hue and its fine bold heads of corn how rich in fertility the soil is, and be it remembered that the fertility was imparted to it by the use of artificial manures as prescribed by Professor Jamieson, half dressings being given in autumn and spring, consisting of steamed bone flour, nitrate of soda, nitrate of potash, and mineral superphosphate, procured

separately and mixed at the farm in the proportions repeatedly given, and which will again be set forth in full detail at the proper season. Three years ago this field was a mere waste of coarse herbage, rushes, and Heather; it now has its third crop of Oats, each crop showing clearly the steady progressive improvement of the land. The lessons evolved by practice here have been clear and unmistakeable. Taken in detail from the beginning they teach us—not to retain an old foul pasture; not to plough in turf, but to pare and burn it, and plough in the ashes, and so destroy the larva of insects, the roots of perennial weeds as well as seeds; to apply a moderate quantity of nitrates in autumn as well as in spring to land sown early with winter corn; to sow corn for several consecutive years on the same land with the confident expectation of an abundant crop if we are careful also to use a sufficient dressing of genuine artificial manures with every crop, and always to sow Winter Oats in preference to Spring Oats upon land of a light or medium staple if it can be had in September or early in October.

In the next field Winter Tares were a full crop sufficiently forward to follow the Trifolium in good time from the October sowing. Square-head Wheat alongside the Tares just bursting into ear gave ample promise of at least sustaining our average yield of a little over 5 quarters an acre; but then it must be stated that this Wheat had the autumn and spring dressings of pure artificial manures, and we could not help wishing that some of the opponents of Professor Jamieson's teaching could see corn treated by his prescriptions. In contrast to such satisfactory results we may mention a large field of Barley upon one of our Suffolk farms, dressed with a dealer's "special" manure before it came into our hands, which even now is one of the worst pieces of Barley upon any of our farms. Can vendors of specially adulterated—we beg pardon, "mixed"—artificial manures wonder if farmers turn away from them in disgust, and vow they will have no more of the vile trash? Field Potatoes came next, and the "earthing" was then being done by a man and boy with a horse and double-breasted plough. The growth of all the sorts was satisfactory, as, indeed, it ought to be, for the land was ploughed in the autumn, cross-harrowed in spring, thirty loads of farmyard manure per acre ploughed in, followed by harrows again. The drills were then made with a double-breasted plough, dressed with pure artificial manure, the Potatoes planted, and covered so that the artificial manure was well blended with the soil into which the roots must first spread, and thus a free strong growth was ensured from the first. A frequent use of the horse and hand hoes had kept weeds under, and with the final "earthing" the process of cultivation was complete. A piece of land next the Potatoes was dressed with artificial manure at the same time for Spring Oats, our intention being to try the effect of liberal treatment in this direction for the sake of comparison with the Winter Oats. Nothing, certainly, could be more satisfactory than the appearance of the Spring Oats, only they will be a month later in ripening for harvest, and the fickle weather in spring time that so often retards the sowing of this crop must not be forgotten.

Again did we see the advantage of sowing Mangold early in April; the seed-germination was quick, and the plant-growth, though somewhat checked by late frosts, has been so vigorous that thinning was done, and horse and hand hoeing had kept down weeds, so that this important work was well out of hand before the haymaking was begun. We are always anxious to get the thinning of all the root crops done that is possible before haymaking, for that is such a critical and important undertaking that it frequently absorbs all available labour on the farm. Carrots for cows and horses in winter, Trifolium, Spring Tares, and meadow Grass for hay were chief among the other crops through which we walked. The Spring Tares, if not wanted for folding, will be ploughed in as a valuable manure, and this will probably be done as grass is so abundant. Trifolium is good gene-

rally this year, and we are glad to find its culture is so general; no crop is of more easy culture, and it is unquestionably most profitable. We have made a considerable quantity of it into hay, which will eventually be chopped and mixed with other food for the horses.

WORK ON THE HOME FARM.

Haymaking continues to be the chief work just now, and we must again call attention to the importance of wind rows, or narrow rows of hay made with small hand rakes, by means of which the hay is not only drawn into little ridges through which the air passes freely, but the numerous locks of grass passed over by the tedding machine are moved and drawn up to the tops of the ridges, and much violent heating prevented in the rick subsequently. By all means use horse rakes and hand drag rakes, but also have plenty of small hand rakes at hand for this special purpose. We hear frequent complaints of blindness in Beans, in some instances so much of it that the plants have been chopped up for silage. Swedes already have a rough leaf or two, and will soon be safe from insects. Peas are podding well, and will be a good average crop. Charlock is so prevalent that pulling or hoeing it could not be done. Wherever it stands well above the corn the heads of bloom have been cut off so as to reduce the seeding as much as possible. If only the few plants of this pest which first appear in a field hitherto free from it were destroyed, it never could have spread throughout the country as it has. Charlocks, Thistles, Docks, Nettles, Rushes, and Couch Grass must have no quarter, and it is only by incessant effort and perseverance that they are to be kept down. Hayricks will be thatched as soon as they have settled slightly. It is well to have this well done, and to have plenty of spars pinned securely near the edges of the thatch to prevent high storms from blowing it off. Neatness is desirable in this work, a well-kept rick-yard being an attractive as it is an important feature on the farm. In these days of portable threshing machines it is desirable to build as many cornricks as possible in the fields as a saving of the labour of carting from a distance during the busy season of harvest, due care being taken to select accessible places near a gate and road. Anything tending to reduce both horse and manual labour is worthy of our best attention. As the cattle yards are cleared of manure let them be examined; any faulty drains set right; gates, enclosures, lodges, and cribs put into thorough repair; all new work tarred or painted. We prefer tar, and have used much of it lately whenever men could be spared to re-tar every fence, gate, or building requiring it. We can buy gas tar at 3d. per gallon, and know nothing so cheap or better suited to its purpose. The interior of lodges and cow houses should be washed with hot lime, and rendered thoroughly sweet and wholesome. Greater attention to this matter would tend materially to check the spread of any infectious diseases.

OUR LETTER BOX.

Scouring Calf (*Steward and Gardener*).—A calf so much reduced by scouring as to be almost a skeleton and unable to rise should be destroyed and an end put to its misery and suffering, for such a case is hopeless. From the extraordinary remedy suggested by your cow leech, we should hardly consider him qualified to attend to the diseases of animals. Generally speaking, scouring is caused by foul water; coarse, indigestible, unwholesome food; by long fasting and subsequent gorging, and by exposure to damp and cold. Our highest veterinary treatment consists in judicious feeding, nutritive food, restricted water supply, laudanum and ether or chlorodyne to abate spasm and pain; iron, acids, and bitters to promote the healthy tone of the weakened membrane, and comfortable protection from wind and weather. Such general advice falls clearly within our province. Specific remedies can hardly be stated without actual examination of an affected animal, and therefore we say, Do your best for other animals with food and shelter, and in every case of illness where simple remedies fail, at once call in a duly qualified veterinary surgeon.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.					Rain
	Barometer at 39° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
June and July.											
Sunday	28	30.146	60.2	52.5	N.E.	59.0	75.3	47.0	118.8	44.8	—
Monday	29	29.975	51.3	52.8	N.	60.8	71.3	52.0	117.5	53.9	—
Tuesday	30	30.022	58.4	51.7	N.	60.8	72.7	52.3	123.5	48.9	—
Wednesday ..	1	30.170	59.7	52.2	N.W.	61.2	71.7	50.8	118.6	45.1	—
Thursday	2	30.213	58.8	55.7	E.	61.5	70.7	49.7	106.2	43.5	—
Friday	3	30.183	64.5	57.3	S.E.	60.8	74.8	55.9	106.5	58.1	—
Saturday	4	30.207	67.2	61.5	N.E.	60.8	79.0	51.0	122.7	45.4	—
		30.131	60.7	54.8		60.7	73.6	51.2	109.0	47.8	—

REMARKS.

28th.—Fine, bright, and warm, but clouded over in evening.

29th.—Dull morning; fine bright afternoon.

30th.—Fine and bright.

1st.—Fine, but rather oppressive.

2nd.—Haze or fog in morning; moderately bright at noon; darker afterwards.

3rd.—Fine and bright, but rather oppressive.

4th.—Fine and warm.

A rainless week, but temperature rather below the average until the last two days.

—G. J. SIMONS.



COMING EVENTS

16	TH	Chiswick Horticultural Show. Helensburgh (Roses).
17	F	Sheffield (two days).
18	S	Wirral (Roses).
19	SUN	SEVENTH SUNDAY AFTER TRINITY.
20	M	
21	TU	Newcastle (Staffs).
22	W	Newcastle-on-Tyne. Great Hasley (Oxon).

PEACH FAILURES.

AFTER a season so hot and dry as 1884, ripening the wood, a good Peach crop was expected this year. From my own observation and the accounts reaching me from other localities the crop is by no means prodigious, indeed both indoors and outdoors it is in some gardens a failure. One correspondent states he has grown Peaches for over twenty years and not had a failure in his early houses until this season, and as this has occurred in two houses of over 60 feet each the loss is considerable. Another correspondent states there is a great promise of fruit this year of all kinds except Peaches, which are a failure even under glass, and several others write similarly, so that there is a remarkable coincidence of facts with my own experience.

The wood of Peaches and Nectarines was very firm in the autumn of last year, but I noticed the buds that give fruit were neither so numerous nor so prominent as they are often seen after a less hot and dry season. In spring the bloom buds swelled tardily, the blossoms expanded weakly; and though they were better under glass than against walls, I noticed particularly that the bees did not visit the flowers. Although making comments unfavourable to the setting of the fruit, I was only laughed at for my seemingly unjustifiable prognostications. The bees had not found them out, and they did not, neither would they, have anything to do with the flowers of the trees against walls. Why did the bees visit the Apricot blossoms and almost entirely neglect those of the Peach and Nectarine? Mark also the difference. Apricots have a crop of fruit, Peaches and Nectarines have not. Clearly the blossoms contained no nectar, and unless this be present will the bees come for pollen alone? I fancy not. Peameal has a powerful aroma sufficiently attractive, and so have flowers if there be nectar.

Whilst on this subject I may mention that the bees were very busy on Pear blossoms much more than on Plums. The former are a full crop; indeed it is a Pear year, but Plums are only thin, except on a north aspect. Apples, again, were only moderately visited, and though the crop may be good it is not equal to the promise as indicated by the blossom. Cherry blossom was also much in request by bees, and the crop is full. Similar remarks apply to Gooseberries—plenty of blossom, the merry hum of bees, and heavy crops of fruit. I might go further. Suffice it to note that though Crocuses bloomed splendidly they were almost neglected by the bees, and they have not a pod of seed where there were a hundred last year. Hyacinths, on the other hand, were very much worked by the bees, and the seeds—we have mostly single varieties—were abundant. Now I make the deduction that the blossoms of the Peach and Nectarine were not perfect; they wanted nectar, and this nectar attracts insects, which liberate the pollen if not brushing it directly on the pistils. I go further, and state that if this nectar be absent and no insects visit the blossom the fruit will not set even if artificial impregnation be practised, as was the case with the Peaches

under glass. This is not an isolated instance, as I have noticed it on former occasions, not only with Peaches, but also with Strawberries in pots, and even with Grapes, the glutinous matter on the stigmas of the latter not being a sign of imperfect organisation, though it may be an obstacle to fertilisation unless removed by some natural or artificial agent, the act of removal being the means by which impregnation is effected. If, on the other hand, the glutinous matter be absent, as it not unfrequently is in Sweetwater, Buckland Sweetwater, Muscat Hamburgh (Black Muscat), and other Grapes when forced early, no pollen or any amount of attempted impregnation will cause the berries to set. I therefore conclude that the nectar is an important secretion essential to the support of the ovules and necessary to fertilisation. I suppose the nectar to be a consequence of the elaboration of the sap in the petals, and that these are quite as important to the flower as the leaves are to the tree—develop according to their formation in embryo. We must trace the cause anterior to the blossoming—viz., fruit buds imperfectly developed in embryo, or to unfavourable climatic conditions at the time of flowering. This last will not hold good, as the result is the same under artificial and therefore genial atmospheric conditions as with trees exposed to the weather outdoors.

If we may not attribute the non-setting to the weather, and we certainly had no frost of consequence, we are obliged to accept the fact of the cause being in the immature development of the buds, and in some essential not being present in sufficient quantity to effect their perfect maturation in the preceding season. This I consider is a clear case of premature ripening of the wood, a condition well known to all forcers of early Peaches, and some varieties exhibit this tendency in a more highly marked degree than others. For instance, varieties with large flowers, such as Early York, Grosse Mignonne, and Noblesse, are much subject to premature bud development, and to casting their buds when they should be swelling, whilst the small-flowered varieties, such as Royal George, are not so liable either to premature bud-development or to casting the buds.

More failures in Peach-cultivation are due to drought than to anything else. We form well-drained borders, and if we have ceased to form them rich, we make them so by surface-dressings and matter in liquid form, which in an ordinary season may be all very well, but in a season like the last the moisture was not proportionate to the greater evaporation. A large surface of Peach foliage exposed to the sun parts with an immense quantity of water, and it has to be abstracted from the soil; therefore the water supply must be proportionate to the evaporation. Want of water is the greatest drawback to successful practice, and it is the one thing most needed, or has been neglected when Peach trees cast their buds. It is no use soaking the border when the house is closed, if the trees have been allowed to become dry after the cessation of growth—it will only bring the buds off in a shower. It is folly to give water in lessened quantity when the fruit is ripening, under the assumption that dryness improves flavour, for it is not cutting short the supplies, but the increased evaporation which a circulation of warm dry air provokes, that imparts flavour, and to keep the soil dry after the crop is cleared, or even when the foliage is maturing, is to prevent the perfect development of the buds, and ensure their developing into imperfect blossoms. An insufficient supply of water is not only a source of danger to the crop—once only may imperil it—and to keep the roots dry or allow them to get dry after the crop is cleared, jeopardises if it does not prove fatal to the future one.

In the case of trees against walls there is a similarity of circumstances. If the season be hot and dry, the soil, from the increased evaporation, becomes dry as dust, and the supplies are not given in proportion; indeed the watering and mulching of fruit borders is much neglected in gardens, sometimes because the water supply is inadequate to the increased

demands of a dry season, though there are cases where there is no excuse but want of observation. Walls are very good, but the soil near them becomes very much drier than it does in the open, as is evidenced by vegetable crops on the border, the growth being much weaker next the wall than it is away from it—the degree of vigour being in proportion from the wall outwards. This only holds good in summer, for in winter the warmth does much, and the moisture is then sufficient for the moderate evaporation going on, whilst in summer the reverse takes place—the evaporation is great and the supply of moisture inadequate. This dryness I consider the cause of the failure of Peach trees after a dry, hot season; indeed, many fruit trees fail to fruit satisfactorily against walls from the circumstance of the soil being dry, the roots run into the soil at a distance from it, and these are deep and fibreless through the frequent stirring of the top spit for the growth of vegetables. The trees may have the benefit of the wall—warmth the roots have not—they have moisture when they need it least, and when wanted most it is drawn from a cold substratum, for which reason alone I conclude cordon trees afford finer fruit than trees with the roots as distant from the stem as the branches extend. The cordons have the roots near the wall, the triennial lifting keeping them there in a medium as congenial as the wall itself is to the trees, and, most important of all, they are well supported during the season of growth, being supplied with water passing through a mulching of rich material, which keeps the roots active near the surface, and transmits support during the best part of the year, when trees left to themselves are languishing, and it is this superiority of cultivation which gives the excellence to fruit on trees trained on the cordon or other dwarfing system.

Then insufficient supplies of water at the roots of fruit trees, especially stone fruit, is a great incentive of red spider, and this pest causing the premature casting of the foliage is a source of imperfect bud-formation, and must be taken into full account in securing a crop of fruit. Clean healthy growth from first to last is essential in the perfection of the present and providing for future crops.

Although insufficient supplies of water or nutriment are provocative of imperfect bud-formation failures sometimes occur through the opposite cause. The borders may be rich and deep, the growth is strong and long-jointed, and the buds formed, if not imperfect, are immature, and though they may expand splendidly and set well it is rarely that the fruit passes the first swelling without being cast, certainly very little of it will pass the stoning satisfactorily. The evil is often aggravated by allowing the trees to have the wood so close as to prevent the free access of light and air, so that the growth is not solidified as made, nor does it ripen well—gumming results, the trees becoming unhealthy and unfruitful. The remedy for this latter state of the trees is lifting, a firmer condition of the soil, and the addition of calcareous matter, allowing greater space for the foliage—i.e., keeping the wood thin, and the growth regulated so as to insure an equalisation of the sap, consequently of vigour throughout the trees.

Peach trees differ in varying soils and climates. In some soils the need for lifting is frequent, which particularly applies to shallow and porous soils, as these need more enrichment than soils of a closer texture, and in consequence the roots meeting with but little resistance are straight with but few ramifications or fibres, and they transmit sap much quicker than those in a tenacious soil, and the wood is soft, long-jointed, badly solidified, and imperfectly matured, therefore the need of lifting to keep the roots at home and to increase their ramifications, which is also increased by well firming the soil.

On the other hand Peach trees in heavy soil—loam of a tenacious nature, yet containing sufficient grit to render it friable for the passage of water; and when of a calcareous nature or its equivalent, as is exhibited in some loams not of a calcareous character as that overlying the freestone formation of the West Riding of York or the red sandstone of

Cheshire, and some parts of Lancashire, especially in the neighbourhood of Liverpool, the trees will continue in fertility for a great many years without any necessity for lifting. I have found, however, that whenever a fruit tree goes wrong the fault mainly arises from the soil and the way trees in it are treated in respect of soil, moisture, and manure, for to be successful the cultivator must so modify his practice as to meet the requirements of the trees under a variety of circumstances.—G. ABBEY.

LEAF MOULD FOR RHODODENDRONS.

A YEAR or two ago Mr. Wright brought under the notice of readers of the Journal the manner of using leaf mould as practised by Belgian nurserymen. It so happened that, having had to deal with a vast accumulation of leaves decayed and undecayed, the notes in question interested me much, as showing, for one thing, the absolute safety of growing plants entirely in leaf soil. The result of one experiment we had made with Rhododendrons has proved so satisfactory that I am induced to send a line or two in order to call attention to this subject again. We had several beds of Rhododendrons to plant, and unfortunately had very poor material to plant them in, the soil being of a half-sandy half-gravelly nature. Peat could be procured by carting from a distance of twelve or thirteen miles, but this was as poor for peat as our natural soil was when compared with fairly good soils. The result was that we reverted to the ancient heap of leaves.

The way the beds were prepared was simple enough. The turf was first skimmed off the surface, then a spit of the soil thus uncovered was wheeled away and utilised in making up irregularities in the lawn near by. The decayed leaves were afterwards carted to the beds thus roughly formed and put on to a thickness of 9 to 12 inches. Among this the Rhododendrons were planted firmly. A little soil was thrown over the surface. These plants were the only ones which were left to their own resources, so far as watering was concerned, of many that were planted at the same time; yet the three seasons in which they have been planted they have grown so rapidly that a process of thinning cannot be long delayed if the plants are to thrive. Many of the shoots are this summer making eight growths, strong and healthy. That the beneficial effect of leaf soil is not confined to these alone is very markedly shown just now in the case of some Foxgloves which were sent me last summer and planted in these beds. Some of these have thrown several flowering stalks, which have already grown to a height of 7 and 8 feet, one stem measured being 4 inches round, and young flowering growths are being thrown out from the axil of each of the large leaves with which the stem is clothed. And so with Primroses which have grown up among the plants. The foliage is at the very least four times stronger than that of plants established on the grass round about, while the clumps are so large that many have had to be removed for fear of their doing damage to the rightful occupants of the beds.

The experience of this case alone is convincing as to the merit of leaf soil when used as it should be. As noted above, we used it to a good thickness, so that when firmed it practically resisted the effect of drought. The thickness of the layer has also had a farther good effect, which I have noticed as being absent when too sparingly used—that is, the roots have had a large field at their disposal. On the other hand, when too sparingly used the roots pick out the leaves first of all and stop growth for a while before fixing on the ordinary soil as a means of making farther progress. Then, I think, as the beds were not raised, but the leaf soil was buried beneath the surface, we gained an incalculable benefit. Rhododendrons will not stand drought, and perhaps the very worst treatment they can receive is to plant them in raised beds.

I may note, in conclusion, that I have seen failures in kitchen garden crops where leaf soil has been used, notably in the case of Celery and Leeks; but the fundamental fault has been a too limited supply of the material. If used in a large enough quantity to carry the plants on without check it is doubtless useful.—B.

SPRING CABBAGES.

FOR insuring good heads in good time more depends upon the time of sowing the seed than inexperienced persons are aware of. Nearly every district has its set time for sowing, a departure therefrom generally ending disadvantageously to those who attempt it. We are somewhat awkwardly situated, and have to strike out a line for ourselves. The climate is favour-

able to gardening, but the soil is heavy and cold, and rests on nearly solid clay, otherwise we might compete more successfully with still more southern counties. Varieties with a weakly constitution are of no use any more than they are in colder localities or other cold soils. At one time I used to be under the impression that the weakness or inclination for one particular variety in a district was a mere fad, but I have been obliged to modify that opinion, as there are strong proofs that a certain variety and a certain time of sowing are desirable and wise in many districts. Sown on July 10th Ellam's Early bolted; sown a fortnight later the plants remained stationary till the spring, and were, in fact, scarcely in advance of those not planted till early in the spring. Veitch's Matchless, on the other hand, under precisely the same treatment, succeeded admirably, and this variety, being sufficiently robust without approaching coarseness either in habit or quality, will be the most extensively planted this autumn.

Market growers that I am acquainted with round London seldom sow Cabbage seed before the third week in July, and in some parts of Kent if I remember rightly the first week, and even the second week, in August is considered the proper time for sowing. As large Cabbages are preferred for the markets, such as Early Enfield, Battersea, and Heartwell Marrow are the most extensively grown, but for private gardens I prefer the last named, as the others are usually somewhat inferior in quality. Immense close hearts are not appreciated by anyone who knows what is good in the way of vegetables, but neat little conical-shaped and only moderately firm heads are. Three of these can be and ought to be grown where one of the large ones are produced, and if a second crop is to be taken from them such as Ellam's Matchless and Heartwell will yield these quite as well as the coarser growers. Hill's Dwarf Incomparable is also worth a trial. It can be planted as thickly as Coleworts, as it makes but few outside leaves, and the hearts small and conical in shape are of excellent quality. Reading All Heart is a great favourite with many, and deservedly so, as it is very profitable, the quality being first-rate. In no case would I advise anyone to rely exclusively on one variety of Cabbage for the spring crops, as they vary in habit somewhat according to the season, and a variety, excellent in every respect one year, may prove disappointing the next.

Having decided what shall be grown, and when it is advisable to sow, the next proceeding is to prepare the seed beds. An open spot is best. A liberal dressing of leaf soil or some substitute should be well mixed with the surface, and the plants later on will lift all the more readily. If the seed is to be sown broadcast, first well damp the finely broken surface, then distribute the seed thinly, and lightly cover with fine soil. If drills are preferred, and one plan will do as well as the other, have them about 1 inch deep, and as thickly as they can be drawn, well moisten them if at all dry, sow very thinly, and level over. In some gardens birds are very apt to pull up the newly germinated seeds, and in this case it is either necessary to net over the beds or to red-lead the seeds before they are sown. The last is a very simple and most effective remedy, though why the birds should refuse to touch the tasteless red lead is a mystery to me. We moisten the seeds in a damp cloth and then well shake them up in a tin containing a small quantity of dry red lead. If the seeds are unduly wetted, say by sprinkling with water, they are apt to clog together in the lead and cannot be sown readily, but since I hit upon the plan of using a damp cloth the birds have not tasted any of our Broccoli, Cabbage, Turnip, and other seeds. Slugs must be kept down by hand-picking and occasional coatings of soot and lime, and if the seedlings come up thickly they ought to be freely thinned out in order that sturdy plants may be obtained. If the first sowing fails or is inadequate, sow more seed at once, and two sowings at an interval of a fortnight between may well be also made by those who are uncertain about the time to sow. As before pointed out, the plants if reared too early are liable to bolt prematurely, while if too late they may not have time to become established before the winter.

It is useless to attempt to grow really good Cabbages on poor ground. They should either be planted on newly and freely manured soil, or in succession to a crop for which the ground was heavily manured, nothing being more suitable than the bed recently cleared of the spring-sown Onions. In the latter case no digging is necessary, all that need be done is to clear off all weeds and generally break up the surface with hoes. The plants will not thrive on land poisoned with manure, as in such positions, if they escape the disease known as clubbing, they yet refuse to root freely, and unless they take good hold of the soil it is very certain the produce will be poor. Light, and perhaps over-manured soils, will be benefited by a sprinkling of

common salt or nitrate of soda, while medium and heavy soils will be improved by a liberal addition of either lime, soot, wood ashes, burnt garden refuse, or a mixture of all procurable, a sprinkling of salt being of good service on all but the heavy clays. In some cases, or where there is a good depth of workable soil, a little of the subsoil may well be mixed with the surface as the ground is being double-dug. It amounts to this, if we manure heavily we must also crop closely, or otherwise the soil is apt to become sour and inert, but we must not expect heavy crops from poor and badly manured ground. The plants should be put out before they are crowding and spoiling each other, and in our case are usually established by the end of September. We also plant rather more thickly than is generally done, as we can neither afford to follow nor believe in the practice of wide planting. For the larger sorts distances of 15 inches in the rows, and the rows 18 inches apart is ample, while those of medium growth, such as Ellam's Matchless and Heartwell, may be safely and most profitably planted 15 inches apart each way, every inch of ground being thus utilised and no coarse heads grown. We plant in shallow drills, well ramming the soil about the roots, and water them in. If it is necessary to plant in dry weather both the seed beds and drills are well moistened a short time prior to planting, this greatly facilitating the work.

Where clubbing is prevalent, or if the plants lift badly, the old-fashioned plan of puddling the roots in a mixture of clayey soil and soot is to be commended; this, to a certain extent, checking the ravages of the insect causing the disease, as well as gives the plants a good start, puddled plants not flagging so badly as others lifted without a ball, and not so treated. Dustings of soot and lime serve to keep down the slugs, and occasional surface hoeing is all that is necessary till the crop is perfected. If left for a second or third crop they frequently prove very profitable, but they exhaust the ground surprisingly. Sewage applied rather strong between the rows appears to suit Cabbages admirably.—W. IGGULDEN.

ORCHID CULTURE—PRUNING.

ONE of the most showy Orchids we have is *Dendrobium densiflorum*, but the great drawback to its usefulness is the short time its flowers remain in perfection. This may be overcome in some degree by having a dozen or more of plants, and placing them into heat at intervals to get them into bloom. I have grown this species in several different ways, but have found it succeed best with the following treatment:—When a plant has flowered I remove all the old growths that have lost their leaves, or have flowered from every node likely to produce blooms, and place it in a temperature of about 60° at night, and from 70° to 80° by day. I am not particular to a few degrees, but act according to the outside temperature. There the plants soon make their young growths. They remain in this temperature until they are matured, when they are removed to a more airy house to thoroughly ripen and rest. During the time the plants are growing they are shaded from the sun and well supplied with water; in fact, they are never allowed to become dry when at rest, for if they lose their roots the young growths do not start so strongly another season.

I have some plants of *D. densiflorum* that have already finished their growths; these will be removed to a more airy house soon, when by autumn they will be thoroughly ripened. Some of this year's growths are more than 2 feet long, and 3 inches in circumference round their thickest part, with six broad green leathery leaves on the upper part of the pseudobulb; from the base of these I hope to get some fine racemes of flowers. Plants that have now finished their growths and are well ripened will flower on this year's growths next season, but I have never succeeded in getting more than two racemes from one growth at the same time, therefore I always keep the growths on the plant until they are two years old, and then, if by chance they are not flowered from every node, they are allowed to remain on another season. These that do not make their growths early in the season seldom flower on the one-year-old pseudobulbs, and often when they are two years old they have not flowered from more than two nodes. These growths should be allowed to remain on the plants till they are three years old, after that age it is seldom they bloom. I grew two plants side by side, one was pruned—that is, had all the old useless growths taken out, the other had all the old growths kept on the plant, both were treated in the same way exactly in other respects. The pruned plant made the best growths and flowered the best. I use nothing but peat and charcoal for potting *D. densiflorum* in, sometimes a little soot water is given them during their growing season. My late employer was so enamoured with

D. densiflorum, that when on his death bed he expressed a desire to see a plant I had then in bloom. The plant was in a 7-inch pot and had fifteen fine racemes of fully expanded blooms on it.

Some people are of opinion that it is essential that the old growths should be left on the plants. This may be so in their native country when they are for weeks together without water; the old growths might then store up some supply of moisture for the green leaves to feed on, but this is only theory on my part. Most plants are improved by cultivation, and why should not Orchids be improved if assisted in their native country like we assist plants in our garden? I pass over your correspondent Mr. B. D. Knox's remarks as not being worthy of notice, except to observe there is a wide difference between a man exhibiting a scientific instrument for an advertisement, and exhibiting a plant to prove that it could be grown under different treatment to the orthodox rule.—H. C. P.

YOUNG VINES FOR EARLY FORCING.

(Continued from page 528, last vol.)

Two years ago a few young Vines were planted with those that had previously been in 14-inch pots. These young Vines were allowed to grow to the centre of the house, which is a low span-roofed structure, and at pruning time were only shortened back 1 or 2 feet, the canes being left sufficiently long for the extreme eye of the cane to reach the roof of another on the same side. These canes directly they commenced breaking were pegged upon the surface of the border as near the front of possible, thus forming a row from end to end of the border. When the shoots had grown a few inches in length the most promising were selected and the remainder removed, the shoots left being about 18 inches or a little more apart. When the shoots were from 6 to 9 inches in length, the canes from which they sprung were covered with a few inches of light soil for the purpose of inducing the formation of roots from every joint where the shoot issued. All shoots that took the lead were pinched when about 18 inches long to give the weaker and later ones a chance of gaining strength, so that the whole would grow evenly. The shoots near the extremity of the canes and close to the root were at first the most vigorous, but the pinching had the desired effect. When they were 18 inches or a little more in length, root-action commenced, and the young canes soon gained strength and grew vigorously. They were allowed to extend about half way up the roof, when they were again pinched and the lateral growths removed to induce the main eye to again lead away. The old fruiting canes were removed, as the crop was cut, which had chiefly been towards the centre of the house. The young canes were then allowed to extend to the ridge of the house on either side, and were again stopped. By this time they had a good number of roots, they were very vigorous, and by the end of the season perfected strong fruiting canes with bold prominent buds towards the ridge of the house. The stopping and pinching of the lateral growths were the same as has been recommended frequently for young Vines in pots. The canes were ripe, and allowed of pruning being done towards the end of September or early in the following month. They were shortened very little, on an average 1 foot each. By this simple process we were in possession of a house full of fruiting canes much stronger and earlier ripened than could possibly have been the case if the Vines had been raised from eyes and grown in the usual way. The labour in production was not one-tenth of what would have been required to produce this number of Vines of the same size and strength from eyes.

It may be interesting to note the effect stopping the leaders had upon the Vines. Those pinched at the eave of the house are decidedly the strongest canes at their base. It may be said these were the strongest to commence with, some of the weaker ones being stopped as well as those that started first into growth. The stopped canes in every instance are showing bunches over a much greater length of their canes than those that were not stopped. Those that were stopped commenced the formation of roots, and then grew afterwards with greater strength and vigour than the unstopped canes. The marked superiority of the stopped canes is so apparent that all will be stopped in the future, and again before they are half way up the roof.

The crop of fruit will be taken from the centre of the house, as near the top of the Vines as possible, which will allow of a strong young cane being brought up from the base and trained to the old stem, the whole of the lower lateral shoots being gradually removed from the old cane as the young one advances in growth. When the fruit has been cut the old canes will be removed and the house will again be full of young canes for the following season's crop.

The Vines certainly will require renewing under this system, but I do not doubt they will continue to bear good crops of fruit for at least five or six years at the very least, and this in a border from 18 to 20 inches in width, and about the former in depth. When young canes are run up annually the entire length of the roof they have a good chance of recruiting themselves for the following year's work. When they require renewing, however, if the border will allow of an addition to its width all the better, then young rods can again be pegged down, and a stock of year-old Vines established in the place of those that had been fruiting. A crop need not be lost, for the canes run up from the old stools can be fruiting towards their tops as usual, while the young canes can be trained to them instead of taking them from the base of the old stool. Undoubtedly the best system of maintaining an early supply of Grapes is to

fruit one side of the house annually while the other is being grown for the following season. By this system of fruiting and resting the Vines alternately as heavy a crop of fruit could be produced from one side of the house annually as if both sides were allowed to carry fruit. The Vines should not be overcropped when they are to go on fruiting for five or six years, but when fruited and then allowed freedom from fruit-bearing the following season they would be capable of carrying nearly double the weight of Grapes. Under this system the Vines would be trained up the roof about 18 inches apart, which would allow ample room for the development of foliage on the close-pinching principle that should be followed. Every alternate cane should be allowed to extend to the ridge of the house, while the remainder should be stopped at about 18 inches below the ridge, which would allow more room for the foliage of the lateral shoots bearing the bunches. The foliage of these Vines must be preserved in good condition until the end of the season, and at pruning time the whole of the rods can be cut close back to the base, and young canes trained up again the following season while the opposite side was bearing fruit. Under this system the Vines, as well as the soil, could easily be renewed either by retaining a few canes free from fruiting, lifting out the soil from amongst them and supplying fresh compost, or by raising sufficient Vines in pots for pegging on the surface of a new border the whole length of one side of the house. This is preferable, no doubt, after a number of years, but under this system of fruiting the canes every alternate year they would remain healthy, retaining their former vigour for many years without being renewed.

I have such faith in this pegging-down plan, that had I a house to plant with permanent Vines I should in future obtain or grow sufficient canes of the sorts required—to save time I should purchase them—and would either plant out the Vines or plunge the pots in the newly made border, pegging down the Vines, then taking up from them temporary as well as permanent canes. This effects a considerable saving of labour, and no Vines raised from eyes would make in one season the same progress, or attain the same strength.

I lay no claim to originality for the system detailed; it may be new, and it may not, but I have never seen it practised elsewhere, nor detailed in any gardening periodical. Those who have Vines in pots that have failed to show fruit this season will be amply repaid, if they require early Grapes another season, if they prepare at once a small border and peg upon the surface the Vines that would otherwise be conveyed to the rubbish heap. They will have by autumn a stock of fruiting canes that will be in good condition for early forcing, and upon which they may rely for a good crop if well and thoroughly ripened with considerably less care and labour than growing Vines from eyes.—WM. BARNES.

OLD-FASHIONED ROSE PRUNING.

ABOUT two or three weeks since I observed a cottage garden, the high cultivation of which had been once approvingly recorded in the pages of the Journal, all aglow with such a blaze of Rose blooms as one does not often see, about a dozen trees (dwarfs), dark and light, of the best varieties of Hybrid Perpetual. On inquiry I found those trees had been pruned late in autumn by shortening the shoots by 3 or 4 inches and then leaving them to Nature. The winter was mild, the spring was late; the little garden has a favourable exposure and the most careful attention, and certainly the results up to this moment are most satisfactory.

But I am by no means dissatisfied with my own practice, based upon the experience of known authorities and followed for years by myself—viz., merely shortening long shoots in autumn, and then as soon after March 1st as may be pruning according to habit and constitution of each individual variety, and in spite of some wet weather in May and ungenial days in June, what a display (July 10th) one has now! Not yet here at its height—later perhaps than others, but enough to repay any labour, any anxiety. Gorgeous blooms of Duke of Teck, rich trusses of Général Jacqueminot, the velvet clusters of Duc de Rohan and La Rosière, the dusky Sultan of Zanzibar and Reynolds Hole, and then the delicate beauty of the paler Roses in every shade of rose, blush, and white. Teas here have done extremely well, and wall Roses carried grand sheets of bloom, Reine Marie Henriette being specially fine in size and shape, charming for her clear violet cerise rose or colouring. Revé d'Or has been very fine and of a deeper tint of yellow than usual. Again I say, How one is repaid! In our northern climate (Mid Lincoln) Roses sometimes may take longer to establish themselves, but patience and perseverance—only wait and work, and success is certain; and the Rose is sweet, and the Rose when she is understood is incomparable.—A. M. B.

LETTUCES ON CELERY RIDGES.

I AM very pleased that your able correspondent, Mr. J. Muir, has drawn attention to the above subject, because I feel that it is well worth attending to. In my present situation we grow all our Lettuces on Celery ridges, and have done so for a number of years. We grow a large quantity for the house, for we cut on an average five dozen every morning all the summer and until Celery comes in the autumn. I am quite sure there

is no finer Lettuce grown than what is produced on Celery ridges, and we seldom lose any young plants by the ravages of slugs, as is generally the case with Lettuces planted on the level.

We are not like your correspondent, as we give to our ridges a very slight manuring before the trenches are thrown out; but this is done, not that the Lettuce may receive the benefit particularly, but that all the ground may be in the same condition when the Celery is taken off. I think it is the great depth of soil that produces such large crisp heads, well worthy the place on an exhibition table, for I have noticed that when earthing Celery that the roots have been cut at a great depth down, like cutting Carrots, Parsnips, or any such tape-like vegetables.

In regard to winter Lettuces, we always throw up a border very high at the board side, so that it forms a sharp slope; the winter rains can then get away from the Lettuces, and out of many thousands we hardly ever lose a dozen plants. This, I am sure, saves a great destruction by slugs, as the bank being continually dry at the top prevents them from travelling, as they would do on land not thrown up in this manner.—H. H., *York*.

ONCIDIUM VEXILLARIUM.

THIS very excellent species may justly rank among the best. The panicle is lax, with about six or seven branches, and it grows about

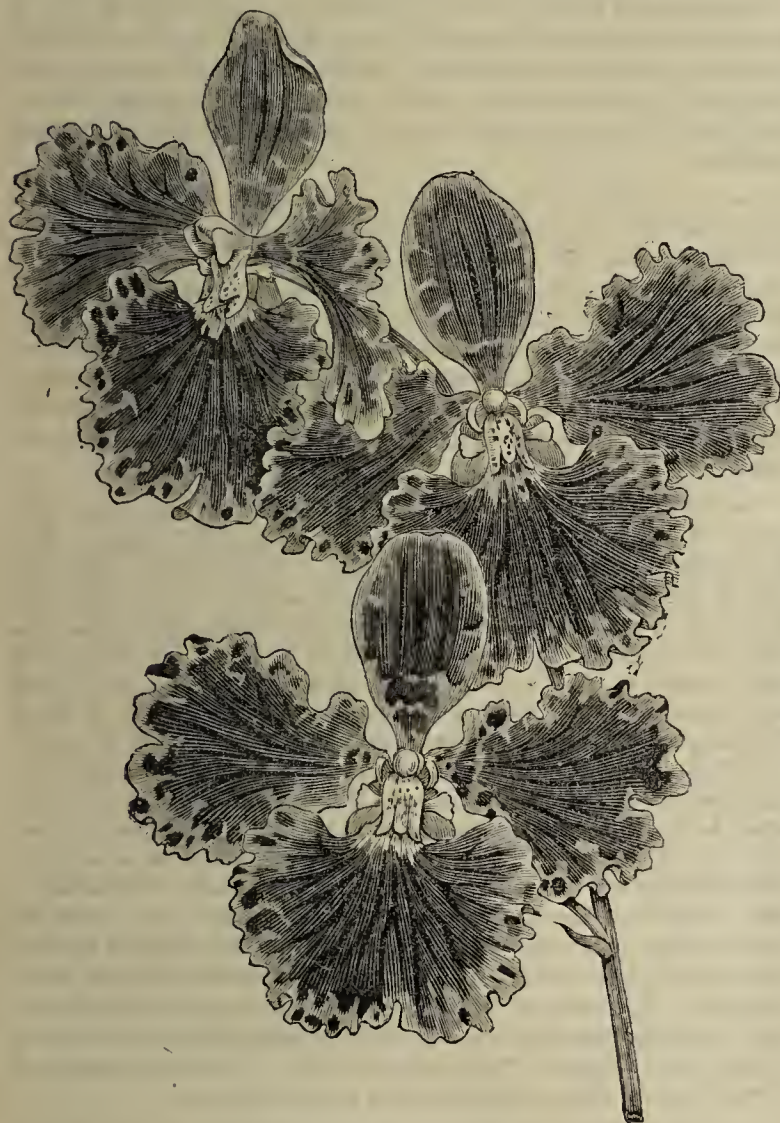


Fig. 7.—*Oncidium vexillarium*.

2 feet high. It is very handsome on account of the number of fairly large flowers, the labellum being $1\frac{1}{2}$ inch across, and of beautiful bright yellow colour. The above name was kindly given me by Professor Reichenbach, who remarks that it is allied to *O. bifolium*, but much grander. It was thought by a well-known cultivator to be *O. varicosum*, but it differs from that species in the labellum, which, instead of being round, has a decided tendency to an oblong shape in the direction of width, and it also differs by having very much shorter wings at the base of the labellum.

It may be in some collections, I believe, as *O. Rogersi*, but it is not, I think, so fine a plant. There are many favourite kinds, however, far less beautiful. Pot culture is best, using peat and sphagnum, and drainage must be carefully attended to, as a good supply of water should be given during the season of growth. The best place for it is at the cool end of the Cattleya house. The illustration was taken from a plant in the Cam-

bridge Botanic Garden, received there from Glasgow by the liberality of Mr. Robert Bullen.—R. I. LYNCH, *Cambridge Botanic Garden*.

THE CUCUMBER DISEASE.

THE head gardener and myself feel very much indebted to you for your answer and illustration in regard to the diseased Cucumber roots, and pressure of work has caused the delay in acknowledging the same. We followed out your advice, and turned out the plants, soil, and everything attached close to them.

We procured soil and manure from different localities, and I am very pleased indeed to be able to state that we have now at the present time one of the finest crop of Cucumbers that ever was grown. I have seen large crops photographed to push forward some particular kind, but never have we seen anything to equal what we have hanging at the present time, although it is only seven and five weeks respectively since the plants were planted into their present quarters.

I may here add that we have several kinds in the same house—viz., Telegraph, Telephone, Paragon, Metcalf's, and Duke of Albany; but the best in quality and productiveness are Telegraph, Duke of Albany, Paragon, and Telephone. Paragon being an excellent kind will be much grown by us in the future, but Metcalf's will not again be attempted, as with us it is much below the average.—H. H., *York*.

THIS most troublesome (so-called) Cucumber disease—the withering and decay of the foliage—according to my experience, is easily prevented. One or two correspondents came very near my views lately, one recommending fresh soil and fumigating, the other fresh soil and quicklime; but my remedy is to give this plant healthy food and air from first to grow in. The best that I can get is loam, such as green sods off a roadside, or the edging of the walks chopped roughly with the spade and put in the frame or house as required. This, with free ventilation as the weather permits, will give good returns. I am convinced this affection of the Cucumbers is caused by superabundance of the gases evaporating from unhealthy soil and confined in the frames.—GEO. MURRAY, *The Gardens, West Ashby Manor, Horncastle*.

[We suspect our correspondent has not had to combat the terrible disease that for so long baffled the efforts of such excellent cultivators as Mr. William Taylor when at Longleat, and Mr. Harding at Orton Hall, and others to subdue it.]

MR. SLAUGHTER'S ROSE GARDEN.

Is there a rosarian who has not heard of the name and fame of Mr. Alfred Slaughter? Within the last three years he has made such a sensation in the Rose world, that questions have been raised as to where and how he grows such beautiful flowers. Curiosity has been further stimulated when Mr. Slaughter has openly avowed that all his Roses were produced from a small garden barely one-eighth of an acre in extent. Experienced growers were incredulous. They who grew Roses by the acre, and who sometimes found themselves not up to form on show days, believed it was simply impossible. Determined to satisfy myself, I, with my friend Mr. John Sargent of Reigate, well skilled in the secrets of Rose-growing, and equally desirous to see how such results as Mr. Slaughter achieves were attained, took the train to Steyning on the 6th inst., and surprised Mr. Slaughter in his preparations for the National Rose Show. He received us most courteously and at once conducted us over his garden, and explained his method of cultivating the Rose for exhibition. What a strange sight presented itself! Fancy might have led us to expect one blaze of bloom. We looked in vain. Instead of Roses, we saw, indeed, a tiny garden, looking more like a refuge for old rush hats, tin pots, and decayed umbrellas. Then there was an appearance of bushes in curl papers. These with sundry other contrivances we found to be merely protections from the blazing sun, for underneath of most of these hats, pots, and umbrellas was a blushing Rose, and in the curl papers a lovely Tea, safe and snug, waiting to be removed to the exhibition box.

I will now describe the garden. It is a triangular piece of ground really but one-eighth of an acre in extent, on a slope facing the north-west. The trees are planted hut 1 foot apart with 2 feet between the rows; each tree is only allowed to make from five to nine shoots, and every shoot is tied out to a stick, while all side ones are promptly removed; consequently the strength of the plant is concentrated on a few flowers. The ground is the natural soil of the district, but heavily manured in the autumn and mulched in the spring with cow dung. The total number of plants is between 1400 and 1500. This is the whole of the material with which the results are achieved. "The secret of my success," Mr. Slaughter says, "is that I do everything myself. I bud, prune, and do all that is required. The only assistance I ever have is in watering. I work all the year round amongst my Roses and keep them always going. It is a great mistake to neglect them at any time. By the plan I adopt I hardly have any bad blooms."

After all this is but simple common sense. A Rose is like a racehorse, which must be properly trained and ridden to win the race. Mr. Slaughter is to be compared to a good jockey who knows exactly what his horse can do. His practice disposes of the old theory that to be a successful prizewinner it is necessary to have a very large number of Roses. Quality, not quantity, is what he aims at, with the following results:—In 1883 he won forty-four prizes and the trophy; in 1884, thirty-eight prizes; and this season he has gained already twenty-one prizes at six shows. At Tonbridge and Sutton he took the four first prizes, but at the

National he was not successful. He evidently over-estimated his strength, and flew at too high game. To exhibit 150 Roses against such competition and without assistance was beyond his powers.

Thus the amateur with limited means may derive much encouragement. He will see that a small garden has its advantage, each plant receiving an amount of care and supervision that will produce more satisfactory results than a larger number.—F. C. PAWLE, *Hon. Sec. to the Reigate Rose Association*.



At a general meeting of the ROYAL HORTICULTURAL SOCIETY, held last Tuesday, Mr. Maurice Young, F.R.H.S., in the chair, the following candidates were unanimously elected Fellows—viz., The Comte de Valhamey, Wm. Ellis, Wm. R. Harford, James Higgins, G. C. Leaver, Sir Herbert E. Maxwell, Bart., M.P., Mrs. Spencer Meade, A. E. S. Sebright, W. H. Smith.

— THE ninth Exhibition of the NATIONAL CARNATION AND PICOTEE SOCIETY (southern section) will be held in the conservatory of the Royal Horticultural Society on July 28th. The Treasurer, Mr. H. A. Rolt, 170, Hartfield Road, New Wimbledon, will be glad to receive subscriptions or donations to make the Exhibition a financial success. He requires £20 more than he has yet received. The prizes have to be paid immediately after the Exhibition. A few friends came forward and generously subscribed the funds to make the Auricula Exhibition a financial success. The Committee hope that the more popular Carnation Exhibition may receive at least equal support. A few old subscribers annually fall off, and if each member would obtain one new subscriber the success of the Exhibition would be assured. Intending exhibitors will please to send their entries to Mr. Barron, Royal Horticultural Society, South Kensington, at least four clear days before the 28th.

— A CHRYSANTHEMUM SHOW IN MAY.—Some years ago Mr. Forsyth was a well-known exhibitor of Chrysanthemums at the London shows, and assisted greatly in extending the popularity of that plant by his productions. Now he is performing a similar office in New Zealand, and has succeeded in forming a Society which has held several shows. The *North Otago Times* of May 11th, just to hand, records the success of an exhibition held two days previous, and remarks that it "more than exceeded the anticipations of those who went so far as to say it would be the best thing of the kind ever held in the colony, and those who have witnessed the Chrysanthemum shows of the old country say it was better than anything they ever saw there." Mr. Forsyth was one of the principal prizetakers, and we congratulate our far-away friends on their success with a plant which must bring to some very pleasant memories of the mother country.

— MR. A. J. BALLHATCHET, who has been gardener and bailiff to Dr. Temple, late Bishop of Exeter, for six years, continues in his Lordship's service as head gardener and bailiff at the Bishop of London's residence, Fulham Palace.

— Is sufficient of the NIGHT-SCENTED STOCK, *Matthiola bicornis*, grown in gardens? No plant is more easy to grow, as the seed only requires to be sown like that of any other hardy annual, and there is no flower that renders gardens more delightful after nightfall than this highly fragrant Stock. For growing near windows that are open during the sultry nights of summer this simple annual has claims that are not surpassed, if equalled, by any other plant. It is not striking in appearance, but is still pretty, while its perfume after dark is as wonderful as it is powerful and refreshing. In the daytime the flowers are quite scentless, but at night they are delicious, and everybody having a bit of land, rich or poor, may grow them.

— MESSRS. INLEE & SANKEY, the London agents of Messrs. Balfour and Co., Longton, Staffordshire, have sent us examples of FLOWER POTS of a very superior character, both as regards design, material, and workmanship. For halls, balconies, windows, prominent positions in conservatories—in fact, wherever plants are required in something more presentable than common flower pots, these very neat and chastely ornamental forms will be acceptable, and without doubt plants will

thrive in them at least as well as in ordinary flower pots. The new ware is red, smooth, appropriate for the purpose, in excellent taste, and considering its quality we think the reverse of costly.

— THE following GARDENING APPOINTMENTS have been made through Messrs. John Laing & Co., Forest Hill Nurseries:—Mr. Barnett as head gardener to — Miller, Esq., Cedar Villa, Kensington. Mr. Bond, lately at Beechholme, New Hampton, as head gardener to H. Barry, Esq., Bush Hill House, Winchmore Hill, Middlesex. Mr. Leiper as head gardener to W. Wilson, Esq., Parkholme, Richmond.

— THE eighteenth annual Show of the CHEADLE FLORAL AND HORTICULTURAL SOCIETY will be held in Dr. Godson's field on August 21st and 22nd this year, when prizes will be offered in eighty-two classes for plants, fruits, flowers, and vegetables. In the open and amateurs' classes for ten stove and greenhouse plants the prizes are respectively £10, £7, and £4. This is invariably one of the best Exhibitions in the district, and it is expected that the Show this season will fully equal those of previous years.

— IN referring to the ROSE LUSIADES, which was sent out on the Continent some time ago at the price of 50 francs, M.M. Soupert et Notting, writing to the *Journal des Roses*, state that they have flowered the plant, and they "certify that it is nothing else but Noisette Celine Forestier." The flowers were said to be golden yellow with carmine spots, and the announcement caused a sensation amongst Continental rosarians.

— A CORRESPONDENT sends the appended note. "At a recent meeting of the French Academy of Science the question of POISONS IN EDIBLE MUSHROOMS was discussed, and M.M. Roux and Houde presented a report upon some poisonous products which they had obtained from Mushrooms purchased in the market. Half the Mushrooms were eaten fresh without any bad result, the other half was allowed to putrefy to a slight extent, and were then submitted to treatment with a view to extract the alkaloids. Four were separated, and these, when injected into the tissues of guinea pigs, brought about death with symptoms of intoxication."

— THE ODOURS OF ROSES have been classed in seventeen divisions as follows:—"Sweet Briar scent, as in the garden variety; Moss Rose scent, as in common Moss and family; Austrian Briar scent, as in Copper Austrian and family; Musk Rose scent, as in Narcissus, old Musk and family; Myrrh scent, as in Ayrshire splendens; China Rose scent, an astringent refreshing scent, as in old Monthly China and many others; Damask Perpetual scent, as in Rose du Roi, &c.; Scotch Rose scent, as in the early double Scotch; Violet scent, as in White Banksia; Old Cabbage scent, as in the well-known double Provence; Otto Perpetual scent, as in Charles Lefebvre, Madame Knorr, &c.; true Perpetual scent, as in Chabrand, Pierre Notting, &c.; Old Tea scent, as in the old yellow Tea or Magnolia Rose, and others almost unpleasantly strong for some tastes; Sweet Tea scent, as in Goubalt, Maréchal Niel, &c.; Hybrid Tea scent, as in La France; Nectarine, or fruit scent, as in Socrates, Jaune Desprez, Aline Sisley, &c.; and the Verdier scent, represented more or less by all the Victor Verdier hybrids, such as Eugénie Verdier, Marquise de Castellane, Countess of Oxford, Marie Finger, &c. The petals of the highly scented varieties have on their inner surface minute perfume glands or vesicles, containing the highly volatile essence, under the microscope distinctly visible. Those on the petals of Sweet Briar and Moss are almost visible to the naked eye."

— AN interesting letter from the naturalist of the Afghan Delimitation Commission, Surgeon-Major Aitchison, to Sir Joseph Hooker, describing the FLORA OF NORTHERN AFGHANISTAN, is published in *Nature* of the 8th inst. He mentions that in this tour he collected about 1200 specimens, representing one hundred species, many of which are not in cultivation. One plant is especially mentioned as likely to be of garden value—namely, *Rosa Margerita*, respecting which he states that "it covers the whole country in localised patches, and being dwarf in habit, not above 2 feet, the flowers are seen to perfection. They open out, expanding almost flat, when the brilliant eyes formed by the claret-coloured bases of the petals give it quite a character." There are also some floral districts thus described:—"From the moment of entering these valleys they seem a mass of colour—one from Buttercups (one species only), another from a Poppy, the bed of a stream purple with a tall Onion, and the interstices green with various Grasses."

— MESSRS. RICHARD SMITH & Co, Worcester, have sent us sprays

of WHINHAMS INDUSTRY GOOSEBERRY, presumably an American variety. The sprays are heavily clustered with large fruit so crowded together it might be gathered in handfuls. When ripe it is red. At present it is quite green, and whatever the quality may be when fully developed, such examples as those before us clearly indicate the great prospective value of the variety for gathering green for market purposes, as it appears to possess the coveted properties of earliness, size, and extraordinary productiveness.

— THE Committee of the PRIMULA CONFERENCE announce that the Exhibition will take place in connection with the National Auricula Society, April 23rd and 24th, the following provisional programme having been drawn up:—Class I., The Auricula; II., The Polyanthus; III., Varieties of *Primula Sieboldi*; IV., Varieties of *Primula sinensis*; V., European species and varieties of the genus *Primula*; VI., Himalayan species and varieties of the genus *Primula*; VII., Chinese and Japanese varieties of the genus *Primula*; VIII., American and Japanese varieties of the genus *Primula*; IX., Species and varieties of *Primula* not included in the above; X., Plants allied to the genus *Primula*; XI., Specimens, models, and drawings illustrative of the structure and mode of growth of the Primulaceous plants. The meeting and reading of papers and discussion will take place on April 24th, 1886, the following being the programme as at present arranged:—1, The origin of the florists' Auricula; 2, In what directions should efforts be made with the view of improving the florists' flowers belonging to the genus *Primula*; 3, The nomenclature of Alpine Primulas; 4, Culture of hardy Primulas; 5, Root, structure, and mode of growth, as affording indications of the probable best culture.

— THE following is the SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, in June, as recorded by Mr. Joseph Mallender:—Mean temperature of month, 56.5°; maximum on the 4th, 80.9; minimum on the 27th, 33.5°; maximum in sun on the 15th, 129.3°; minimum on grass on the 10th, 29.2°; mean temperature of soil 1 foot deep, 57.7°; mean temperature of air at 9 A.M., 58.4°. Warmest day the 5th; coldest day the 10th. Nights below 32° in shade, 0; on grass, 3. Total duration of sunshine 175.5 hours, or 35 per cent. Maximum duration in one day, on the 27th, 14 hours; four sunless days. Total rainfall, 3.65 inches. Maximum fall in twenty-four hours on the 7th, 10.5 inches. Rain fell on twelve days. The mean temperature was slightly higher than any of the last six years, which have been very uniform. Maximum temperature higher than in any June since 1878. Rainfall more than in any of the last ten years except 1882. 2.4 inches fell on 6th, 7th, and 8th; and 1.0 inch on the 23rd and 24th, the rest of the month being dry. Sunshine more than in any of the last four years.

— A CORRESPONDENT of an American contemporary thus refers to Mr. JAY GOULD'S GARDEN AT IRVINGTON, NEW YORK:—"Everyone has an idea that Mr. Gould has an exceptionally fine property. Few realise, however, that it is fast becoming a place which will eventually rank with some of the best of those in Europe. The grounds are very extensive—several hundred acres, and the portions near the house are beautifully varied in character. The immediate foreground slopes to the Hudson River, and Mr. Mangold, Mr. Gould's superintendent, has introduced some particularly bold and effective groups of trees, which serve to heighten and emphasise the naturally bold character of the scenery in a particularly happy manner. Much of the planting and grouping is yet in a transition state. The magnificent new range of conservatories erected four years ago are now completely filled and yielding splendid results. The luxuriant health and high keeping of every department speaks volumes for the thorough practical knowledge and executive ability of Mr. Mangold. In the Palm house he had collected over three hundred species of Palms, and by the use of stages the very large house is already completely filled. There are fifteen houses in the conservatory range, embracing four vineries, Peach houses, Camellia house, Rhododendron house, Fern house, Orchid house, Rose house, Pitcher Plants (Crotons, and greenhouses. Beside the main range there is a range or smaller but indispensable houses; in these are many of the gems of the collection, *Lapageria alba*, *Ouvirandra fenestralis*, *Bertolonias*, and hundreds of others.

LORD NAPIER NECTARINE.

If I remember rightly this variety was condemned as being useless either in an unheated house or the open air, and the fact of Mr. Hudson succeeding so well with it in an early house is no proof that Mr. Rivers' introduction was wrongly disparaged. We, too, find it very productive

and good in every respect when forced, being much superior to any other variety yet tried in an early house, but in an unheated house last season it was simply useless. The fruit were comparatively small and much scarred, the skin presenting a patchy dirty appearance, while the quality was anything but good. It is no fault of the house that the fruit was so poor, as the position could not well be improved upon. Neither do I think the treatment was much at fault, as other sorts, both of Peaches and Nectarines, perfected good crops. It may be a too free or a too late use of the syringe or engine has much to do with the disfiguring the fruit, as I observed that the fruit of Lord Napier in our early house were scarred wherever the water hung the longest, and an early discontinuance of syringing in the case of this variety will now be tried in the late house. I should be very sorry to have to discontinue the culture of this Nectarine in the unheated house, especially as the tree is growing and cropping most satisfactorily, but if it fails this season it will have to make room for a more reliable sort. If Mr. Hudson, or any other cultivator, will suggest the treatment that will insure the production in a cool house of fruit equal to or approaching in quality those easily obtained in an early house, he will confer a great favour on myself, and doubtless many other readers of the *Journal of Horticulture*.—W. IGGULDEN.

ROSE SHOWS.

THE NATIONAL ROSE SOCIETY (NORTHERN SECTION).

JULY 11TH.

THIS Exhibition was held on the date named in the large conservatory in the Botanic Gardens, Old Trafford, Manchester, when a really magnificent display was made. If not numerically so large as last year the quality of the flowers was certainly above that of previous displays, and all those concerned in it may be heartily congratulated upon the result. The exhibits were arranged on a central table and the side stages of the conservatory, which large amount of space was with the help of a few boxes of "spares" and non-competing stands well filled up. The central table was, indeed, handsome, as the numerous boxes of Roses were set off to the best advantage with excellent plants of Crotons, Dracenas, and Palms arranged by Messrs. R. P. Ker & Son, Aigburth Nurseries, Liverpool. But to pay proper respect to the queen of flowers we unhesitatingly assert that indwellers in Cottonopolis who flocked to Old Trafford in such large numbers have never seen a finer lot of flowers. Evidently they were fully appreciated. Granted the leading exhibits were staged by southern growers; yet still others not of the sunny south were of the first order. Between three and four thousand blooms were staged for competition, most of course by the trade, as most certainly there was not such keen competition in some of the amateur classes as could be desired. Messrs. Paul & Son maintained their honour in the large class for seventy-two blooms, and fine they were, very large, with scarcely a bloom too far gone, yet there was a rather coarse appearance in some. Both the Cants were somewhat below their usual standard of excellence. The Teas were weak, and many of the H.P.'s small, but all were of the best colour and very fresh. The Cranston Nursery Company came out well. It was a close run between them and Paul & Son, but the latter had the advantage of extra size. Mr. George Prince's Teas were magnificent; they could hardly fail to win. They and the others of the same class were the admiration of the Show. The majority of the amateur classes were good in character—especially good were those staged by Rev. Joseph Pemberton and W. J. Grant, Esq., while the Teas belonging to T. B. Hall, Esq., Rock Ferry, were simply perfection. A grand bloom of *Souvenir d'Elise Vardon* was selected for the silver medal, and one of Lady Mary Fitzwilliam for a similar honour.

The miscellaneous exhibits were not abundant but good. In addition to Messrs. Ker's foliage plants we noticed a good box of the Rose Mrs. Allen Richardson, prettily arranged with Maidenhair Fern, staged by Mr. John House. A fine lot of Mrs. Caroline Swales was shown by the raiser Mr. G. Swales, nurseryman, Beverley, Yorkshire; it is a beautiful deep blush Tea variety. A rich collection of species and varieties of curious Roses was shown by S. Barlow, Esq., Middleton, including Damasks, Fairy, Cluster, Single, and other kinds. Particularly showy were good bunches of Persian Yellow, old Crimson Damask, Paquerette, Crimson Moss, W. A. Richardson, Mignonette, &c. We learnt previous to leaving that the number of visitors was much in excess of last year, the weather being splendid. Much is due to Mr. Bruce Findlay, the energetic Curator, for his management of the show.

NURSERYMEN'S CLASSES.—In the premier class for seventy-two distinct varieties there were four magnificent collections staged, three of which vied closely with each other for the highest honours. Both of the Cants staged, but not in such strong force as usual. The Cranston Nursery Company, Hereford, and Messrs. Paul & Son, Cheshunt, had grand lots. The strongest competition was between Messrs. Cranston's and Paul & Son's stands, most of the blooms of each were of the highest merit. Some of them were weak in point of size. The Judges, however, awarded the highest honour to Messrs. Paul & Son, in whose collection the Teas certainly were very strong, some of them being unusually fine, especially *Niphetos*, *Innocente Pirola*, and *Comtesse de Nadallac*. The varieties staged were as follows:—Back row—Edouard Morren, La France, François Fontaine, splendid; François Levet, Duc de Rohan, Capt. Christy, a magnificent bloom; Ulrich Brunner, Abel Carrière, Madame Eugène Verdier, Sénateur Vaisse, splendid; *Niphetos*, Mons. Alfred Dumesnil, Madame Isaac Carrière, Marguerite de St. Amand, grand; Marie Rady, Innocente Pirola, Dr. Andry, Pride of Waltham, magnificent; François Michelon, Madame Lacharme, Sultan of Zauzibar, Maréchal Niel, unusually fine; Maréchal P. Wilder, and Queen of Queens, a splendid Rose. Middle row—Star of Waltham, Boieldieu, *Souvenir d'Elise Vardon*, grand; A. K. Williams, Koelle, Mlle. Eugénie Verdier, Maurice Bernardin, Marie Baumann, George Moreau, grand; A. K. Williams, the best bloom we have seen this season; Jean Ducher, Baronne de Medin, La Duchesse de Morny, Madame Gabriel Luizet, Louis Van Houtte, Catherine Mermet, Lady Sheffield, Merveille de Lyon, and Mrs. Baker, splendid. Front row—Emily Laxton, Jules Finger, S. Reynolds Hole, fine; Madame Cusina, Duchesse de Caylus, Marie Cointet, Madame Prosper Laugier, Pirola.

Notting, Countess of Rosebery, splendid; Duke of Teck, Marie Verdier, Souvenir de Madame A'vy, Horace Vernet, Comtesse de Paris, Duke of Albany, very large; Alba Rosea, Madame Alphonse de Lavalley, Madame Thérèse Levet, Horace Verdier, grand; Souvenir d'un Ami, Comte Raimbaud, Comtesse de Nadaillac, immense; Edouard Andre, and Comtesse de Serenyi. The second fell to Cranston & Co., Hereford, the whole of whose Roses were fresh and well coloured, and they ran the premier collection very closely, but some of those in the front row were rather small. Cut blooms were Général Jacqueminot, Constantin Tretiakoff, unusually fine; Marie Baumann, Duchess of Bedford, Sultan of Zanzibar, Baroness Rothschild, magnificent; Madame Charles Wood, Lady Mary Fitzwilliam, an immense bloom; Dr. Andry, Madame Lacharme, Marquise de Castellane, Merveille de Lyon, A. K. Williams, grand; Le Havre, Mary Pochin, Comtesse de Serenyi, Lord Macaulay, and Horace Vernet. Mr. B. R. Cant and Mr. F. Cant were third and fourth respectively, both containing many magnificent blooms, but the Teas were weak in the third lot. Special mention may be made of Le Havre, Madame Charles Wood, Merveille de Lyon, A. K. Williams, Duke of Edinburgh, Madame Gabriel Luizet, magnificent; Madame Etienne Levet, Prince Arthur, Madame Prosper Laugier, and Souvenir d'un Ami.

In the class for thirty-six distinct triplets there were four lots staged, Messrs. Paul & Son again taking the lead with a collection which could scarcely be beaten; it was many points ahead of any of the others. The following were the varieties shown:—A. K. Williams, excellent; Maréchal Niel, Madame Noman, Néruda, Queen of Queens, again splendid; Pride of Waltham, Star of Waltham, Devonensis, Comtesse d'Oxford, Marguerite de St. Amand very large, Marie Rady, Merveille de Lyon, Ulrich Brunner, Maréchal P. Wilder splendid, Innocente Pirola, Charles Lefebvre, Madame Gabriel Luizet, magnificent; Sénateur Vaisse, Madame Lacharme, Alfred Colomb, Captain Christy, Edward Andry, Souvenir d'Elise Vardon, Madame Prosper Laugier, Jean Ducher, immense; Marie Baumann, La France, Catherine Mermet, Duke of Edinburgh, Niphotos, Countess of Rosebery, Horace Vernet, Beauty of Waltham, Edward Morren, Paul Neron, Dr. Andry, and Duke of Teck. The second fell to Mr. George Prince, Oxford, with very meritorious standards, the Teas and Noisettes being especially strong and good. The following were the best staged:—Niphotos, Lady Mary Fitzwilliam, grand; Marcelin Rhoda, very splendid; Mdle. Marie Finger, Marie V. Houtte, Mons. Noman, Catherine Mermet, Madame Gabriel Luizet, Souvenir d'Elise Vardon, magnificent; Merveille de Lyon, Madame de Watteville, most attractive; Princess of Wales, Maréchal Niel, and Violette Bouyer. The third and fourth awards were given to Mr. B. R. Cant and Cranston Company; the third collection staged some fine H.P.'s, notably A. K. Williams, Duke of Wellington, Duke of Edinburgh, and Marie Baumann.

For eighteen varieties, Teas or Noisettes, three splendid stands were staged. Especially praiseworthy was the leading one shown by Mr. George Prince; finer blooms could scarcely be exhibited. Back row.—Innocente Pirola, Maréchal Niel, Souvenir d'Elise Vardon, Jean Ducher, Niphotos, Annie Ollivier. Middle row.—Comtesse de Nadaillac, Hon. Edith Gifford, Madame Cusin, Alba Rosea, Louis Van Houtte, and Catherine Mermet. Front row.—Amazone, grand; Souvenir de Madame Pernet, Madame Marie Arnaud, Souvenir d'un Ami, Francisca Kruger, and Rubens. Messrs. Paul & Son, Cheshunt, were second, and Mr. B. R. Cant, third. There was not a bad bloom in either stand. The Cheshunt lot included magnificent blooms of Maréchal Niel, Alba Rosea, Souvenir d'un Ami, Comtesse de Nadaillac, and Caroline Kuster. Mr. Cant had superb flowers of Madame de Watteville, Maréchal Niel, Madame Cusin, and Souvenir d'Elise Vardon.

For thirty-six distinct varieties there was strong competition, not less than ten stands being staged, and on the whole most creditable. It was rather a difficult matter to decide between the two leading collections, but the palm fell to Mr. John House, Peterborough, whose lot throughout was first-class. Back row.—A. Colomb, Merveille de Lyon, Sir Garnet Wolseley, Marguerite de St. Amand, Countess of Oxford, splendid; Comtesse de Nadaillac, Duke of Wellington, May Quennell, Horace Vernet, Etienne Levet, Mons. E. Y. Teas, and Boieldieu. Middle row.—La France, A. K. Williams, Ulrich Brunner, Maréchal Niel, Duc de Rohan, François Michelin, Marie Rady, François Levet, Sénateur Vaisse, Duchesse de Vallombrosa, and Le Havre. Front row.—Marie Baumann, Captain Christy, Lord Macaulay, Catherine Mermet, Constantin Tretiakoff, Souvenir d'Elise, Star of Waltham, Anna Ollivier, Louis Van Houtte, Innocente Pirola, Abel Carrière, and Madame Lacharme. The second fell to Messrs. Curtis, Sanford, & Co., Torquay, whose finest blooms were Etienne Levet, Général Jacqueminot, Marie Rady, Merveille de Lyon, Baroness Rothschild, Madame G. Luizet, Barthelemy Joubert, and Duchesse de Morny. Messrs. J. Burrell & Co., Cambridge, was third, and Mr. H. Merryweather, Southwell, fourth.

For eighteen distinct triplets Mr. House again took the lead with splendid blooms, followed by Messrs. Curtis, Sanford, & Co., whose lot was also excellent. The premier stand consisted of the following varieties:—La France, Ulrich Brunner, Lady Mary Fitzwilliam, immense blooms; A. K. Williams, Merveille de Lyon, Louis Van Houtte, grand; Marie Baumann, Marguerite de St. Amand, Mons. E. Y. Teas, Catherine Mermet, A. Colomb, Baroness Rothschild, Madame G. Luizet, Horace Vernet, François Michelin, Marie Rady, Countess of Oxford, and Camille Bernardin. The Torquay exhibit included splendid blooms of Madame G. Luizet, Barthelemy Joubert, Merveille de Lyon, Général Jacqueminot, and Alfred Dumesnil. Messrs. John Jeffries & Son, Cirencester, were third with a fine lot. Special note was made of Madame Cusin, Niphotos, Horace Vernet, and Madame Charles Wood.

Mr. House was again first for twelve Tea or Noisette varieties, staging, if possible, above his usual style for such varieties. The following were staged:—Madame Willermoz, Maréchal Niel, Madame Bernardin, Jean Ducher, Souvenir d'Elise, Niphotos, Comtesse de Nadaillac, Souvenir de Paul Neyron, Anna Ollivier, Catherine Mermet, Devonensis, and Innocente Pirola. The second and third fell to Mr. J. Mattock, Headingley Nursery, Oxford, and Messrs. John Jeffries & Son, Cirencester.

AMATEUR CLASSES (Division C).—There were five collections of thirty-six distinct varieties staged, all of which were of high merit, the two leading ones were exceptionally good. The Rev. Jos. Pemberton, Romford,

took the lead, however, although it was generally admitted his stands were most keenly contested by the second lot belonging to W. J. Grant, Esq., Hope End Farm. The premier collection were as follows:—Back row—Star of Waltham, exceptionally good; La France, Exposition de Brie, Madame E. Verdier, Duke of Wellington, Etienne Levet, Ulrich Brunner, Mdle. E. Verdier, grand; John Stuart Mill, splendid; Marguerite de St. Amand, Horace Vernet, and Jules Finger. Middle row—François Michelin, Baron Boncenne, Comtesse d'Oxford, A. K. Williams, grand; Souvenir d'Elise, Louis Van Houtte, Madame H. Jamain, Marquise de Gibot, Niphotos, Mons. E. Y. Teas, Madame C. Kuster, and Auguste Rigotard. Front row—Madame Lambard, splendid; Etoile de Lyon, Harrison Weir, excellent; Duchesse de Vallombrosa, Dr. Andry, Innocente Pirola, Charles Lefebvre, Catherine Mermet, Abel Carrière, Jean Ducher, Pride of Waltham, and Madame G. Luizet. Mr. Grant's exhibit included many magnificent blooms, of which we may well mention Marie Cointet, Caroline Kuster, Horace Vernet, La France, Constantin Tretiakoff, Souvenir d'un Ami, and Madame G. Luizet. T. B. Hall, Esq., Larch Wood, Rock Ferry, was third, and F. W. Girdlestone, Esq., Sunningdale, Berks, fourth. The Rock Ferry Roses were most creditable. In the class for twelve distinct triplets W. J. Grant, Esq., was well to the front with a magnificent stand charmingly arranged, the lights being most effectively disposed. The following kinds were staged:—Ulrich Brunner, La France, Marie Rady, François Michelin, Constantin Tretiakoff, Marie Finger, A. Colomb, Duchesse de Vallombrosa, Beauty of Waltham, Madame G. Luizet, Louis Van Houtte, and A. K. Williams. T. B. Hall, Esq., secured second honours with fresh very richly coloured blooms. Some of the trios were perfection, notably the following:—Dupuy Jamain, Duke of Wellington, Madame G. Luizet, Duke of Edinburgh, Beauty of Waltham, and Marie Baumann. Rev. Jos. Pemberton was third. For twelve Teas or Noisettes T. B. Hall, Esq., was well to the front with a superb lot, splendidly finished and of good size, as follows:—Madame Lambard, especially rich; Innocente Pirola, Madame Cusin, Anna Ollivier, Jean Ducher, Marie Van Houtte, Alba Rosea, Souvenir d'un Ami, Comtesse Riza du Parc, Madame Margottin, Madame Willermoz, and Francisca Kruger. The second prize fell to Rev. F. Page Roberts, Scole, Norfolk, for a very excellent lot, among which was the best Tea in the Show, a magnificent bloom of Souvenir d'Elise Vardon, which was awarded the silver medal of the National Rose Society; besides this, others particularly good in the stand were Niphotos, Anna Ollivier, Comtesse de Nadaillac, and Madame Margottin. This collection lacked the rich-coloured varieties so noticeable in Mr. Hall's stand. Third, Rev. Jos. Pemberton, in whose lot was a magnificent bloom of Catherine Mermet.

In division D classes, the Rev. Lionel Garnet, Christleton, Chester, secured highest honours for twenty-four varieties, followed by A. Tait Esq., Woolton, Liverpool, both lots being very fine. The leading one consisted of the following:—Back row—Etienne Levet, La France, A. K. Williams, Louis Van Houtte, Baroness Rothschild, Marquise de Castellane, Annie Wood, Madame Prosper Laugier. Middle row—Duke of Teck, Dupuy Jamain, Merveille de Lyon, Ulrich Brunner, Maurice Bernardin, Lady Mary Fitzwilliam, Alfred Colomb, and Madame G. Luizet. Front row—Marguerite de St. Amand, Xavier Olibo, Horace Vernet, Souvenir de la Malmaison, Abel Carrière, Le Havre, Madame de Vallombrosa, and Comtesse d'Oxford. The following were especially good in Mr. Tait's collection:—Duke of Wellington, magnificent; Marie Baumann, Madame Eugène Verdier, Dr. Andry, Dupuy Jamain, Baroness Rothschild, and Merveille de Lyon. The only exhibitor in the class for eighteen distinct, single trusses, was Mr. W. J. Boyes, Milford, Derby, who staged fine blooms of Merveille de Lyon, Duchess of Bedford, Marquise de Castellane, and Lady Mary Fitzwilliam. For nine Teas or Noisettes a splendid stand staged by Rev. L. Garnett secured highest honours; as compared with the other two stands exhibited they were a long way ahead. Good flowers of David Pradel, Marie Van Houtte, Anna Ollivier, and Rubens were shown. The second and third fell to Alfred Tate, Esq., and Mr. W. Boyes in the order named.

Other amateur classes (Division E) were fairly well filled. For twelve distinct varieties Rev. Edward S. Fellowes, Wimpole Rectory, Royston, was a good first with mostly large well coloured flowers of the following:—Marie Baumann, La France, Marie Rady, Baroness Rothschild, Madame Gabriel Luizet, A. Colomb, François Michelin, Jean Liabaud, Louis Van Houtte, Souvenir d'Elise, Duke of Teck, and Maréchal Niel; the second fell to Mr. Ismay Fisher, Scawley, Brigg, in whose stand was a magnificent bloom of Lady Mary Fitzwilliam, which was adjudicated the best H.P. in the amateur classes, and received the Society's silver medal. Other most praiseworthy blooms were La France, Madame Lacharme, and Dr. Andry. W. E. Hall, Esq., Birkenhead, and Miss Mellish, Worksop, were third and fourth respectively. Three other stands were staged. In the class for six Teas or Noisettes there were nine lots staged. The first fell to Mr. Chas. E. Outhell, Dorking, Surrey, with an excellent lot, consisting of Jean Ducher, Maréchal Niel, Caroline Kuster, magnificent; Anna Ollivier, Alba Rosea, and Souvenir d'Elise Vardon. The second and third were awarded to Rev. E. L. Fellowes and Rev. A. Cheales, Brockham Vicarage, Surrey, in the order named.

EXTRA CLASSES FOR AMATEURS.—For twelve triplets of Teas or Noisettes the first prize was awarded to the splendid stand exhibited by Rev. F. Page Roberts, Scole, Norfolk, with the following varieties:—Jean Ducher, Mme. Margottin, Niphotos, Comtesse de Nadaillac, Caroline Kuster, Innocente Pirola, Souvenir d'Elise Vardon, Anna Ollivier, Maréchal Niel, Souvenir d'un Ami, Madame Bravy, and Marie Van Houtte. T. B. Hall, Esq., was second, and Rev. J. Pemberton third. Both were very fine. Amongst the best trios in the second stand were Marie Van Houtte, Madame Lambard, Niphotos, Madame Margottin, Caroline Kuster, and Jean Ducher.

OPEN CLASSES.—For twelve single trusses of any Rose Mr. Frank Cant was first for a grand stand of Tea Souvenir d'Elise, which for size and condition could scarcely be excelled. Rev. F. Page Roberts was second with a splendid stand of Comtesse de Nadaillac, and Mr. B. R. Cant third with twelve magnificent blooms of Ulrich Brunner. Five other stands were staged, Madame Gabriel Luizet being very conspicuous. In the class for twelve trusses of any white Rose there were not less than twelve lots staged, nearly all of which were Merveille de Lyon, and splendid they were. Messrs. Curtis, Sanford & Co., Torquay, gained the premier position with a wonderful stand both in size and finish. Messrs. F. & A. Dickson and Son were second with the same variety, and Mr. George Prince, Oxford, third with a grand stand of Innocente Pirola. For twelve any yellow

variety Mr. F. Cant was well to the front with a grand stand of *Maréchal Niel*. Mr. Prince was second with a splendid stand of *Comtesse de Nadaillac*, and the third fell to Messrs. Paul & Son, Cheshunt, for *Maréchal Niel*. For twelve of any crimson variety Messrs. Paul & Son were first with grand blooms of *A. Colomb*. Messrs. Cranston & Co. and Mr. J. House were second and third respectively, both staging *A. K. Williams*, but by no means in its best condition. For the best twelve dark velvety-crimson Messrs. Curtis, Sanford & Co. were first with a grand stand of *Abel Carrière*. Messrs. Paul & Son and B. R. Cant followed with *Abel Carrière* and Prince *Camille de Rohan*.

NEW ROSES.—For twelve varieties not in commerce previous to 1883, Messrs. Curtis, Sanford & Co. were first with excellent blooms of *Directeur Alphonse*, a fine crimson; *Madame Rambaux*, *Francisque Rivi*, Mrs. George Dickson, a fine pink; *Lord Bacon*, *Merveille de Lyon*, *Baron N. de Rothschild*, *Madame Delleriaux*, *Alphonse Soupert*, a rich scarlet-crimson; *President Senelar*, black-crimson, very fine; *Mlle. Julie Gaulain*, and *Souvenir de Gambetta*. The second fell to Messrs. Paul & Son, Cheshunt, with the following, in addition to some like the last: *Pride of Reigate*, splashed and shaded; *Ella Gordon*, M. Benoit, *Comte*, *Queen of Queens*, *Victor Hugo*, *Madame de Watteville*, *Eclair*, grand deep crimson; and *Longfellow*. Mr. Henry Frettingham was third.

SUTTON.

I KNOW of no Society which better deserves success than that of Sutton situated as it is in a district by no means favourable to Rose-growing, for, the soil is light, and in such seasons as we have experienced during the last two years it is especially difficult to get good flowers. It has, nevertheless, set itself to do the best that it could to remedy these defects. Not only does it prepare a liberal schedule, inviting persons from all parts to compete, but in its annual reports it is always trying to give such information as may be useful to its members, one year giving very clear and detailed directions as to growing, in another giving the valuable list of winning Roses prepared by Mr. Mawley, giving lectures and advice to all who might be interested in the growth, and all this pain and trouble is at last bearing fruit. I am aware that the Committee have been despondent as to the result of their labours, and have at one time been tempted to think that they have spent their strength for nought; but no one comparing the exhibits (I mean the local ones) with those of four years ago when the Society was started could fail to see the vast improvement that had taken place not only in the quality of the flowers exhibited, but in the manner in which they were set up, and if some of the exhibitors could only be persuaded to use Mr. Foster's tubes and stands they would still further increase the efficiency of the shows. Roses laid down on the moss without foliage do not show half as well as when wired and standing up well above the stand. The Committee are encouraged by their past success still to go forward, and purpose next year holding it in the open air under a tent, believing thereby they will attract a larger number of visitors. A good band is almost thrown away in such a room as the Show is held in, and if fine weather can be secured no doubt it will be a vast improvement. As usual the bouquets, hanging baskets, &c., were excellent, and most of them in very good taste, while many grand stands of Roses were shown.

In Class 1, twenty-four varieties, Mr. A. Slaughter, who this year has quite recovered the ground he lost last season, showed a remarkably fine stand, containing *Madame Marie Rady* (a very grand flower), *François Michelin*, A. K. Williams, *Baroness Rothschild*, *Camille Bernardin*, *La France*, *Marie Baumann*, *Etienne Levet*, *Madame Isaac Pereire*, *Madame Victor Verdier*, *Duchesse de Vallombrosa*, *Ferdinand de Lesseps*, *Anna Ollivier*, *Madame Gabriel Luizet*, *Belle Lyonnaise*, *Louis Van Houtte*, *Catherine Mermet* (a very grand bloom), *Dupuy Jamain*, *Emilie Hausberg*, *Jean Ducher* (very fine), *Mlle. Marie Cointet*, *John Stuart Mill*, and *Alba Rosea*. Mr. T. W. Girdlestone was second, Mr. E. M. Bethune third, and Mr. H. Pawle fourth. In Class 2, for twelve varieties, Mr. Slaughter was again first with a beautiful stand, consisting of *Marie Rady*, *Baroness Rothschild*, *Ferdinand de Lesseps*, *Etienne Levet*, *Madame Gabriel Luizet*, *Auguste Rigotard*, *Belle Lyonnaise*, A. K. Williams, *Marie Baumann*, *John Stuart Mill* (very fine), and *Marie Finger*. The Rev. A. C. Hales was second, Mr. E. M. Bethune third. In Class 3, eight varieties, three of each, Mr. Slaughter was again first with *La France*, *Alfred Colomb*, *Innocente Pirola*, *E. Y. Teas*, *Anna Ollivier*, *Louis Van Houtte*, *Belle Lyonnaise*, and *Marie Rady*. Mr. F. C. Prince was second, and Mr. R. Cox Hales third. In Class 4, for twelve Teas, the first prize was awarded to T. W. Girdlestone, Esq., for a very good stand, consisting of *Souvenir d'un Ami*, *Madame Caroline Kuster*, *Catherine Mermet*, *Madame Margottin*, *Niphetos*, *Souvenir d'Elise Vardon*, *Belle Lyonnaise*, *Rubens*, *Comtesse de Nadaillac*, *Madame Bravy*, *Marie Van Houtte*, and *Innocente Pirola*. Mr. A. Slaughter second, and Mr. E. M. Bethune third. In Class 5, for nine varieties, the first prize was awarded to Mr. E. Wilkins, the active Secretary of the Society, for a fine stand containing *Madame Clemence Joigneaux*, *Duke of Teck*, *Star of Waltham*, *Marie Rady*, *Charles Lefebvre*, *Camille Bernardin*, *Marquise de Castellane*, *Merveille de Lyon*, and *Louis Van Houtte*. Mr. E. C. Cuthell second, Rev. A. Cheales third, and Rev. W. Walker fourth. In Class 6, for six varieties, Mr. E. Williams was again first with fine blooms of *Alfred Colomb*, *Duke of Edinburgh*, *Marquise de Castellane*, *Star of Waltham*, *Charles Lefebvre*, and *Horace Vernet*. Rev. Alan Charles second, Rev. W. Williams third, and Mr. G. A. Mantell fourth. In Class 7, four varieties, three of each, Mr. E. Wilkins was again first with *Star of Waltham*, *Marie Rady*, *La France*, and *Charles Lefebvre*. In Class 8, for six Teas, Mr. E. C. Cuthell was first with *Jules Finger*, *Alba Rosea*, *Anna Ollivier*, *Souvenir d'Elise Vardon*, *Jean Ducher*, and *Maréchal Niel*. In Class 9, for twelve blooms of any one variety, Mr. A. Slaughter was again first with *Marie Baumann*. In Class 10, for twelve varieties of new Roses not sent into commerce before 1882, Mr. T. W. Girdlestone was first with *Duchesse de Connaught*, *Grace Darling*, *Comtesse de Paris*, *Violette Bouyer*, *Heinrich Schultheis*, *White Baroness*, *Queen of Queens*, *Merveille de Lyon*, *Ulrich Brunner*, *Lady Mary Fitzwilliam*, and *Etoile de Lyon*. In the local classes, in Class 11, for twelve varieties, Mr. G. Foster was first with *La France*, *Souvenir d'un Ami*, *Duke of Edinburgh*, *White Baroness*, *Paul Neyron*, *Alfred Colomb*, *Heleu Paul*, *Sir Garnet Wolseley*, *Etienne Levet*, *Charles Lefebvre*, *Baroness Rothschild*, and *Prince Camille de Rohan*. In Class 12, for nine varieties, Mr. J. S. House was first with

Madame Gabriel Luizet, *Comtesse d'Oxford*, *Merveille de Lyon*, *Marie Rady*, *Capitaine Christy*, *Star of Waltham*, *Louis Van Houtte*, *Marie Baumann*, and *Etienne Levet*. In Class 13, for three Teas, Mr. G. Plenwell was first with *Madame Berard*, *Homère*, and *Wm. A. Richardson*. In Class 14, for three varieties, Mr. W. J. Hughes was first with *Capitaine Christy*, *Jules Margottin*, and *Duke of Edinburgh*. In Class 15, for six of any one Rose, Mr. J. Waterer was first with *Marie Baumann*; and in Class 16, in which the ladies' challenge cup was the first, it fell to Mr. H. Barrett, and as this is the second time that he has won it in succession it remains with him. The varieties were *Marie Baumann*, *Madame Gabriel Luizet*, *Dr. Andry*, *Marquise de Castellane*, *Comtesse d'Oxford*, *Alfred Colomb*.

Sutton always comes out strong in decorations, and this year was no exception to the rule. One very interesting class was that of a basket of Roses arranged by children. There were some very pretty ones shown, the first prize being awarded to Miss Cuthell, the second to Miss Dart, and the third to Miss Mary Hughes. In table decorations the first prize was awarded to Mrs. Loche, the second to Miss Guthridge, the third to Mrs. Morton, and the fourth to Mrs. Atkins. These all laboured under the disadvantage of not having sufficient space allotted to them to show them off. In the baskets for Roses Miss Shaw was first, Mr. Cuthell second, Mrs. Dart third, and Mrs. Guthridge fourth. In hanging basket Miss G. Shaw was first, Mrs. Tate second, Mrs. Ernest Wilkins third, and Miss Guthridge fourth. In hand bouquet Mrs. E. Wilkins was first, Mrs. E. Locke second, and Miss Ethel Hereward third. In the spray for ladies' dress Miss Shaw was first, Mrs. Ernest Wilkins second, Miss G. Shaw third, and Miss Easterwite third.

The Sutton Society offers prizes for nurserymen, and they were sufficient to bring together in competition Mr. Cant, Messrs. Paul & Son, Mr. Turner, and Mr. House. In the class for thirty-six, distinct, Mr. B. R. Cant was first, Messrs. Paul & Son second, Mr. J. House third, and Mr. C. Turner fourth. In the class for twelve Teas Mr. B. R. Cant was again first, Messrs. Paul & Son second, Mr. G. W. Piper third, and Mr. C. Turner fourth. I regret that I had not time to get the names of the winning flowers in the first-prize stand. Altogether the Sutton Rose Society may be congratulated on its success—an earnest, let us hope, of future good days.—D., Deal.

HEREFORD AND WEST OF ENGLAND.—JULY 9TH.

THIS highly popular Exhibition which next year will have reached its second decade of existence was held as usual in the Shire Hall, Hereford. The same atmospheric causes which introduced so many coarse and exceptionally small blooms into an exhibition hall this season doubtless militated against the usual competition by the large nurserymen at Hereford, Messrs. Keynes & Co. alone competing among the leading professionals for the open classes from which Herefordshire excludes herself.

As might be supposed Messrs. Cranston & Co. carried off the chief prizes. Their seventy-two single varieties embracing many highly meritorious blooms, H.P. François Michelin, Louis Van Houtte, Alphonse Soupert, new and a real acquisition; Dupuy Jamain, Comtesse de Serenye, Dr. Andry, Madame Rothschild, Beauty of Waltham, Madame Gabriel Luizet, Mrs. Charles Wood, grand; Madame Marie Cointet, Général Jacqueminot, fine; Merveille de Lyon, superb everywhere; Constantin Tretiakoff (Tea), Catherine Mermet, Marie Baumann, Madame Catherine Soupert, Madame Etienne Levet, Madame Montet, exquisite; Sénateur Vaise, Marie Verdier, useful; Marie Rady, Mons. Noman, Reynolds Hole, fine in colour; Marquise de Castellane, Ernest Prince, Edouard Morren, Louis Dore (Tea), Maréchal Niel, Vicomtesse de Vigier, Capitaine Christy, Sultan of Zanzibar, Victor Verdier, Tatiana Oneguine, Marguerite de St. Amand, fine; A. K. Williams, shapely; Madame J. Perriere, new and promising; Mlle. la Marquise d'Hervey, fine; Abel Carrière, Ulrich Brunner, grand; Princess Beatrice, Prince Arthur, La France, Mrs. Baker, Pride of Waltham, Sir Garnet Wolseley, Lælia, Camille Bernardin, François Levet, Mary Pochin, Marquise de Mortemart, Duke of Edinburgh, Devienne Lamy, Miss Hassard, splendid; Antoine Ducher (Tea), Madame Bravy, Mlle. Gabriel Tournier, Princess Mary of Cambridge, M. S. Delaplace, Madame Hippolyte Jamain, fine; Earl of Pembroke, Madame Georges Swartz, Comtesse de Paris, Madame Julia Dymonier, Duchess of Connaught, Heinrich Schultheis, fine, a real acquisition (Tea); Jean Ducher, Nardy Frères, M. Eugène Deloux, Annie Laxton, and Le Havre; Messrs. Keynes, Williams & Co., Salisbury, and Mr. George Davison, Hereford, taking equal second prize. This home firm also carried away the thirty-six trusses first prize, and for twenty-four singles first prize; Messrs. Keynes, Williams and Co., second prize thirty-six varieties; Mr. Davison, third prize; Messrs. Stephen Treseder, Cardiff, second prize twenty-four varieties; Messrs. Jeffries & Son, Cirencester, first prize eighteen varieties three trusses; Mr. H. Frettingham, Boston, Notts, second prize; Mr. Ralph Crossling, Penarth, third prize.

Class A 2 (open to nurserymen not residing in Herefordshire, seventy-two varieties single trusses).—£10, Messrs. Keynes, Williams & Co., first prize; £5, Mr. H. Frettingham, second prize.

Amateurs showed in greater force than their professional brethren, and their exhibits were far more level, smoother, and evenly sized. This contrast especially holds good of Mr. Grant's exhibits, which swept the prize-board, and deservedly so, even to winning the open class in Teas and Noisettes. In this rising exhibitor's grand stand of thirty-six single varieties were included H.P.'s, Mrs. Baker, bright; Madame Gabriel Luizet, charming everywhere; Comte Raimbaud, François Michelin, A. K. Williams, premier amateur bloom; Miss Hassard, as very seldom shown; Constantin Tretiakoff, superb; Merveille de Lyon (or of any other town, Lyon or not); Marie Rady, E. Morren, Etienne Levet, grand; Hippolyte Jamain, Marie Finger, Prince Arthur, La France, Louis Van Houtte, seldom seen lately; Mons. Noman, fine; Comtesse d'Oxford, grand; Marquise de Castellane, C. Lefebvre, Marquise de St. Amand, Marie Baumann, Madame Montet, superbly delicate; Xavier Olibo, Le Havre, Marie Contet, Mrs. Jowitt, Ulrich Brunner, grand; Tea Climbing Devoniensis, Reynolds Hole, grand colour; Tea Souvenir d'Elise, Général Jacqueminot, Tea Niphetos, only bloom in exhibition; Charles Darwin, useful; Star of Waltham. Second prize, Mr. T. B. Hall, Rockferry, near Liverpool. Third prize, Mr. J. H. Arkwright, Hampton Court, Leominster.

Class D (open to the United Kingdom, collection of new Roses, sent out by English nurserymen, and not in commerce previous to 1882).—This

useful and interesting class, as usual, was not shown as the public ought to see it, several blooms of the same variety being incomparably better than in the different collections.

Messrs. Cranston & Co. took first prize with the following highly promising reliable varieties in their collection:—H.P.'s, Alphonse Souper; Lord Bacon, useful in colour, shape, and substance; Henrich Schultheis, large and good; and the incomparable light Merveille de Lyon, which variety also won for Messrs. Cranston & Co. the first prize for twenty-four blooms of any one Rose, Mr. H. Frettingham also winning second with Marie Baumann. Mr. J. H. Arkwright showed (not for competition) a useful box of garden Roses.

In the decorative division the Marquis of Bute's prizes were keenly contested. Indeed, this branch of the Society is annually growing in public favour, and doubtless helps not a little in keeping up the interest of the general public—an important feature in the management of all societies in these fashion-shifting days.

The Judges over the nurserymen's division were the Rev. C. H. Bulmer, Credenhill Rectory, Hereford, and Mr. H. J. Grant, Hope End, Ledbury. Amateur Classes—Mr. Williams and Mr. Birch, Salisbury Nurseries; and Mr. Corey, Cirencester Nurseries.—HEREFORDSHIRE INCUMBENT.

SHROPSHIRE ROSE SOCIETY.

JULY 9TH.

FAVOURÉD with excellent weather this Society held its Show in a large tent in the old quarry grounds at Shrewsbury. The exhibits on the whole were satisfactory, especially those staged by the nurserymen. The premier class for seventy-two varieties only brought two competitors into the field, the Cranston Nursery Company, Hereford, taking the lead with magnificent blooms. Messrs. Perkins & Sons, Coventry, who followed, showed some very fine blooms, notably one of Mr. Cant's new Tea variety, Madame de Watteville, a very charming kind, which richly shaded and tipped rich rose-red, of excellent form. The amateurs' classes were pretty well filled, but there were many of the exhibits without merit; many of the flowers were badly coloured and small, while an equal number were past their best. Some of the collections from gentlemen's gardeners in the district were very good. Special mention may be made of the stand of twelve Xavier Olibo shown by Messrs. Jas. Dickson & Sons, Newton Nurseries, Chester. The colour and form were perfect, and they well merited the equal award with Messrs. Cranston & Co.'s excellent stand of Merveille de Lyon.

The tent was very well filled, although the miscellaneous exhibits, usually so important at such shows, were not numerous. We noticed, however, some fine boxes of Roses staged by Messrs. James Dickson & Sons, Chester, and the Cranston Nursery Company, Hereford. A very excellent stand of Pink Mrs. Sinkins, arranged with another which we took to be Admiral Marsden, mixed with some fine flowers of *Cistus formosus*; this was shown by Mrs. Clarke, The Rocks, Meole. Messrs. Jones & Son, nurserymen, Shrewsbury, staged a huge collection of the usual decorative plants, as well as numerous stands of hardy herbaceous flowers, white Water Lilies, &c., which were very attractive; but we could not help noticing the great want of some elegant plants to supplement and materially assist the excellent display of Roses, which certainly did great credit to the energetic Secretary, Mr. Jones, and others who assisted him, and we trust the Society will receive ample support, so as to be able to extend its usefulness.

CLASSES OPEN TO ALL.—The principal one in this section was for seventy-two varieties, single trusses, in which there were two collections staged by Messrs. Cranston & Co., Hereford, and Messrs. Perkin & Son, Coventry. Both were meritorious, but the Hereford stands had the advantage in colour and freshness; the Coventry flowers were very large, but too far gone. Messrs. Cranston & Co. received first honours, the splendid blooms consisting of the following varieties:—Back row.—La France, a splendid bloom; Louis Van Houtte, Charlotte de la Tremouille, Mdlle. Catherine Souper, John Stuart Mill, excellent; Ulrich Brunner fils, Mdlle. Eugénie Verdier, very fine; Tatiana Onegine, Charles Lefebvre, Comtesse de Serenye, excellent; Alfred Colomb, Madame Montet, Marie Baumann, La Duchesse de Morny, Duke of Edinburgh, unusually good; Duchesse de Vallombrosa, Mons. Alfred Dumesnil, Mons. Noman, Victor Verdier, Barthélemy Joubert, Lady Mary Fitzwilliam, Exposition de Brie, Madame Hippolyte Jamain, and Dr. Andry, splendid. Middle row.—Prince Arthur, Etoile de Lyon, Countess of Rosebery, Merveille de Lyon, grand; A. K. Williams, Star of Waltham, Madame Lacharme, magnificent; Beauty of Waltham, Sultan of Zanzibar, unusually good; Madame Marie Cointet, Comte de Paris, Madame Ferdinand Jamain, Xavier Olibo, Countess Pembroke, Madame la Marquise d'Hervey, Elie Morel, magnificent; Dupuy Jamain, Pride of Waltham, Nardy Frères, Mary Pochin, a splendid bloom; Edouard Morren, Richard Laxton, and May Quennel. Front row.—Ernest Prince, Dingee Conard, fine; Peach Blossom, Général Jacqueminot, Constantin Tretiakoff, Jules Touvais, Mdlle. Marie Rady, excellent; Marquise de Castellane, Madame Gabriel Luizet, splendid; Le Havre, fine; Horace Vernet; Marquise de Mortemart, Madame Charles Wood, an immense even bloom; Lælia, Mons. E. Y. Teas, Mdlle. Marie Verdier, Queen of Waltham, Madame Ducher, Marie Van Houtte, Mrs. Baker, a magnificent bloom; Dr. Savell, Madame Thérèse Levet, and Duke of Connaught. The finest blooms in the Coventry collection were Madame Sophie Fropot, Alphonse Souper, Edward Morren, unusually good; Madame de Watteville, a splendid Tea; François Michelin, Mons. E. Y. Teas, Marquise de Castellane, Beauty of Waltham, and Madame M. Rady, very large and good. Messrs. Cranston were again first for thirty-six varieties, although nearly equal honours were shared by Messrs. James Dickson & Sons, Newton Nurseries, Chester, the adjudication being rather difficult in this case; and Perkins & Son were third. The premier collection included some most magnificent blooms. Back row.—La France, Madame Marie Rady, Marie Finger, Prince Arthur, Duchesse de Vallombrosa, Dr. Savell, Pride of Waltham, Dingee Conard, Victor Verdier, Lady Mary Fitzwilliam, splendid; A. K. Williams, and Merveille de Lyon. Middle row.—Mons. A. Dumesnil, Madame Lacharme, very large; La Rosière, excellent; Rosy Morn, Beauty of Waltham, Madame Marie Cointet, Dupuy Jamain, Marquise de Castellane, Général Jacqueminot, Ernest Prince, Madame Gabriel Luizet, and Sénateur Vaisse. Front row.—Madame Charles Wood, superb; Ulrich Brunner fils, Peach Blossom, Louis Van Houtte, Barthélemy Joubert, Marie Baumann, Mons. Noman,

Alfred Colomb, Mons. Montet, Xaxier Olibo, l'Esperance, and Comtesse de Serenye. Messrs. Dickson & Sons' blooms were superb, the following being particularly good:—Madame Gabriel Luizet, Baroness Rothschild, Madame Montet, Etienne Levet, Marie Baumann, La France, Etoile de Lyon, Sénateur Vaisse, splendid; Captain Christy, and Elie Morel. Messrs. Cranston again took the lead with eighteen varieties of Teas, followed by Perkins and Sons, Coventry, and Mr. G. Townshend, Uffington. None of the flowers were really first-rate, but the following in the leading collection are noteworthy:—Homère, Madame Bravy, Comtesse de Nadaillac, Comtesse Riza du Parc, and Mary Van Houtte. In the class for twelve of any one variety Messrs. James Dickson & Sons, Chester, and Messrs. Cranston shared equal honours, two first prizes being awarded. The first exhibitor staged perfect blooms of Xavier Olibo which, for colour and finish, could scarcely be excelled. The other stand was Merveille de Lyon, a very fine lot of that popular variety.

In the classes provided for gentlemen's gardeners in the county of Salop, the first prize for twenty-four varieties fell to Mr. G. H. Colin, Ashford Court, for a very excellent stand, with Emily Laxton, Madame Lacharme, grand; Général Jacqueminot, Maréchal Niel, Marie Baumann, Baroness Rothschild, Dr. Andry, Le Havre, Avocat Duviervier, Duke of Edinburgh. Dupuy Jamain, La France, Exposition de Brie, Beauty of Waltham, Souvenir de Malmaison, Captain Christy, Annie Wood, Louis Van Houtte, Duke of Teck, Victor Verdier, Auguste Rigotard, Star of Waltham, and Mrs. Baker, a splendid bloom. Mr. Milner, gardener to Rev. J. D. Corbett, Sundorne Castle, was second with an excellent stand, and Mr. West, Halston, third. Two other collections were staged. In the corresponding class for twelve varieties, the same exhibitors were first and second respectively, and Mr. Lambert, gardener to Col. Wingfield, third. Mr. Colin's stand was again very fine, especially the following—Baroness Rothschild, Marie Baumann, Victor Verdier, and Duke of Edinburgh.

AMATEUR CLASSES OPEN TO ALL.—Three stands of twenty-four varieties were staged, the first falling to G. Bourlay, Esq., Quarry Place, Shrewsbury; third, Mr. Lloyd, Cherry Orchard, Shrewsbury; the second being withheld. The following were very fine in the leading stand—Dupuy Jamain, Merveille de Lyon, excellent; La France, Mons. Noman, and Charles Lefebvre. For twelve varieties there were five lots staged; the awards were given in the following order—Dr. Roberts Welshpool, Mr. G. Townsend, jun., Uffington, and Mr. G. Bonrlay. The leading stand were very fine, consisting of the following—Madame Gabriel Luizet, a splendid bloom; A. K. Williams, first class; Etienne Levet, Charles Lefebvre, Duke of Edinburgh, Duchesse de Vallombrosa, Général Jacqueminot, Louis Van Houtte, Maréchal Niel, Prince Camille de Rohan, Belle Lyonnaise, and Mdlle. Eugénie Verdier.

TEA AND NOISETTE VARIETIES.—For twelve varieties open to anyone in the county, Mr. G. Townsend was well to the front with a charming stand, including Jean Ducher, Belle Lyonnaise, grand; Niphetos, very fine; Maréchal Niel, A. Olliver, Madame C. Kuster, Bouquet d'Or, Rubens, splendid; Celine Forestier, Madame Denis, Madame Lambard, and Madame Bravy. Mr. E. W. Pritchard and Col. Wingfield were second and third respectively.

CLASSES FOR AMATEURS WITHIN FIFTEEN MILES OF SHREWSBURY.—Mr. Pryce Evans, Uffington, was first for eighteen varieties with a very fair stand; the best blooms were Etienne Levet, Captain Christy, Alfred Colomb, Sénateur Vaisse very good, and Belle Lyonnaise. Mr. Gurnett was a good second. The first for nine blooms fell to Mr. Townsend, whose stand was excellent; Marquise de Castellane, La France, Dr. Andry, Madame C. Knster, and Madame Noman, were superb. For a stand of six the first prize was awarded to Mr. J. Giddens, Bicton, for large and perfect blooms of Constantin Tretiakoff, Charles Lefebvre, La France, A. K. Williams, Jean Pouret, and Devoniensis; the second and third fell to Mr. H. Brown, Wyle Cop, and Mr. Pryce Evans respectively.

STRAWBERRIES.—There were five collections of three dishes each staged, all of which were excellent; the first fell to Jones & Son, Shrewsbury, for two dishes of President, and one Elton Pine, all of which were extremely good. Mr. Milner, gardener to Rev. J. D. Corbett, was second, and equal thirds were awarded to Miss Sellar, Kingsland, and Mr. H. Hughes, Ganis Lodge.

JACOB'S LADDERS.

THIS genus, though containing few species, includes none unworthy of a place even in the most limited collection. The synonymy in this, as with many other popular genera, has been sadly mixed, and the consequent confusion is not by any means agreeable to the cultivator. All the species may be grown with ease in ordinary garden soil, giving little or no trouble when once thoroughly established. They are increased either by seed, which ripens well in this country, or by division of the roots, which may be accomplished in the autumn. Others are *Polemonium* reptans, a creeping-rooted species with large blue flowers, useful for the rockery; *P. mexicanum*, *moschatum*, and *humile*.

P. cœruleum, perhaps the commonest and best known of all the Greek Valerians, is generally found in large clumps, and even rows, in many of the old-fashioned cottage gardens. Even in our more modern gardens hardly a border can be seen without its patches of blue and white Valerian, and healthy plants in a strong loam are amongst the finest sights at the present time. It is also used very effectively in the wild garden, where it soon establishes itself provided the ground be kept free from rank weeds so as to allow the self-sown seedlings plenty of light and space. It forms large masses in the course of a few years, which are ever attractive in or out of flower. There are other forms grown under various names, notably *P. sibiricum*, which is distinct from *P. cœruleum* only in having bipinnate leaves instead of the ordinary pinnate of the type. *P. pulchellum* differs little from *cœruleum*; it has much smaller

flowers, and is a less useful garden plant; a variety from the Himalayas called *grandiflorum*, with flowers half as large again as the ordinary form, it is well worthy a place, and should be included in all collections of

broad sense, include *speciosum* and *lanatum* or *villosum*. It grows generally about half a foot high, throwing up numerous much-branched panicles of vivid purplish blue flowers. The leaves are mostly radical, the



Fig. 8.—*POLEMONIUM RICHARDSONI*.

showy plants; it does best in partial shade, thriving well on an eastern aspect. Natives of Europe, generally flowering June, July, and August.

P. pulcherrimum, nearly allied to *P. richardsoni*, and may, in a

leaflets oval shaped, blunt, and hairless, in which it differs distinctly from the following, as well as in having smaller flowers. It is perfectly hardy in sunny spots of the rockery, and during the months of June and July

flowers profusely. It was introduced from the Rocky Mountains by Mr. Drummond.

P. Richardsoni, shown in the illustration, fig. 8, was named in honour of the celebrated Arctic explorer, Dr. Richardson, who found it growing near Great Bear Lake about the year 1826. The general appearance of its flowers reminds us much of our common *P. coeruleum*, and in the "Linn. Transact," 14, p. 377, it was quoted as a variety under the name of *P. coeruleum* var. *nanum*, Hook, from specimens gathered by Captain Sabine in Spitzbergen. For all garden purposes, however, its neat dwarf habit well entitles it to specific distinction, incorporating in one plant, as it were, the large flowers of the common Jacob's Ladder with the neat habit of the foregoing. It is an extremely valuable plant for rockery decoration in the late summer and autumn months when well established, which it readily does in well-drained sunny positions, it forms quite a pleasing feature. It throws up angular hairy stems, branched almost from the base; leaves pinnate; leaflets more round than oval, quite downy underneath; the flowers are pale purple, thickly marked with deeper coloured lines. It flowers July and October.

The illustration was prepared from a specimen furnished us by Mr. T. S. Ware of Tottenham, who has shown the plant extremely well at Kensington this year, and was awarded a first-class certificate for it a short time since.—M. S.

GOOSEBERRY AND CURRANT TREES.

HAVING read the timely remarks of your correspondent, Mr. Bardney, respecting the spring stopping of the Gooseberry and Currant trees, I was in hopes he would have gone farther and treated the subject more fully as to the training and the protecting from birds. I agree with him as to stopping the lateral shoots, but I leave the point, as if that is stopped they throw more lateral growths and weaken the buds for next year's fruit.

I have read of a gentleman saying he always had to preserve his fruits twice before he could eat them. If we wish to have a good supply and good fruits of Gooseberries and Currants we must preserve them five times before we eat them. First we have to preserve the buds from the birds in the winter; second, the bloom from frost, beetles, &c.; third, the leaves from insects, caterpillars; and fourth, the fruit from birds, bees, wasps, and then grit splashed by the rain, &c.

To guard against all these, and to save time and trouble in watching and stopping them, I would propose to train them either as single specimens or on a trellis or espalier. The trellis I would recommend would be a double one, in the form of the letter V, from 4 to 6 feet high, and planted each side and trained from 6 to 8 inches apart upright. By so doing they could easily be protected from birds, frosts, &c., by putting a net or mats over them, and while growing they would be readily stopped, examined, and thinned for kitchen use. The leaves infested with caterpillars can be picked off before they have left the leaf the eggs are deposited on.

If grown as single trees they should be trained in shape of a teacup or goblet, and the centre kept open to allow the air to get to them and the sun to ripen the buds for next year's crop. Carefully protect the buds from the birds by netting them in winter and early spring; also from frost, and watch and pick the caterpillars off before they spread over the tree. Thin the fruit as soon as large enough for bottling green or for the kitchen, and stop all lateral growths not required for training up the wires. Fork the ground, dusting once or twice with lime or soot, and mulching well with good manure in the winter, watering the trees in the growing season with liquid manure. We should then soon hear less about the trees not bearing or being without leaves, and there would be no more complaints from the cook about having no Gooseberries or Currants for preserving.—G. E., Warwickshire.

GREENHOUSE PLANTS.

HYDRANGEA THOMAS HOGG.—I scarcely know a finer plant than this for a cool greenhouse. Easily managed, if well fed producing large trusses of white flowers, which look distinct; and visitors say, "What is that?" It is so delightful to have plants in greenhouse and garden anent which visitors have to interrogate. If this plant is well fed it thrives remarkably, for my plant is in a small 48-pot, and it has three good trusses of flowers, and not more than 1 foot high. I can imagine how fine a large specimen would look in many of our greenhouses and conservatories, but we seldom see it. I am sure many an amateur would find this an excellent plant to grow for greenhouses without any artificial heat.

HYACINTHUS CANDICANS.—Some bulbs of this noble "jacinth" were potted up pretty early and stood in the greenhouse, and they have been in excellent condition. Some of the spikes are forwarder than others, but on the whole they present a very unique and effective appearance; the bold foliage, tall spikes of white waxy-looking bells, so pure under glass that they may be used for any purpose. The stamens are not so conspicuous under glass as outside. I think it is Mr. Kelway of Langport who strongly recommends this plant for forcing. Well done, Mr. Kelway, but I rather regret your advice is not followed in half as many instances as it might be with the greatest advantage and best results.

WEIGELA HORTENSIS NIVEA is just going past, and I am sorry to lose so sweet and chaste a flower, but it has done admirably. The small bushes in 7-inch pots have been covered with pretty trusses of pure white Mock Orange-like blossoms, which, though rather thin in texture, are nevertheless extremely useful and effective when cut, especially for vase decoration. It is just coming into flower outside, and looks very neat, and a capital shrub for a border. I was told the other day that the demand for this plant is greatly on the increase for forcing; and well it may be, for when once grown it will, I should imagine, always be employed.

OXALIS LACTIFLORA.—A pretty little Sorrel, with deep green leaves and numerous milky white flowers about the size of a shilling. Dwarf and spreading, indeed slightly trailing in habit, I wish to recommend it for fringing the margins of the side stage, grown in pots or pans. Its habit is so suitable that it may be most effectively used for this purpose with *Isolepis* and *Selaginella Kraussiana* or other plants. It affords a striking contrast to most other plants useful for that purpose, while its own pretty white flowers springing from a bed of deep green are extremely effective. I feel quite sure it is a plant which would please the majority of flower-lovers.

LITTONIA KEETII.—This is a very handsome and interesting plant, climbing by means of tendrils at the ends of the leaves, similar to what occurs in *Gloriosa superba*—a close relation, by the way. The flowers are solitary from the axils of the leaves, bell-shaped, with lanceolate divisions, of a clear orange colour, and lasting a long time in its pure beauty, and by the appearance of the growing shoots there are a large number of flowers to develop, so we will enjoy the pretty though not gorgeous flowers for some time. For training round a pillar it is an excellent plant, or a small trellis can be arranged in the pot, but it certainly looks best the other way. It requires good drainage and a free rich soil of fibrous peat, loam, leaf soil, and sand in equal proportions. I am not sure whether this is distinct from the older *L. modesta*.

FORCED LILIUMS.—I use the term "forced" because my plants have really been slightly stimulated, as the kinds now mentioned are not in flower out of doors yet. First there is the old Madonna Lily—*L. candidum*—than which none are sweeter and purer. The bulbs were potted in September and stood in a cold frame until the roots were well in action, when they were carried to the greenhouse, and the first flowers opened early in June. So much admired have they been that many good friends say they will attempt their culture in this direction in future, and no doubt they will succeed equally well, providing of course good strong bulbs are had to start with. *L. eximium* and *Harrisi* are also in flower with their large trumpet-shaped pure white perianths, sweetly scented, and right noble in appearance; they are kinds which must come to the front for greenhouse decoration. The brilliant little *L. tenuifolium* is just over, but its intense scarlet turbans have been much admired. *L. auratum* will speedily open some of its great buds to the June sunlight, and truly it is the "queen of Lilies," and one need not be without flowers of it from this time till at least the end of October if small lots of bulbs are bought at different times during the importing season. According to my experience much has been written of little value anent the root-action of this Lily. I have seen an abundance of stem roots, and encouraged them to the fullest extent, even though there have been incontestably fine bulbs well furnished with roots at the base. There is no doubt stem roots are produced in Japan. I have repeatedly removed them from amongst the scales of imported bulbs as their shirts of clay were cleared off; and last year I examined some insignificant home-grown examples, some measuring 18 inches round, with plenty of basal roots, and the base of the stem was matted with other roots.

THE NEW ZEALAND CLEMATIS (C. indivisalobata).—This gave us quite a wealth of white flowers very early in the year, is now growing luxuriantly. Last season's wood has been removed and the young put in its place. The plant is receiving plenty of liquid manure—real good stuff in my opinion; it is stable drainage, and evidently the plant likes it. Those possessing this Clematis should bear in mind the necessity of securing strong wood every season, for from the current growth next season's flowers will be produced. No cool greenhouse should be without this extremely floriferous and handsome flower.

DIPLACUS GLUTINOSUS is an old plant in our gardens, not quite hardy, but very suitable for a cool house. Shrubby at the base, it flowers freely from the young growth, producing orange Mimulus-like blossoms for a considerable time, and as easily managed as a Zonal Pelargonium. There is nothing very showy about this plant; nevertheless, it is one which is honestly worth growing.—T.

HORTICULTURAL SHOWS.

WIMBLEDON.—JULY 8TH.

AN admirably arranged schedule, comprising upwards of eighty classes, with special prizes in no less than thirty-one additional classes, a beautiful position—the grounds of Mrs. Schuster, Carnizaro House—a district of good gardeners and active amateurs, Wimbledon ought to produce a good show. The Exhibition, which can only have brief notice, was held in three marquees, and beyond doubt every one contained products eminently worthy of inspection. The specimen plants were not of elephantine dimensions, but the majority were well grown. Ferns were particularly good, Roses and other cut flowers both numerous and attractive, fruit excellent, and vegetables very satisfactory. The groups of plants arranged for effect commanded primary attention in the large tent. In the open-to-all class, the arrangement occupying 100 square feet, the first prize was won by Mr. Wilkinson, gardener to Mrs. Schuster, with a well balanced assortment of healthy examples, vigorous spikes of *Gladiolus brenchleyensis* rising effectively above Palms, *Caladiums*, &c., while the margin was par

ticularly good, being composed of alternate plants of Gloxinias and Adiantums in first-class condition. Mr. Smith, gardener to J. F. Schwan, Esq., Oakfield, was an excellent second with a tastefully arranged and cheerful group, in which Paris Daisies were conspicuous, the margin being composed of *Panicum variegatum* and *Lobelias*. In the smaller groups, Messrs. Davies, gardener to W. Chafer, Esq.; Bridger, gardener to L. Walters, Esq.; and Bentley, gardener to Sir Thomas Gabriel, Bart., were the successful exhibitors in the order named. The first prize group was perhaps a trifle dull, but the plants were in first-rate order and well arranged; the second was almost a bouquet of flowers, relief being wanted; the third, an informal, almost rugged arrangement, yet decidedly pleasing. Very beautiful groups, not for competition, were arranged by Messrs. Thomson, Wimbledon Nurseries; Jackson, Kingston; and Laing & Co., Forest Hill. The groups above mentioned made in themselves an interesting and attractive exhibition.

Noticeable in the plant classes were *Caladiums* from Mr. Law, gardener to R. S. Dean, Esq., splendid examples, 3 feet in diameter, in 8-inch pots, closely followed by Mr. Bridger. *Achimenes* of the same dimensions secured the first prize for Mr. Smith, Oakfield, who was followed by Messrs. Law and Wilkinson. Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall, staged splendid *Coleuses*, almost perfect globes, 3 feet in diameter, in 6-inch pots. Mr. Wilkinson followed with well coloured pyramids. In the class for four specimen plants Messrs. Bentley and Smith were the successful exhibitors, the former staging a *Clerodendron*, *Croton*, *Dracæna*, and *Pandanus*, all good. The same cultivators were respectively first and second in the single specimen plant class with admirable examples of *Clerodendron Balfourianum*. Mr. Bentley secured the first prize for *Gloxinias*, one plant having about sixty flowers. Mr. Newell, gardener to S. E. Sanders, Esq., Fairlawn, staged *Tuberous Begonias* of superior quality, receiving both the Society's prize and the special, J. Caswell, Esq., following creditably. Messrs. Bentley and Bridger secured the prizes for Ferns with admirably grown specimens, and Mr. Law had the best *Petunias* and *Pelargoniums*, Mr. Legg contributing a first-rate group of the latter in 5-inch pots, not for competition.

The cut flower tent was wonderfully well occupied, both *Roses* and herbaceous plants being splendidly represented, and the competition exceedingly close. Two silver cups were offered—namely, in an open class for twenty-four blooms and a Wimbledon amateurs' class for twelve blooms. Messrs. Cheal & Son, Crawley, secured the first, and J. A. Coleby, Esq., the second, Mr. Moorman losing in the open class by one point, and had the collection been judged last in the tent instead of first he would certainly have won, as his blooms being young improved, while the others quickly expanded. Mr. Moorman was, however, still the premier exhibitor, staging more fine blooms in the classes than anyone else, Mr. Coleby sharing the honours with him. They were equal first in another special class for twelve blooms, Mr. Moorman winning the Society's chief prize for the same number, also the first prize for triplets. Mr. Coleby was first with six H.P. blooms, and also for the same number of Teas. Messrs. Northover, Hunter, Templeman, and Walsh were successful exhibitors in the *Rose* classes. Messrs. James Veitch & Sons had a magnificent display not for competition, the blooms being equal to those staged at the great shows; their box of *Rosa lucida* attracted much attention. It is probably the most floriferous *Rose* in existence, and is sure to be in great demand for bouquets and vase-decoration on account of its extraordinary clusters of small flowers and buds. Messrs. Cheal secured the first prize for hardy cut flowers with a wonderfully fine collection, a double yellow *Helianthemum* being extremely effective, and must be a first-rate rockery plant. Messrs. Smith and Law were the remaining prizetakers with etands of great excellence, and a remarkably fine group not for competition was contributed by Mr. D. S. Thomson. Exhibits in the smaller classes were good, but cannot be particularised.

The display of fruit was not extensive but very good indeed—except, perhaps, *Melons*, which were defective in flavour. For a collection of six dishes Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, was first with first-rate black and white *Grapes*, a fairly good *Melon*, and capital dishes of *Strawberries*, *Cherries*, and *White Currants*. Mr. Alderman, gardener to C. Czarnikow, Esq., Mitcham, was an exceedingly close second, and would perhaps have been first had his *Gooseberries* been ripe, the third prize falling to Mr. Davis, gardener to Rev. F. Morris, Roehampton, for a very creditable collection. Messrs. Gibson, Davis, and Bentley were awarded the prizes in the order named for *Black Hamburg Grapes*, all staging well. In the class for white *Grapes* Mr. Gibson was first with very fine *Muscats*; Mr. Alderman, Mitcham, second with first-rate bunches of *Foster's Seedling*; and Mr. Bentley third with *Buckland Sweetwater* of excellent quality. The brothers Alderman and Mr. Smith secured the prizes for *Peaches*, which were very good and close in point of merit; and Alderman (Mitcham), Wilkinson, and Smith were the successful exhibitors of *Strawberries*. All that can be said about the vegetables is that they were a credit to the cultivators of them and the Show. The Exhibition was admirably managed by the earnest and able Secretary, Mr. H. A. Rolt, and his industrious coadjutors, and the Society merits a large share of public support.

LEE, BLACKHEATH, AND LEWISHAM SHOW.

The eighteenth annual Exhibition of the above-named Society was held on July 8th and 9th, by kind permission of Mrs. Penn, in a field adjoining the charming gardens of The Cedars, Lee. The Show was in every way a marked success, the weather being most favourable on both of the two days, thus inducing a great number of persons to visit the Show, especially on the second day. In previous years it has unfortunately been wet on one or both of the days, and last year the Society suffered a great loss in consequence. The success this year has, however, been so great as to place the Society on a prosperous footing again. Great praise is due to the indefatigable exertions of the esteemed Treasurer (F. H. Hart, Esq.), and Secretary (Mr. C. Helmer), who certainly did their utmost to render the Show a success. The Society's exhibitions are deservedly increasing in popularity every year, and will in time develop into a first-class suburban show.

The exhibits in the various classes were generally of great merit, being remarkable for excellence of culture. The whole of the classes were well contested, the entries being numerous except in Class 1, which had only two competitors, and which was for eight stove or greenhouse plants in flower,

open to gentlemen's gardeners only. Mr. Reece, gardener to R. Whyte, Esq., Pentland House, Lee, was first with admirably grown and flowered specimens of *Dracophyllum gracile*, *Ixora Williamsi*, *Erica geminifera*, *Phenocoma prolifera Barnesi*, and *Erica Cavendishiana*; Mr. Sharpe, gardener to F. Hatchett, Esq., being second. In Class 2, for six plants of ornamental foliage, Mr. S. Reece was first, Mr. J. Lambert second, and Mr. Sharpe third. For six show *Pelargoniums* distinct, Mr. Reece was first with well-bloomed plants of *Illuminator* and *Sensation*; and with *Zonal Pelargoniums* Messrs. Reece, Martin, and Jeffery were the prizetakers. Mr. S. Reece was also first in the Fern class with well-grown plants of *Davallia Mooreana* and *Cibotium Scheidei* and others. For four *Lycopodiums* Mr. J. Lambert was first, Mr. Sharpe second, and Mr. Hudd third. Six *Caladiums* distinct—this class was well contested, the first prize going to Mr. Sharpe with sturdy and beautifully coloured plants, among which *cardinale* and *candidum* were very conspicuous; Mr. Martin, gardener to A. English, Esq., being second, with good plants of Dr. Lindley and Louis Duplessis; and Mr. Reece third. In the class for six *Cape Heaths*, Class 9, there was only one exhibitor, Mr. Reece, whose plants, however, were of first-class quality. In other classes the prize were taken by Mr. Hudd, Mr. Rhoden, Mr. Sholdice, Mr. Garland, Mr. Sharpe (gardener to F. Hatchett, Esq.), Mr. Reece, Mr. Mullins, Mr. Jeffery, Mr. Sharpe, Mr. J. Lambert, and Mr. Luff (gardener to — Hyatt, Esq., Streatham).

In the classes for cut flowers the entries were numerous, especially for *Roses*. In Class A for forty-eight single blooms (open) Messrs. Bunyard and Co. of Maidstone were awarded first for a splendid box of blooms. Especially fine were the blooms of *Abel Carrière*, *Madame Lacharme*, *Innocents Pirola*, *Duke of Teck*, *Madame Victor Verdier*, *Laurette*, *Duchesse de Vallombrosa*, *Madame Ferdinand* and *Jamain*, *Madame Bravy*, and *Merveille de Lyon*. Mr. J. W. Todman, The Nurseries, Eltham, coming in second with scarcely less inferior blooms, *Niphetos*, Dr. Andry, and *La France* being remarkably fine; and Messrs. John Laing & Co. of Forest Hill third. In Class B for twenty-four single blooms (open), Messrs. Bunyard & Co. were again first with good blooms of *Star of Waltham* and *Jean Ducher*, Messrs. Laing being second, and Mr. Harris third. Class C, twelve single blooms, open to gardeners and amateurs, Mr. Harris first with well formed flowers, notably so being *Baroness Rothschild* and *Marie Baumann*; Mr. Hemnade second, and F. Hatchett, Esq., third. In the class for a stand of cut flowers for dinner-table, Mr. Lambert was first with a very pretty and tasteful arrangement, Mr. Greenfield second, and Miss Buttenshaw third. With three stands of cut flowers for dinner-table Mr. Lambert first, Mr. Nunn second, and Miss Dent third. For a box of cut flowers arranged for effect, exhibitor's own growing, in Class F, the first prize went to Mr. Rhoden, second Mr. Mullins, and third Mr. Shrubb. For hand bouquets Mr. Kellsall, Mr. C. Boatright, and Mr. Shrubb were the prizetakers.

For the classes devoted to fruit there was a keen competition. The *Grapes* shown were of average quality. In Class A A Mr. Shrubb was awarded first for a collection of six dishes. For three bunches of black *Grapes* Mr. Jeffery first, Wright second, Cole third, and Hudd fourth. Three bunches of white *Grapes*, first Mr. Jeffery, second Mr. Wright, and third Mr. Sholdice. Single bunch of black *Grapes*, Mr. Feely first, Wright second, and Cole third. In other classes Messrs. Garland, Hudd, Shrubb, Holden, Sharpe, Boatright, Cole, Nunn, and Greenfield were the prizetakers.

The vegetable classes are not so well represented as they ought to be, but what was shown was of good quality, Messrs. Jeffery, Rhoden, and Nunn taking the leading prizes.

A silver Memorial cup is offered every year to the winner of the greatest amount of prize money. The cup remains in the custody of the winner's employer for the year, the gardener having for permanent possession a silver medal showing him to be the winner. Mr. S. Reece, gardener to R. White, Esq., is again the fortunate winner of this coveted prize, he having won it for three consecutive years.

ROYAL CALEDONIAN SUMMER SHOW.

THIS Show was held on the 8th and 9th inst. in the Waverley Market, Edinburgh. The amount of produce, judging by the appearance of the tables, being much smaller than we remember to have seen it. This may have arisen partly from the absence of the nurserymen's competition in the main plant classes; Messrs. R. B. Laird & Sons for instance being the only competitors in the class for a table of plants. *Roses* were good, though many of the flowers were rather past the first flush of beauty. *Grapes* were also a good show, and of *Orchids* there was a table of fine plants.

The chief class for gardeners was that for a table of plants 20 feet by 5 feet. For this Mr. R. Grossart, gardener to Mr. Buchanan, Oswald Road, was first, and Mr. C. Smith, gardener to Mr. Wilson, Restalrig House, second. Neither arrangement showed anything remarkable. For six stove or greenhouse plants in flower, Mr. J. Patterson, Millbank, was easily first, a noticeable plant being *Erica ventricosa Bothwelliana*. A good *E. Vernoni* was the only other specimen calling for remark. Mr. G. McLure, Trinity Grove, was second, and Mr. Bald, Canaan House, third. The class for three like plants brought out nothing above mediocrity, Mr. Scott, Carbery Tower, taking the first place. Mr. Patterson was the sole exhibitor of four *Cape Heaths*, *E. Paxtoni* being good. Foliage plants were small. For six Mr. Scott was first and Mr. Grossart second; while for three Mr. G. Wilkins, Canonmills Lodge, was first, and Mr. Patterson second. A few *Caladiums*, *Crotons*, and *Dracænas* were exhibited.

For four *Orchids* Mr. J. Curror, gardener to G. Douglas, Esq., Eskbank, was first, his chief plant being a *Cattleya gigas* with thirteen flowers. Mr. Grossart was second, showing a good *Odontoglossum vexillarium*, and a two-spiked *Vanda suavis*, and a good specimen of *Dendrobium suavisimum*. For two plants Mr. McLeod, Brentham Park, Stirling, was first, his chief plant being a *Cattleya regalis* with fourteen fresh highly coloured flowers. Mr. McIntyre, The Glen, Peebles, second. Mr. Grossart had the best single specimen, and Mr. McLeod the second. Ferns were in no case large, but they were fresh, the first prize for four exotics going to Mr. McKinnon, Melville Castle. Mr. Johnston, Woolmet, staged the best three *Adiantums*. British Ferns were better represented than their exotic brethren; the first prize for these going to Mr. Cumming, St. Roguc, who also took first for dwarf species.

Mr. Paterson, gardener to R. Dundas, Esq., Polton House, Lisswade, had

the best twelve Alpine plants in flower, these being extremely pretty. The kinds staged were *Campanula pentagonia*, *C. fragilis hirsuta*, *C. pumila alba*, *C. turbinata*, *C. t. Dicksoni*, *Saxifraga ceratophylla*, *S. aizoides aurantiaca*, very novel; *Primula floribunda*, *Dianthus alpinus*, *Statice miniata* (?), *Lysimachia nummularia*, and *Sedum glaucum*.

Roses.—The Roses, as we have said, presented a most attractive feature. In the nurserymen's classes the competition lay mainly between the Irish grower, Mr. H. Dickson of Belfast, and the Scotch grower, Mr. Smith, Stranraer, the Irish Roses heating the other most completely. For forty-eight, twenty-four, twenty-four Teas, twelve trusses, twelve sent out since 1882, twelve *Maréchal Niel*, twelve *Lady Mary Fitzwilliam*, twelve *Duke of Edinburgh*, twelve *Baroness Rothschild*, twelve *Mons. E. Y. Teas*, twelve *Sir Garnet Wolseley*, and twelve *Gloire de Dijon*, the Irish Roses were first. Mr. Bryson, Helensburgh, had the best collection of Roses, and Mr. Dickson second.

Some of the finer blooms in the prize lots were of Teas, *Lady M. Fitzwilliam*, *Etoile de Lyon*, *Maréchal Niel*, *Anna Ollivier*, *Catherine Mermet*, *Innocente Pirola*, and *Etendard de Jeanne d'Arc*; these were generally small. Of the H.P.'s the following were shown in good form: *Star of Waltham*, *La France*, *Merveille de Lyon*, *Etienne Levet*, *Alphonse Soupert*, *Souvenir de Léon Gambetta*, *A. K. Williams*, and *Merveille de Lyon*.

In the gardeners' classes there was a strong competition, but the blooms were much smaller and generally more overblown than in the trade classes. For thirty-six blooms Mr. Parlange, gardener to H. Dennistowne, Esq., Golfhill, Roslin, was first, many of the blooms being fine, large, and bright in colour. The second prize went to Mr. McColl, gardener to M. A. Murs, Esq., Ardenrohr, Row, and the third to Mr. G. Hunter, gardener to Mr. MacKnight, Lauriston Castle. Seven competitors staged in this class. For twenty-four blooms Mr. Parlange was first again, Mr. McColl second, and Mr. Dow, gardener to Sir David Baird, Newbyth, third. For twelve trusses Mr. Parlange was again first; Mr. A. McIntosh, gardener to Col. Milne Home, Paxton, Berwickshire, second. Mr. W. Matthews, gardener to T. R. Ure, Esq., Mona Cottage, Bonnybridge, had first for six blooms. Prizes were offered for several blooms of distinct varieties, but in no case were these fine. For twelve Tea Roses Mr. Hill Gray, Dunkeld, took first with a lot of fresh beautiful buds, though small; two magnificent buds of *Maréchal Niel*, however, were large and finely coloured. Mr. Parlange had the second prize for these. For six Teas Mr. McColl was first, and Mr. Scott, Carbery Towers, second.

For twenty-four cut trusses, stove or greenhouse plants, Messrs. Ireland and Thomson were first, Messrs. Dickson & Co. second. The latter firm had also first prize for hedging Violas and show and fancy Pansies. In the gardeners' section for twelve trusses stove or greenhouse plants Mr. Smith, Brentham Park, Stirling, was first, showing some beautiful Orchids, fine spathes of *Anthurium Schertzerianum*, and a *Pancratium*. Mr. R. Corkhury, gardener to H. H. Norie, E-q., Coltbridge Hall, second, and Mr. Grossart third. For twelve Pinks Mr. Parlange was first, as also for fancy Pansies, Mr. Ritchie, Denny, being first for show Pansies.

FRUIT.—With exception of the Grapes fruit was in scanty quantity. Mr. Johnstone, Glamis Castle, was the only exhibitor of a collection of fruit, in this case only four dishes being staged instead of eight as required in the schedule. This comprised two splendid bunches of Black Hamburgh Grapes, excellent Brown Turkey Figs, Sulhamstead Peaches, and a Best-of-All Melon. A special award was voted to these. For a Pine Apple Mr. Morrison, Archerfield, Drem, was first, and Mr. McKelvie, Brotmouth Park, Dunbar, second. Mr. Murray, gardener to Marquis of Ailsa, Culzean Castle, had a special vote for seven Pine Apples. For four bunches of Grapes five lots were staged, the first prize going to Mr. J. W. Mackenzie, gardener to the Marquis of Lothian, Newbattle Abbey, Dalkeith, the two bunches of Muscat of Alexandria being very fine, the other two bunches being fine Black Hamburghs; Mr. J. Hacker, gardener to J. More Nishett, Esq., The Drum, Liberton, second; and Mr. Bald, gardener to J. McFarlane, Esq., Oswald Road, third. Five pairs of Black Hamburghs were staged, the first prize going to Mr. Boyd, gardener to W. Forbes, Esq., Callander Park, Falkirk, for examples of super-excellent quality, large in bunch and berry and perfect in finish; Mr. McKinnon, Melville Castle, was second with two remarkably fine bunches. For two bunches of black of another kind Mr. Bald was first with two small but well-finished examples, seemingly of Mrs. Pince; Mr. Kerr, Sunlaws, Kelso, second. For two bunches of Muscat of Alexandria Mr. Morrison, Archerfield, was first with good well-ripened examples; Mr. R. Dunlop, gardener to J. Addie, Esq., View Park, Uddingston, second, with better though less ripe Grapes. For six Peaches Mr. Machattie was first with fine Early York; Mr. Cockburn, Colthridge Hall, second with Hales' Early. For six Nectarines Mr. Smith, Oxenford Castle, was first with fine *Violette Hative*, and Mr. Machattie second with Lord Napier, large and fine, but rather overripe. For six Figs Mr. McIntyre, The Glen, was first with Brown Turkey, and Mr. Young, Taymouth, second. Mr. McKelvie was first for a Melon, and Mr. Boyd second. Mr. Melville, St. Boswells, was first for a dish of Cherries. Mr. Sinclair, Prestonkirk, had first prize for four dishes of Strawberries and a single dish of the same fruit.

Bouquets.—Mr. P. Walker, Hope Park, Bonnybridge, for table bouquets had first prize; Mr. J. Cocker, Wheatlands House, Bonnybridge, being second. For two hand bouquets Mr. Cocker had first, and Mr. Bowman second.

Vegetables were almost without exception of poor quality. For a collection of twelve sorts, open to market gardeners, Mr. Logan, Coldstream, was first, and Mr. Miles, Sunnybank, second. For eight kinds, open to gardeners, Mr. Potter, Seacliff, North Berwick, was first, and Mr. Bowman second. Mr. John Stewart, Catherine Bank House, was first for a collection of salads, and Mr. Milne second. None of the single dishes were of a character worth noting.

Of miscellaneous exhibits Messrs. Methven & Sons, Messrs. Ireland and Thomson, and Messrs. Dickson & Co. each showed mixed tables of stove and greenhouse plants. Mr. R. Munro had a collection of alpine and herbaceous plants. Messrs. J. Lamont & Sons showed a large collection of named English and Spanish Irises, Alpine Poppies, and Herbaceous *Pæonies*. Messrs. Dickson & Co. staged an extensive assortment of cut flowers, including a large number of horder Pinks, laced Pinks, and a pure white variety, Mrs. W. M. Welsh, to which a first-class certificate was awarded. Some fine Fancy and Show Pansies were also staged by this

firm. From Messrs. Stuart & Mein, Kelso, came a new white *Lobelia*, Miss Hope, which may prove useful for greenhouses, also a large collection of cut *Pyrethrums* and Pinks, *Delphiniums* and herbaceous plants.

Among garden requirements were a few greenhouses, one from Messrs. Mackenzie & Moncur, Upper Grove Place, Edinburgh, fitted with their toothed ventilating gearing, which saves the ventilators from any bad effects of high wind. The outside was painted a chocolate colour picked out with gold, the finials and ridge ornamentation of bronze, making a very effective example of artistic greenhouse building. Messrs. Keith & Hardie, Edinburgh, showed a conservatory, the main feature of which was the strengthening of the rafters with flat iron strap running the entire length of the roof.

OXALIS CERNUA.

In the very pretty genus *Oxalis* we have an extensive assemblage of plants of so interesting a character, that it cannot but excite surprise that of more than 100 species known to hotanists, so few should be seen in general cultivation. The habit of the whole is remarkably neat and dwarf, their colours comprise nearly every imaginable shade, and the simplicity of their culture is such that the veriest novice can hardly fail in their successful treatment. A few only of the species are perfectly hardy, but a considerable number may be grown in the open borders during the summer and autumn; of many, however, the flowers are produced at so early a season of the year that they are chiefly cultivated in pots, for which all of them are admirably suited, and it is from this section of the genus that our illustration is taken.

The *Oxalis cernua* possesses in a high degree the qualifications we have attributed to the whole genus; its flowers are of the purest yellow



Fig. 9.—*Oxalis cernua*.

of a delicious Jasmine-like fragrance, and produced in greater abundance than in any other species of our acquaintance. On a bright sunny morning a pot of this plant will present up to noon a perfect blaze of beauty; but, as in the case of the rest of the genus, its flowers remain closed in cloudy weather, or where no direct sunshine penetrates.

As in most of the other species the root is a small bulb, from which arises a very short underground stem or stipe, to which the leaf-stalks are articulated. The leaflets, sprinkled with russet brown spots, are so broadly heart-shaped that they may be termed two-lobed, which, with its many-flowered umbel, serves to distinguish it among the stemless species. While young the leaflets are at the approach of evening folded back against the petiole, expanding with the return of the morning light; but the older leaves appear to lose gradually this sensibility to the solar radiations, and remain folded under all circumstances.

The umbel of flowers, consisting of eight to twelve blossoms, sometimes more, is supported on a smooth peduncle, or, to speak more correctly, scape, 6 or 8 inches long; and as each bulb throws up at least half a dozen scapes in succession, the flowering season of the plant may be fairly said to extend over a period of two months.

Cultivation.—After blooming the plants should be exposed in a sunny corner out of doors, water being gradually withheld. By degrees the leaves will assume a yellow tint, and finally fall off; and in this condition the pots containing the bulbs should be placed aside and kept perfectly dry until the season arrives for repotting them. If the ball of earth be now examined, a strong fibre may be traced from the surface-bulb quite to the bottom of the pot, and usually terminated by a cluster of young bulbs, each of the size of a nut. A pot planted originally with three bulbs will often contain, after flowering, a dozen or more full-sized roots, so that abundant facilities are offered for its propagation. At the base of the old bulb, which perishes, and also upon the short stipe proceeding from it, small offsets are often produced; but they are too minute to be

available for the ready increase of the plant. At the end of September, about which time the roots will begin to grow, they may be repotted in sandy loam, with a little peat or leaf mould, planting them, if large, singly in a 4-inch pot about an inch below the surface; but it is preferable to place from three to five or six bulbs in one of rather larger diameter, a good drainage of potsherds or fragments of charcoal being indispensable. If the weather is mild the pots may remain in a warm nook out of doors, due precaution being taken to protect the plants from those pests of the gardener—slugs, snails, and worms; but on the approach of frosts they should be removed either to a cold frame, or, in the absence of this, to a cool window of south aspect, where plenty of air can be admitted in mild weather. A dry hot atmosphere is injurious to the plant; it should, therefore, be grown at a comparatively low temperature, and be removed to the sitting-room only when about to flower. If potted at the period named it usually begins to blossom about the end of March; but this depends in some degree on the temperature in which it has been kept. If the roots were preserved in a dry state until January or February, we think it highly probable that they might be planted in the open borders with the protection of a handlight, and would then flower in May and June, but without this covering it would be imprudent to risk the bulbs. The treatment of all the winter and spring-flowering species may be assimilated to that of the *O. cernua*.

Our plant is not a recent introduction, having been brought as long since as the year 1767 from the Cape of Good Hope, of which country nearly one-half the species are natives. The trivial name of the plant is by no means distinctive, for there are many species the flowers of which droop before expansion; nor is the term more applicable to the leaves.—W. T.

SEASONABLE HARDY FLOWERS.

COMPARATIVELY few are aware of the numbers of hardy herbaceous and bulbous plants which produce flowers at this season, and having before me a charming series of these plants I have thought a few words respecting them may not be out of place. I may remark that it would prove a great help to those desirous of making selections of hardy plants for planting later, on were they to pay occasional visits to nurseries where these plants abound, and make notes of the best in flower at each visit, with date, height, and predominant colour. By so doing a much better idea can be formed of the real value of these plants, together with their requirements. Descriptions are very well, but in many cases they fail to convey an adequate idea of the plants, and to see living specimens in groups impresses one with the effect which can be produced with such things when they are judiciously arranged, for in many instances the effect has been marred by an insufficient knowledge of the plants themselves.

LILIES.

Prominent among the noble race of *Liliums* is the true *L. pomponium*, a native of the south of Europe. This attains a height of about 3 feet, and having fine spikes of rich fiery scarlet flowers, at first sight not unlike those of the scarlet *L. Martagon*, an old acquaintance we meet still occasionally in cottage gardens in fine clumps. This very effective species delights in a rich, loamy, well-drained soil; and here I may observe that it must not be confounded with *L. pyrenaicum rubrum*, which has often been supplied as the plant in question. They are very distinct, however, the one under notice being far superior. Then I take a glance at the lovely flowers of *L. Washingtonianum*, truly a grand Lily. This is seldom seen above 4 or 5 feet high, but when well established in favoured situations in peaty or light loamy soils it will grow fully 6 feet high. Its delightfully fragrant flowers are sometimes white, in others delicate lilac, and are sometimes spotted; and then there is the variety *purpureum*, which is also very fine, this is spotted with black. Next I observe the soft apricot and orange-shaded flowers of *elegans alutaceum*, only a foot high, grand for pots, and one of the most telling and distinct, and near akin is *elegans sanguineum*. This has fine reddish-crimson orange-shaded flowers, and is one of the largest and earliest of this section. Next comes *L. pardalinum pumilum*, of somewhat slender growth, with flowers of a deep orange and densely spotted; and lastly, among Lilies which are now before me, is *L. colchicum*, a Lily of noble bearing, powerful in its fragrance, and one of the most lovely and graceful of its race. The flowers before me are a clear golden yellow. It is, however, somewhat variable in this respect, as I find in an old memorandum some few years since I had several distinct forms of this charming plant. The flowers are very substantial and much reflexed. It grows 3 or 4 feet high, and delights in a rich well-drained loam; sometimes the flowers are primrose and more or less covered with dark spots.

CALOCHORTI.

How lovely, still somewhat quaint, are the flowers of *Calochorti* and *Cyclobothra*, but how seldom seen. Did they but

inhabit tropical climes, and extortionate prices demanded for them, we may see them more frequently. Can it be that they are not sufficiently known? It must be, for their elegance and somewhat novel form of some are sure to call forth admiration from those who first behold them. *C. albus*, *cæruleus*, *pulchellus*, *Leichtlini*, are among the best, and a fine flower of *venustus*, nearly the size of an ordinary Tulip, has large erect white blossoms, heavily blotched with purple at the base; the dense bearding of some forms is also a very distinct feature among these exquisite plants.

POPPIES.

In three colours I have *Papaver nudicaule*—namely, white, golden yellow, and deep orange, thus forming a trio of highly attractive and decorative plants at this time. These form compact tufts about a foot high, and are among the freest flowering plants of my acquaintance. For the rockery or front row in the border they are charming, and, being so easily reproduced from seed, will take care of themselves, and I am of opinion that they may with telling effect be used on old ruins and the like.

MISCELLANEOUS.

Geum coccineum plenum, a showy scarlet flower, is highly attractive and very useful. The same may be said of the *Armerias* or *Thrift*, which are very useful as cut flowers. *Triteleia laxa* has large showy heads of purple flowers, very pleasing and effective, and a valuable hardy bulbous plant. Among the *Alliums* I may mention *A. flavum* and *A. ciliatum*, the former a pleasing yellow, and the latter small pure white flowers exceedingly good and useful. *Cypripediums* are represented by *C. spectabile* and *C. acaule*, both well known plants, and *Irises* are too numerous to give in detail, all good and beautiful, and among the most chaste of hardy plants. Among the English section are some of the most lovely, in which *Mont Blanc* figures as a splendid white. Every conceivable shade of colour may be found among these, and the *germanica* group, both of which are unparalleled in beauty; indeed nothing can compare with them among hardy plants, and even among tropical Orchids they take no second-class place. Very fine somewhat pyramidal heads of pure white flowers are those of *Ornithogalum latifolium*, snowy in their whiteness, and a very ornamental hardy bulbous plant. *Pyrethrum parthenium fl.-pl.* produces small double white flowers in great numbers and is a very useful plant about 18 inches high. It becomes whiter after it has been in a room for some days.

Last, but not least, among hardy plants at present is *Heuchera sanguinea*, one of the loveliest introductions for many years. It is not only the most exquisite member of its genus, but one of the most beautiful rock plants yet introduced. It is thus described in Mr. Ware's list, "It thrives in the open air without any care, a fact which bodes well for its future prosperity. It forms a neat compact tuft of deep cordate leaves, five to seven-lobed, and these again sharply crenated, of a light green, and slightly hairy; the flower stems are slender, 12 to 15 inches high, covered with bright crimson flowers." There is no doubt that so lovely a plant will meet many admirers. The individual flowers are not unlike drooping bells of a bright coral red.—E. JENKINS.

ROYAL HORTICULTURAL SOCIETY.

JULY 14TH.

THOUGH the exhibitions at Kensington are so frequent they continue to increase in interest, and that held on Tuesday last was distinguished by the diversity and quality of the contributions from numerous competitors, especially in the fruit and vegetable classes. The plants, except as regards the groups, were not of a remarkable character, and were, in fact, rather disappointing, but the occasion was signalised by the extraordinary group of *Odontoglossum vexillarium* from Mr. Hardy, which caused as great a sensation as the *Scott Carnations* at the Rose Show last week. The entries in the twenty-six classes provided in the schedule, the non-competing collections, and the contributions before the Fruit and Floral Committees, filled all the available space in the conservatory, forming a highly satisfactory and varied display.

FRUIT.

Until this Show a really good exhibition of fruit had not been witnessed in London this season, and even this proved rather early for some exhibitors who usually take prominent positions in the more important classes. This weakness was chiefly apparent in the white Grapes, most of which were slightly wanting in ripeness, and amongst the black Grapes several bunches were noticeable that would have been greatly improved by hanging a week or two longer on the Vines. Peaches and Nectarines were much better than might have been expected, and in some instances were exceedingly fine. Pine Apples, Melons, Strawberries, Figs, and Cherries were all well represented. A superb collection of Peaches, Nectarines, and Cherries from Messrs. T. Rivers & Son, Sawbridgeworth, was greatly admired, and the silver-gilt medal awarded for it was a well-merited honour, for the fruits were the finest of their kinds in the whole Exhibition. The Cherries were particularly grand, and one dish of Early Rivers contained some magnifi-

cent fruits such as have never been surpassed. Bigarreau Napoleon, Bigarreau Gros Coeuret, Bigarreau Noir de Guben, Bigarreau Monstrueuse de Mezel, and Turkey Black Heart were similarly handsome in size and colour, a small yellow-fruited variety named Couleur de Chair being curious and pretty. Some of the Peaches were extremely large, Conkling being very notable in that respect; Dr. Hogg was also of handsome appearance, and Golden Rathripe was both large and of a fine golden hue. Nectarines were admirably shown, and one, the beautiful golden Goldoni, was certificated; the very dark Spenser, with Darwin, Pine Apple, Byron, Humboldt, and Seedling No. 2 were all of extremely fine appearance and excited innumerable expressions of admiration from the crowds of visitors.

Grapes.—Eleven competitors staged their productions in the class for three bunches of Black Hamburgs, and, as might be expected amongst so many, there was much difference in the quality of the exhibits, some being slightly deficient in colour; but all were good in other respects, and the leading bunches were of considerable merit. Sir A. K. MacDonald, Bart., Woolmers, Liphook, Hants (gardener, Mr. Taverer), was awarded first honours for very handsome bunches of medium size, but with splendid berries superbly coloured and bearing a dense bloom. Thomas Barnes, Esq., The Quinta, Chirk (gardener, Mr. J. Loudon), took the second place with larger bunches but smaller berries equally as well coloured as the preceding. Mr. D. Roberts, Prestwold Hall Gardens, Loughborough, was third with good bunches and berries, but rather wanting in colour, and they appeared to have been somewhat rubbed in transit.

For three bunches of any other black variety, Messrs. Rothschild, Gunnersbury Park, Acton (gardener, Mr. J. Roberts), amongst seven exhibitors, were worthily accorded the premier prize, the variety being Madresfield Court, the bunches and berries of grand size and bearing a superb bloom, such as renders this variety so imposing. Mr. Roberts has given much attention to it, and finer examples than those referred to could not be desired, evident proof of his successful treatment. Lord Suffield, Gunton Park, Norwich (gardener, Mr. Allan), followed closely with the same variety, also most creditable in the size of bunch and berry, but not so well coloured as the first stand. Lord Carrington, Wycombe Abbey, Bucks (gardener, Mr. G. T. Miles), was third with three bunches of Gros Maroc weighing 6 lbs. 6 ozs., handsome bunches, the berries large and finely coloured.

Muscat of Alexandria was not generally so well represented as the black Grapes, but the three bunches for which W. H. Seville, Esq., Warren Hill, Loughton, Essex, was awarded chief honours, were remarkable in size, being solid and well formed, but the berries were of medium size and too green to be quite satisfactory. They were, however, such admirable examples of good culture in respect to the size that the Judges could not pass them for the better coloured bunches which gained the second prize, and though the decision caused some discussion and comment the general opinion was in the favour of the "large" bunches. Mr. J. Loudon followed with smaller but good bunches, the berries of medium size and fairly well coloured. Sir P. F. Rose, Bart., Rayners, Bucks (gardener, Mr. H. Cakebread), was third with rather green samples.

Peaches and Nectarines.—Eleven dishes of six Peaches were contributed, and some uncommonly fine fruits were included amongst them. Mr. R. Farrance, Chadwell Heath, Essex, was placed first with Barrington of great size and very handsome. Mr. Cakebread was second with Grosse Mignonne similarly fine, and J. Corlett, Esq., Chorlton House, East Sutton (gardener, Mr. W. J. Bashford), was third for beautiful fruits of Crimson Galande. No less than sixteen dishes of Nectarines were staged, Mr. Bashford leading with Stanwick Elruge of fine colour and size. Mr. John Wallis, Keele Hall Gardens, Newcastle, was second with Lord Napier, handsomely coloured. Mr. Allan taking the third prize for Violette Hâtive, also admirable in size and colour.

Pine Apples.—Two classes were devoted to these, for a pair of fruits of one variety and a single fruit, nine competitors staging in the former class, and seven in the latter. Mr. D. Roberts had the best single fruit, Moscow Queen, a large handsomely developed fruit. Mr. R. Nicholson, Castle Hill Gardens, South Molton, gained the second honours with Smooth Cayenne, also large and of fine form, Mr. Loudon following with a slightly smaller Queen; but with the pair of fruits this exhibitor secured the chief prize for beautiful symmetrical well ripened Queens. Mr. T. C. Mundell, Moor Park Gardens, Rickmansworth, and H. J. Atkinson, Esq., Gunnersbury House, Acton (gardener Mr. Hudson), following with the same variety.

Strawberries.—To these two classes were also appropriated, and eleven exhibitors of two varieties competed. Mr. D. Roberts won the first place with British Queen and President, both large and well ripened, the latter being especially good. Mr. Allan secured the second prize for James Veitch and Crimson Queen, the last named of unusual size. Mr. J. Smith, High Street, Romford, was placed third for Dr. Hogg and British Queen, very few points inferior to the others. Amongst thirteen exhibitors of one variety, Mr. T. Eckington, Woodthorpe Grange, Nottingham, was the most successful, showing Sir Joseph Paxton in capital condition as regards size and colour. Mr. C. Waite followed with beautiful examples of British Queen, and Mr. Allan was third with Dr. Hogg, similarly fine. Other exhibitors had good examples of Eleanor, Sir Charles Napier, and Empress Eugénie.

Figs were shown by eight competitors, all very close in merit, and the prizes were won by Viscount Eversley, Heckfield (gardener, Mr. Wildsmith), Mr. Taverer, and Earl of Cork, Marston House, Frome (gardener, Mr. Iggulden), the variety in each case being Brown Turkey, differing slightly in size and ripeness.

Cherries were shown in excellent condition in the class for two varieties, of which seven lots were entered, Mr. Hudson leading with Black Circassian and Bigarreau Napoleon, both beautiful samples. Earl of Radnor, Longford Castle, Salisbury (gardener, Mr. Ward), was a close second with May Duke and Cleveland Bigarreau; and Mr. H. J. Goodacre, Elvaston Castle Gardens, Derby, was third with Black Circassian and Bigarreau Napoleon.

Ten pairs of Melons were staged, and the Marquis of Bath, Longleat, Warminster (gardener, Mr. Pratt), was adjudged first honours for handsome even fruits of the variety Longleat Perfection, recently certificated at Chiswick. Mr. Peter Goddard, Huxton Court Gardens, Maidstone, secured second honours with an unnamed scarlet-flesh variety, coarsely netted; and Mr. Wildsmith was third with Hero of Lockinge neatly netted and of medium size.

Prizes for Packing Fruit.—Messrs. Webber & Co., Covent Garden Market, offered three prizes for the best boxes of Peaches packed ready for market, which brought eight exhibitors, the awards being secured by Mr. Thomas Turton, Maiden Erleigh, Reading; Mr. Thomas Hare, Wellington, and Mr. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford. In each of these the system adopted was similar—namely, the Peaches were packed in single layers in boxes 4 to 5 inches deep, the individual fruits being wrapped in tissue paper and then packed firmly in moss. The fruit was in excellent condition, as fresh as if but just gathered. Some of the non-successful candidates had employed cotton wool, and one had used bran, but neither appeared so satisfactory as the moss and tissue paper.

VEGETABLES.

An excellent display of vegetables was provided, and it would be very difficult to obtain fourteen better or more even collections than those entered in the class for eight varieties, the closeness of the competition rendering it still more interesting. In another respect it was remarkable—namely, in the victory obtained by Mr. G. H. Richards, gardener to the Earl of Normanton, Somerley Park, Ringwood, Hants, who succeeded in defeating that redoubtable exhibitor, Mr. G. T. Miles, by several points. All the vegetables in Mr. Richards' premier collection were extremely fine, and they were, moreover, tastefully set up on Parsley, a point which always adds much to the appearance of a collection generally. The varieties shown were Daniels' White Elephant Onions, 5 to 6 inches in diameter, very even white and solid, superb examples; Lapstone Kidney Potatoes, clean, even, and handsome; Green Globe Artichokes, Canadian Wonder Beans, very fine pods; Perfection Tomatoes of medium size, but even and well ripened; Sanders' Marrow Pea, large well filled pods; Early London Cauliflowers, white, fresh, and excellent, heads of moderate size; and Sutton's Improved Intermediate Carrots, large and even samples. Mr. G. T. Miles had the following in the second prize collection:—Veitch's Pearl Cauliflower, a trifle too old and slightly brown; Asparagus, very fine; Sutton's Intermediate Carrots, good, but not quite so large as in the first; Snowdrop Potatoes, Stamfordian Tomatoes, very handsome; Culverwell's Green Marrow Peas, and Early White Naples Onions, very handsome. Mr. Miles gained a point with his Tomatoes, but he lost one with the Potatoes, the Cauliflowers, and the Onions; and preference was also given to the Beaus as compared with the Asparagus, as being a more seasonable dish. Mr. S. Haines, gardener to the Right Hon. Earl of Radnor, Coleshill House, Highworth, was a good third, showing creditable examples of Autumn Giant Cauliflowers, Woodstock Kidney Potatoes, Trophy Tomatoes, large Green Globe Artichokes, Pen-y-Byd Marrows, White Leviathan Onions, Nantes Horn Carrots, and Duke of Albany Peas, good. Extra prizes were awarded to Mr. Thomas A. Beckett, Cole Hatch Farm, Bucks, and Mr. C. J. Waite, the former showing Fillbasket Tomatoes and White Naples Onions, fine; the latter having Hackwood Park Tomatoes and White Leviathan Onions in excellent condition.

Tomatoes.—Eight dishes of very fine fruits were entered in the class for these, Mr. R. Farrance securing first honours with extremely large, even, highly coloured examples of Trophy Improved. Messrs. W. & E. Wells, Crosby Gardens, Hounslow, followed with Trophy, not quite so even, but large and handsome; Mr. R. Phillips, The Deodars, Meopham, taking the third place with Carter's Perfection Tomatoes, fine, solid, well-formed fruits of high colour.

Cucumbers.—A dozen brace of Cucumbers were staged in competition very close in merit. Mr. Goodacre was first with Telegraph, 20 inches long, even well-proportioned and handsome. Mr. Ward followed with Purley Park Hero, not quite so long but equally handsome, and Mr. Richards was third with the same variety a few points behind.

Special Prizes for Peas.—Messrs. E. Webb & Sons, Wordsley, Stourbridge, offered three prizes for the best twenty-four pods of their new Pea Wordsley Wonder, and the fourteen competitors all staged handsome examples. Mr. H. Marriott, Skirbeck, Mr. J. Cook, Boston Long Hedge, and Mr. H. Marriott, jun., securing the first, second, and third prizes. Mr. J. House, Peterborough, also offered three prizes for forty pods of his Perfect Marrow Pea, which brought eight competitors, the most successful being Messrs. H. Marriott, Cook, and Marriott, jun., all staging fine pods.

PLANTS AND FLOWERS.

The plants in competition were of an ordinary character, and, except those from Mr. Hudson, which were placed first in the classes for nine Crotons, nine Dracenas, and nine foliage plants, they do not call for special comment. Those named were, however, neat plants, both the Crotons and Dracenas being well coloured, while the foliage plants comprised a wonderfully large Asparagus plumosus. Mr. Luff and Mr. Chadwick secured the principal of the other prizes with small plants, Mr. C. J. Waite having the best six Coleuses. Mr. H. James, Castle Nursery, Lower Norwood, won the premier prize with Nepenthes, Sarracenas, and twelve foliage plants, staging specimens which we have repeatedly noticed before.

Cut flowers were much better, and the hardy flowers were admirably represented by three exhibitors. Mr. T. S. Ware, Tottenham, gained first honours for a collection of flowers, the numbers unrestricted, and, as usual, had a most beautiful exhibition, comprising a large number of the most effective varieties and species, amongst which Campanulas, Irises, Lilies, Delphiniums, Phloxes, Veronicas, and Aquilegias were predominant, the pretty yellow *Linum campanulatum*, the white *Papaver nudicaule album*, the very free and handsome *Lilium candidum speciosum*, the charming dwarf white *Campanula pumila alba*, and a finely coloured variety of *Lilium pardalinum* named *californicum* being especially notable of the others. Messrs. Paul & Son, Cheshunt, were placed second with a very meritorious and well arranged collection, comprising a selection of the most choice and handsome flowers, of which some of the most striking were *Bupthalmum cordifolium* and *salicifolium*, with large yellow heads of narrow florets; *Coreopsis grandifolia*, large golden yellow; *Centaurea macrocephala*, with globular heads of yellow flowers 3 inches in diameter, very effective; *Calliprora lutea*, wite neat yellow star-like flowers; and the bright scarlet *Geum coccineum plenum*. Mr. E. Morse, Epsom, was third, also with a good selection of useful and effective flowers, *Campanulas turbinata* and *carpatia alba* being very notable, with the graceful scarlet *Chelone barbata* and a small white *Dianthus* named *Marie Paré*. For six *Lilium* spikes Mr. T. S.

Ware was also first, showing fine flowers in Browni, Martagon dalmaticum, extremely dark; testaceum, buff yellow; Humboldti, yellow with maroon spots; Parryi, bright yellow; and canadense rubrum. Messrs. Paul & Son followed, showing Browni, Parryi, Martagon, pardalinum, umbellatum, and Washingtonianum, the latter being especially pretty; and Mr. Quarterman, Cobham, Surrey, was third, his flowers of Lilium Harrisii being uncommonly fine. Mr. T. S. Ware was the only exhibitor of twelve Phloxes, gaining the first prize with large trusses of distinct and diversely coloured varieties.

MISCELLANEOUS.

The most remarkable of the non-competing groups were the plants of *Odontoglossum vexillarium* from G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, which have already been incidentally referred to. Seventy plants were arranged with Ferns and small Palms, and formed an exceedingly beautiful group, which fully deserved the highest honour the Society could give—namely, a silver-gilt Banksian medal. The plants were all extremely healthy, and some very large ones having 300 flowers, and all were genuine specimens, none being made up. In all there were 1037 spikes, comprising probably over 5000 blooms, varying from pure white to the deepest rose, and it was astonishing to observe that though the plants had travelled so far, and the flowers are extremely delicate, not one appeared to be bruised in the slightest degree. Mr. Hardy deserves the highest praise both for the fine condition of the plants and the liberal spirit which induced him to send such a valuable collection of plants so long a distance.

Messrs. J. Veitch & Sons, Chelsea, were awarded a silver medal for a handsome collection of Rose blooms, nine boxes being staged, representing all the best varieties in capital condition, bright, fresh, and substantial. Very notable was a stand of *Rosa lucida*, Rose Button, a charming buttonhole Rose, very neat in the bud, and of a clear bright pink, being borne in dense trusses. It is an extremely floriferous and pretty variety, which should be grown by all who have to cut large quantities of flowers for bouquets, buttonholes, or decorative purposes generally. A similar award was also granted to Messrs. Lee & Son, Hammersmith, for a large collection of Rose blooms and a handsome group of variegated shrubs and trees, amongst which Ivies were particularly noteworthy, margined with dwarf Roses in pots. Bronze medals were awarded to Messrs. Kelway & Son, Langport, for an extensive collection of choice hardy flowers, several boxes of *Gaillardias* being extremely bright amongst them; and to Mr. T. A. Beckett for a collection of well-grown vegetables, comprising very fine Leviathan Beans, the pods 12 to 14 inches long, some good Lettuces, and Moore's Cream Vegetable Marrows very neat and even.

A silver medal was awarded to Messrs. J. Carter & Co., High Holborn, for an extensive collection of Peas, including sixty dishes of about the same number of varieties. Many of these were extremely fine, especially notable in this respect being *Pride of the Market*, *Telephone*, *Telegraph*, *Ne Plus Ultra*, *Stratagem*, and *Giant Marrow*. Very interesting also was a dish of the Purple-podded Pea, and many other curious and excellent varieties were staged. Messrs. Rivers' superb collection of fruits, for which a silver-gilt medal was awarded, has already been noticed.

FRUIT COMMITTEE.—Present: F. D. Godman, Esq., in the chair, and Messrs. Harrison Weir, Francis T. Rivers, S. Lyon, Charles Ross, G. Paul, Harry J. Veitch, John Lee, F. Rutland, R. D. Blackmore, Sidney Ford, J. Willard, G. Bunyard, T. B. Haywood, John Burnett, Wm. Paul, and J. Roberts.

One of the most interesting exhibits before the Committee was a bunch of a seedling Grape shown by Mr. Bannister, Cole House, Westbury-on-Trym, Bristol. This is the result of a cross between Muscat of Alexandria and Black Hamburg, and in the bunch shown the berries resembled the latter in shape, but they were like the Muscat in colour and flavour. It is said to be an extremely free-setting variety and very productive, finishing well in a cooler temperature than Muscats. The bunch shown was not quite ripe, and the Committee expressed a desire to see it again later in the season, but in the meantime the general opinion was very favourable. Mr. Bannister also had some samples of Early Harvest Apples. Messrs. Paul and Son, Cheshunt, were awarded a vote of thanks for a collection of late Strawberries, comprising Loxford Hall Seedling, Cockscomb, Frogmore Late Pine, Sir J. Falstaff, Lord Napier, and Marie Nicaise. Frogmore Late Pine was considered the best and Cockscomb next, the last named having also fine fruits. From the same firm came a plant and fruits of a new Alpine Strawberry named Constantin Tretiakoff, and a new white Currant, White Versailles, extremely prolific, and bearing large bunches of fine berries. Messrs. Veitch & Sons showed several Strawberries, Loxford Hall Seedling being especially fine, and some excellent examples of Baumforth's Raspberry, for which a vote of thanks was granted. Messrs. Webb & Son and Mr. House sent several Peas, which were referred to Chiswick for trial, as was also Mr. Laxton's Strawberry Ultima, a cross between British Queen and Helena Gloede. Mr. R. Dean had good specimens of the White Chavigny Lettuce. Mr. H. Marriott, Boston, showed fine pods of Carter's Telephone and Telegraph Peas. Mr. C. Ross, Welford Park Gardens, had three dishes of Apples: Northern Spy, Lewis's Incomparable, Sturmer Pippin, well kept. Mr. Walker, Thame, showed samples of Pea Oxfordshire Gem, which he claims to be a rival to Telegraph. A seedling Melon from Hero of Lockinge and Blenheim Orange was sent by Mr. Coombs, Sheen House, Mortlake, and Messrs. Carter & Co. had growing plants of their Liliputian Potato, with compact haulm 8 or 9 inches high and small curling leaves.

Nectarine Goldoni (Rivers).—A first-class certificate was awarded for this handsome Nectarine, which is of medium size, a fine golden yellow colour with a reddish tinge on one side, and of excellent flavour.

On July 10th a meeting of the Fruit Committee was held at Chiswick. Present: Mr. H. J. Veitch in the chair; Messrs. Weir, Haywood, Silverlock, Miles, and Bunyard. The Committee met for the examination of the Peas, and first-class certificates were awarded to the following:—

Autocrat (Veitch).—A dwarf wrinkled blue Marrow.

Prodigy (Veitch).—A tall green wrinkled very prolific handsome Pea.

Shropshire Hero (Eckford).—A dwarf white wrinkled variety.

Quality (Eckford).—Tall green, wrinkled, of fine quality and most prolific, a very promising variety.

The following Strawberries were certificated—

Waterloo (Mr. Bone, Latimers, Chesham).—Fruit large, cockscombed, very dark in colour and of good quality, distinct.

A. F. Barron (Laxton).—A beautiful variety with even conical fruits of a bright scarlet colour, very firm and of good flavour, possessing a pleasant acidity. This was formerly named Admiral.

Melon Longleaf Perfection (Mr. Pratt, gardener, Longleaf, Warminster).—Fruit large, round, smooth, pale greenish yellow; flesh white, very melting, sweet. It is a seedling from Cashmere, which it much resembles.

FLORAL COMMITTEE.—Present Shirley Hibberd, Esq., in the chair, and Messrs. G. Henslow, T. Baines, H. Bennett, W. B. Alby, W. Wilks, F. R. Kinghorn, J. James, H. Herbst, Amos Perry, G. Duffield, C. Noble, John Fraser, J. Dominy, H. M. Pollett, James O'Brien, E. Hill, G. F. Wilson, J. T. D. Llewellyn, Jas. Douglas, J. Hudson, and James Walker.

Messrs. J. Veitch & Sons, Chelsea, showed a distinct variety of *Clematis flammula*, named *rubra marginata*, the flowers neatly margined with purple. Some fine blooms of *Clematis coccinea* and the pure white *Andromeda speciosa cassiæfolia* were also staged, and a vote of thanks was accorded. Mr. B. S. Williams, Upper Holloway, had a plant of *Vanda Dennisoniana hebraica*, a pretty variety with the yellowish sepals and petals marked with dark lines, and fragrant, somewhat suggestive of Violets. G. F. Wilson, Esq., Weybridge, sent a basket of beautiful Lilies, all from the open ground, except *L. longiflorum albo-marginatum*. Mr. R. Owen, Maidenhead, had collection of handsome double Tuberous Begonias, several of which were certificated. Mr. Salter, Selborne, Streatham, had some flowers of *Sobralia macrantha splendens*, a very highly coloured variety. Mr. D. Munro, Dingwall, sent a collection of Fancy Pansies and a neat white *Viola* named Snowdrift. Mr. Burrell, Chislehurst, had a collection of seedling Begonias. Some attractive Regal Pelargoniums were shown by Messrs. G. Bunyard and Co., Maidstone, one of the most notable being *Princess Alexandra*, white with a crimson spot in the upper petals, very free and of good habit. R. H. Measures, Esq., Streatham, showed several Orchids, the curious brown-coloured *Odontoglossum cristatellum* having three spikes, and *Epidendrum vitellinum majus* had large brilliantly coloured flowers. A. H. Smees, Esq., The Grange, Wallington (gardener, Mr. Cummins), exhibited *Cattleya Wallis*, with white flowers, the lip blotched with orange; *Lycaste Deppei viridis* and *Oncidium cornigerum*. Messrs. J. Carter & Co. sent a beautiful Sweet Pea, named *Dedham Rose*, of a very distinct rose colour, also a double *Silene pendula compacta* of a much brighter colour than the single form; and *Rhodanthe Manglesi alba*, a white-flowered variety. Mr. Cobb, Silverdale, Sydenham, showed a plant of *Odontoglossum vexillarium Cobbianum*, which had a white lip and rose-coloured sepals and petals. Messrs. Heath & Son, Cheltenham, contributed a wonderfully fine *Odontoglossum vexillarium* named *giganteum*, the lip of which was 4 inches in diameter, and the colour was also good. Mr. Eckford, Boreatton Park, had a fine collection of Sweet Peas, which were highly commended. Messrs. Sanders & Co., St. Albans, showed a spike of *Cattleya Sanderiana* with seven large flowers. Mr. King, Aylesbury, had two new *Coleuses* *Pride of the Market*, prettily mottled, and *Lord Rothschild*, crimson. Mr. R. Dean exhibited some fine spikes of Ten-week Stocks, *Bedfont Crimson* and *Mauve Beauty*. Messrs. Henderson & Co., Maida Vale, had an extensive group of *Caladiums*, and Mr. C. Turner showed plants of the handsome white *Carnation Lady Rose Molyneux*, a floriferous variety.

CERTIFICATED PLANTS.

Rose Pride of Reigate (Paul & Son, Cheshunt).—A distinct and handsome sport from *Comtesse d'Oxford* obtained some time ago, and now thoroughly tested. It is of a fine rich crimson colour, splashed and mottled with a lighter shade or white. The blooms are full and of good form.

Rose Madame Norman Neruda (Paul & Son, Cheshunt).—A beautiful H.P. of fine substance and excellent form, the petals slightly recurving colour, a clear rose pink, and extremely fragrant.

Pelargonium Blanc Parfait (Bealby).—A double white Zonal variety with neatly formed flowers in compact trusses.

Pelargonium Rubens (Bealby).—A double Ivy-leaved variety, the flowers very full and of a flowing rosy scarlet hue, most distinct and effective.

Renanthera Storyi (Hill).—One of the *R. coccinea* type, but differing in the broader and more richly marked divisions of the flower.

Odontoglossum vexillarium Measuresi (Measures).—A pure white variety, with only a slight shade of yellow in the centre of the lip.

Alcacia Hendersoni (Henderson).—A handsome *Alcacia* with metallic-like, dull dark green, and whitish leaves, sagittate in form, 12 to 18 inches long and 6 broad, with a puckered surface and strongly marked veins.

Begonia General Gordon (Owen).—An enormous double Tuberous variety, with salmon rose-coloured flowers.

Lilium Parryi (New Plant & Bulb Company).—A distinct and now well known Lily, with flowers of moderate size and bright clear yellow in colour.

CHRYSANTHEMUMS—STEM AND ROOT CUTTINGS.

REFERRING to several notes which have of late appeared as to Chrysanthemums being in flower, it may be pointed out that this is no uncommon feature; at least I have had experience of it for many years. When I first had to do with Chrysanthemums it was to grow them for purposes of exhibition, and it was then I found that several sorts had a bad tendency of flowering in summer when cuttings were taken from the flowering stem of the parent plant. It was a cause of much annoyance to grow and train a number of plants for several months to find a few of them flower at a season when not wanted. The lesson I learned then I have remembered ever since, and that is always to select cuttings from the rootstock. *Cedo Nulli*, especially the lilac variety, and the varieties of Mrs. G. Rundle, are very liable to flower in this way, and I should be inclined to believe that any Japanese sorts will do so also.

I well remember many years ago how Mr. Forsyth of Stoke Newington created a small sensation by showing cut-down plants in flower in the end of June. Of course if plants are wanted to flower in June it is worth knowing that this can be managed by selecting cuttings for the purpose.

However, this is quite another thing from keeping the same plants flowering for six months; and it must not be expected that any of these *Chrysanthemums* will flower between July and their usual period of blooming.—R. P. B.

ANNUAL REPORT OF THE CAMBRIDGE BOTANIC GARDEN SYNDICATE.

THE Botanic Garden Syndicate report to the Senate of the Cambridge University that the general condition of the garden is very satisfactory, and amongst other items occur the following:—Various valuable alterations have been made in the arrangement of the contents of the plant houses. A few flowering shrubs have been planted in the long Fern house, thereby improving its general appearance; and some of the finer Ferns have been selected for better—i.e., more careful cultivation than is possible when all are mixed together. The collection of Orchids has received special attention, so as to promote the health of the plants and at the same time reduce the amount of labour necessarily bestowed upon them. Endeavours have been made by the formation of brick enclosures to improve the cultivation and thereby the general appearance of various kinds of plants. Insectivorous plants have received much attention with the view of obtaining as perfect a collection of them as possible, and providing the principal species in sufficient quantity for scientific investigation. The same object has been kept in view in the cases of other plants of special interest.

Much time and labour have, as usual, been expended on the correct labelling of the specimen plants. Nearly 2300 large labels have been renewed during the past year, and between 4000 and 5000 of smaller size have required to be re-written. These labels are now nearly all made of zinc, which combines the advantages of permanence and cheapness. The bog garden is considerably improved by a re-arrangement of the water supply and by the formation of a drier portion adjoining the boggy part. Labour provided for by the special grant has been applied to the extensive thinning of the belt. This has long been much needed in order to allow the trees to develop their true character. The ground under the trees has been extensively sown with grass, thereby rendering them more easily accessible, removing the mass of weeds which grew there, and reducing the amount of labour necessary in this part of the garden.

Among the principal plants of scientific interest that have flowered in the garden are *Allium karataviense*, n. sp.; *Antigonon leptopus*, which has flowered very rarely in this country; *Arctotis Leichtliniana*, n. sp.; *Cochlostema Jacobianum*, possessing remarkable structure; *Gazania longiscapa*, a figure of which will be published in the "Botanical Magazine;" *Impatiens episcopi*, a new and valuable plant; *I. Hookeriana*, a fine species rarely flowered; *Iris Bartoni*, drawn for the "Botanical Magazine;" *I. Bloudowi*, new and rare; *I. hexagona*, "Botanical Magazine," t. 6787; *Jasminum angulare*, a new introduction received from Mrs. Birks; *Narcissus pachybolbus*, drawn for "Botanical Magazine;" *Nelumbium luteum*, difficult to grow and rarely flowered; *Nymphaea flava*; *Passiflora foetida* (pectinifera); *Salvia paniculata*, "Botanical Magazine," t. 6790; and *S. Greggii*, *Botanical Magazine*, t. 6812.

Among the species that have been of special interest as producing their fruit are *Pandanus furcatus*, *Thladiantha dubia*, and *Vitis pterophora* (*V. gongyloides*), flowered before, but now fruited for the first time. A speciality has been made of the genus *Salvia*, and four species derived from this garden have now been figured in the "Botanical Magazine."

About 1055 plants and 678 packets of seeds have been received. The number of plants is less than usual. As it has been considered necessary to limit exchanges on account of the large amount of labour it entails, and because the great increase in the number of plants with but the same insufficient staff has been found to make limitation necessary. Important plants, however, have been sought with no less diligence, and of those probably as many as usual have been received from the Botanic Gardens of Kew, Edinburgh, Glasnevin, Trinity College, Dublin; Jardin des Plantes, Paris; Liège, Palermo, Jardin des Plantes, Montpellier; St. Petersburg, Saharunpore, and Melbourne, and a return has been made to the majority of them.

The valuable collections of plants from Kew require special mention, as also a fine collection of Ives, Clematis, and new plants from Messrs. Jas. Veitch & Sons, Rosa (species and varieties) from Messrs. Paul & Son, new Irises from Prof. Foster, Croci from Col. T. Clarke, new and choice plants from Herr Max Leichtlin, collection of plants from St. Petersburg, new plants from Mr. Wm. Bull, and collection of Gesneriaceae from Messrs. Ant. Roozen & Son. As new plants of value introduced to the Cambridge Botanic Garden, *Porana paniculata*, a fine E. Indian *Convolvulus*, and *Impatiens episcopi* may be mentioned.

The condition of the roads and fences in the "Field" has been considerably improved. During the winter 352 yards of road were remade, and will last in good order with little attention for some years. The Thorn hedges have been made good where necessary, and about 110 yards of new hedge has been planted. A pair of swans was last year presented by St. John's College, and have been placed in the pond, where they have entirely prevented the appearance this season of the worst of the water weeds, *Potamogeton lucens*, which before grew thickly in every part.

RELATIVE VALUE OF MANURES.—I think your correspondent "Another Thinker" has hit the right nail this time, and deserves corroboration, for although the manure I use (Standen's) appears high-priced, I obtain good results from spoonful doses, hence it goes much farther than apparently cheaper articles. Your correspondent, Mr. W.

Taylor, bears me out, for he recommends half a pound of Standen's 10 square yards.—J. L. B.

HORTICULTURAL EXHIBITIONS.

THE following list of Shows, with the dates, may possibly be useful for reference.

- July 16.—Chiswick. Helensburgh (Roses). Winchester.
 " 18.—Birkenhead (Roses).
 " 21.—Newcastle, Staffs.
 " 22.—Newcastle-on-Tyne.
 " 25.—Darlington (Roses).
 " 28.—Royal Horticultural Society (Carnations, Begonias, &c.). Buckingham.
 " 29.—Aberdeen.
 " 30.—Oxford.
 August 1.—Liverpool (two days). Southampton (two days).
 " 2.—Antwerp Exhibition of Plants (five days).
 " 3.—Northampton.
 " 11.—Royal Horticultural Society (plants and flowers).
 " 18.—Basingstoke.
 " 19.—Shrewsbury (two days).
 " 20.—Salisbury.
 " 21.—Exeter.
 " 25.—Royal Horticultural Society (Cottagers' show).
 " 27.—Ludlow. Reading.



HARDY FRUIT GARDEN.

AGAIN has dry weather put our arrangements for the garden water supply to a severe test, and glad should we be to know that all gardens could have as plentiful a supply as ours has, and yet we had simply to make a pond to catch the waste water of a reservoir to insure an ample supply always. In addition we have the house sewage thrown up to the fruit garden by a force pump and underground pipe, and the supply of this fertiliser is always in excess of the demand. With such facilities it is an easy matter to keep fruit swelling without a check, and the sewage is of especial value among bush fruit, not only while the fruit is swelling, but subsequently to promote strong wood growth and the development of plump buds for next year's crop. Black Currants can hardly be overdone with sewage now. We like to see them throw up plenty of suckers as big as one's finger, and to have such shoots grow into sturdy branches fully 6 feet high; then, and only then, do we consider the bushes as fully grown and as capable of yielding as large a crop of fruit as they ought to do. Raspberries, too, require much water—preferably sewage now, and if the soil is left undug between the rows and a mulching of half-decayed manure applied as we have so frequently advised the roots are so close to the surface as to absorb moisture quickly, and the mulching checks excessive evaporation. Clean water is used among Strawberries to assist the growth and ripening of the late fruit. Without watering, the season of ripe Strawberries from the open beds is apt to be much curtailed by hot dry weather. Peaches and Nectarines now derive much benefit from frequent waterings applied to the border. The foliage must also be kept clean and free from red spider, or it is liable to be shed prematurely to the serious drainage of both fruit and wood growth. In using a syringe see that the water is forced well upon the under side of the leaves, for that is precisely where the spider so often does harm. See to the training of young trees, and remove or loosen all fastenings likely to prove hurtful to the swelling growth. Where nails and shreds are used for wall trees, nails against which fruit is pressing must be carefully removed. The crop of Figs, especially of Brown Turkey, is so abundant that the fruit has been thinned. This is never done till fruit-shedding is over, a certain proportion of the fruit often growing for a time and then falling off prematurely. As Gooseberries ripen much pains must be taken with the netting, or the blackbirds will find a way in to the fruit. A couple of garden mats put round each bush with a piece of netting across the top is better than all netting, as the birds always try to find a passage in at the bottom.

FRUIT FORCING.

PEACHES AND NECTARINES.—In private establishments where it is necessary to maintain a steady supply of fruit throughout the season, houses that will contain three or four trees each are better than larger houses in which early, midseason, and late varieties must be planted so as to afford the needful succession. The difference is really a matter of arrangement, a division making all the difference, and then planting with varieties that will succeed each other in the order of ripening. For the earliest house—Peaches: Alexander, Hale's Early, and Stirling Castle. Nectarines: Lord Napier, Hunt's Tawny, and Elruge. Second early house—Peaches: A Bec, Grosse Mignonne, and Royal George. Nectarines: Violette Hâtive, Stanwick Elruge, and Pitmaston Orange. Midseason houses—Peaches: Dr. Hogg or Belle Beauce, Noblesse, Violette Hâtive. Nectarines: Hardwicke Seedling, Large Elruge, and Pine Apple. Late houses—Peaches: Bellegarde, Barrington, and Late Admirable. Nectarines: Pine Apple, Albert Victor, and Victoria. Latest houses—Peaches: Walburton Admirable, Prince of Wales, Lord Palmerston, and Salwey. Nectarines same as preceding. We have only mentioned varieties of

known merit, and we do not wish to deter anyone from planting new varieties, as many of them have excellent points; earliness or lateness, size and colour may be mentioned as improvements shown in them, but rather to guard planters against giving the best positions to trees until their merits are thoroughly established. Although it is still too early to think of planting fruit trees, their removal to Peach houses is best performed before the fall of the leaf, hence the selection should be made during the next month, so as to secure the best trees, preference being given those that have been trained two or three years to walls and have the growths evenly balanced, clean, and moderately vigorous in growth.

CHERRY HOUSE.—The effect of forcing year after year is often a second crop of flowers, which necessitates precautionary measures. It is necessary, therefore, to note the development of the buds, and so soon as the wood has become sufficiently ripe the trees ought to be fully exposed, and where this cannot be done the structure ought to be completely thrown open—i.e., the ventilators. This, however, is not the sort of structure in which to grow Cherries, as it must be evident that the growths made this year will mature earlier than the preceding growth or that of last year, hence the necessity of exposure to the dews and ripening influences of the atmosphere. The subsequent attention will consist in keeping the foliage clean, and syringing them if the weather be dry; above all be careful to pay strict attention to the state of the roots as to moisture, as it is of the greatest importance, indeed essential, to keep them equally moist. If the rainfall be good they will not need water, but if the rainfall is insufficient recourse must be had and without procrastination to watering. When the trees show signs of debility let the condition of the roots be ascertained, and if these are healthy give the border a light sprinkling of Beeson's, Clay's, or some other manure, and wash in or apply manure in liquid form. This will encourage root-action, and the growth will show improvement in the coming season. In applying stimulants it should never be forgotten that weak supplies repeated are far more efficacious and safer than strong applications given occasionally, at the same time the watering when given must be thorough, as dribbles are practically useless.

CUCUMBERS.—Attend regularly to the stopping, thinning, tying, and arranging of the growths, and any plants showing signs of exhaustion should have the bed surface-dressed with an admixture of well-decomposed dung and lumpy loam, and the whole well watered, and then mulch with 3 inches thickness of sweetened horse droppings and maintain a suitable atmosphere. It is astonishing what effect an ammonia-charged atmosphere has on languishing vegetation, especially Cucumbers. Syringe the plants twice a day, being careful to use it soft and of the same temperature as that in which the plants are growing. Cold water gives a check, and is followed by mildew. Pits and frames cleared of Melons may be utilised for a late crop of Cucumbers, making a good succession to those in bearing, and by attending to them with linings a supply may be kept up until Christmas.

MELONS.—Canker is a great plague in some places, and though we have tried many things as a preventive it still appears; and though we consider it a consequence of too much moisture settling on or about the stems of the plants, we have had it most virulently when the soil about the plants has been kept dry. Hence we keep a sharp look-out for it, and on the least sign rub the affected part with quicklime. This, if taken soon enough, is a sure remedy, but it is no use trying to arrest it after it has obtained such hold as arrest the flow of the sap and cause the flagging of the foliage. Plants swelling off their crops will need liberal supplies of moisture both at the roots and in the atmosphere, but avoid a close vitiated atmosphere, for though the fruit will swell off to an enormous size it will be poor in flavour as compared with those grown in an atmosphere securing a thorough solidification of the growths by early ventilation and thorough exposure to solar influences. When the fruit is ripening a circulation of warm rather dry air will tend much to improve the flavour, but do not keep the soil very dry, sufficient moisture being given to prevent the foliage flagging.

Melons sometimes set very badly in frames at this time of the year, which mostly arises from the atmosphere being kept too close and moist. Admit a little air constantly, and avoid watering during the time the setting is wanted—i.e., the flowering, keeping the growths fairly thin, impregnating the blossoms daily after the frame has been ventilated some little time; and when four fruit or so have been secured on a plant remove all the other flowers and keep the laterals well stopped, and if likely to be crowded thin them a little at a time. Close early and damp overhead at the same time, keeping a space of a foot clear from the collar of the plants. Water will not be much wanted at the roots of plants growing on dung bed.

PLANT HOUSES.

Crotons.—Highly coloured plants in 5 and 6-inch pots are indispensable during the winter months for various decorative purposes in dwelling rooms and other positions. In order to have a good stock suitable to maintain an unbroken supply during the sunless months of the year, a good batch of cuttings should be rooted without delay. These plants root with great freedom at this season of the year in a close moist frame in a heated structure if kept well shaded from the sun. For this purpose strong cuttings or the heads of plants should be selected that possess well-developed finely coloured foliage. The cuttings can be rooted without losing a single leaf. The lower foliage should be well coloured before insertion, for it is impossible to colour the old fully developed foliage after the plants are rooted. If rooted in small pots they should be hardened to full sunshine by the time they are ready for the pots named, then be grown close to the glass, and fully exposed afterwards. The plants must not be crowded thickly together, or their symmetry will be destroyed. Large

heads can be inserted into 5-inch pots, and then no farther potting will be needed. Plants in smaller pots, and for grouping with other plants, may be rooted from time to time as cuttings can be obtained. The side shoots will do admirably for this purpose after the heads have been removed. We have always found a large hatch of small plants in 2-inch pots very serviceable for associating with small Ferns. These are the last to be rooted, and for this object sturdy well-coloured side shoots are selected. Growth after they are rooted is prevented, for very rarely growth made in late autumn can be properly coloured, and without Crotons are in this condition they are not the most effective of decorative plants. Growth is prevented by keeping the plants in a sufficiently low temperature to have them in good condition without exciting growth.

Dracenas.—These will now need attention if they are to be in a highly coloured condition for decoration during the winter months. Young plants raised from the root portion of the stem of such varieties as *D. Cooperii*, *D. terminalis* and its white form *alba*, *D. Scottiae*, *D. Renardiae*, and *D. superba*, which are amongst the most suitable for this purpose, should now be placed into 5-inch pots without delay. These will make capital plants before autumn if grown on briskly in moist heat and shaded from direct sunshine. For growing in 7 and 8-inch pots for larger vases, *D. Baptisti*, *D. ferrea*, and *Ernesti* are very suitable, but these should be raised by rooting the heads of plants, so that they will possess large foliage at the base. All plants that have become tall and bare at the base should be ringed and mossed round the stem, and in a short time they will throw out sufficient roots to stand when taken off without losing any of their foliage. These make decidedly the best plants, and every attention should be paid to them. *D. gracilis* is decidedly the best of the green forms, and will stand for three months in a room without injury. Any plants that are growing too tall should be topped and rooted. It is not necessary to moss this variety, for if taken off where the wood is not very firm they will not fail to root. The tops of this variety should not be plunged in a close frame, or the foliage is very liable to damp. They strike best plunged in a shady corner of a warm moist house. *D. rutilans* is also valuable for room decoration, and the tops of any plants that are growing too tall should be taken off and rooted. This variety does well in the greenhouse or a cold frame after they are rooted, and will make sturdier plants than if grown in heat. Young plants still in pans may be potted singly and grown in an intermediate temperature until they are well established in small pots, when they may be gradually hardened and grown cool.

Gloxinias.—These plants are often grown in too much heat, and their flowers are drawn up weakly, with insufficient strength to support themselves. This should not be the case, and will not be if they are grown in an intermediate temperature from the time the flowers are visible amongst the foliage. From a structure of this description they can be removed to the conservatory directly they commence flowering, and will do better and last longer than when grown in heat. Without doubt these are amongst the very best plants that can be grown for the conservatory during the summer if prepared and hardened for the purpose. Late-sown plants now in pans and boxes should be placed at once into 3-inch pots, and if liberally treated will make good flowering plants in those, or even a larger size if desired. Plants that have done flowering should be regularly supplied with water, and occasionally weak liquid manure until the foliage has died. The last remarks also apply to *Achimenes*, and another hatch of cuttings should be inserted in 5 and 6-inch pots to succeed those rooted some time ago.

THE BEE-KEEPER.

SKEPS VERSUS FRAME HIVES.

THEORISTS have put a far greater estimate upon frame hives and some modern appliances than experience can recognise. Interest on the one hand, and enthusiasm on the other, have led to highly coloured statements, causing an eagerness in many to provide themselves with such—which, after much expense, led to disappointment and loss, damping their ardour, and spreading distrust to others; whereas, had the bee-keepers' zeal been less, and their discretion greater, they would have reached the goal sooner, with more satisfaction to themselves and their neighbours. I do not place the straw hive on a par with frame or Stewarton hives; but straw hives have properties that frame hives do not possess. In previous articles I have shown straw hives to be valuable, and unsurpassable for preserving and wintering bees, their crooked combs forming the best nursery for a rapid increase of bees, excelling all others on this point. Where straw hives have been of proper dimensions, rightly managed, and thoroughly protected from the weather, with sufficient entrance, I never knew of stocks being killed through an accumulation of dead bees on the floor. There was then no need for a hooked wire to clear away the dead—that in-

vention was necessary only for defective hives that have traverses between the entrance and combs, low porches, crooked entrances, or frames across the entrance. The latter is a mistake, as was shown in this Journal by Mr. Woodbury long ago, and I also proved it to be one of the direct causes of dysentery. There are many forms of abdominal distension brought on by other causes, but none so fatal as that brought on by draughts or a vitiated atmosphere. The straw hive has, in a great measure, an entire immunity from these calamities. It has at all times a free circulation of air, but without a draught. The former bees cannot do without, and will not thrive without it. A stillness of air in a hive is as prejudicial to bees as a draught can well be. If bees from a straw hive reach the landing board after an airing during the winter or early spring, from the proximity of the combs to the entrances they will in most cases re-enter the hive in safety; but not so where the combs are far from it, and the passage forming a labyrinth. When this is the case many bees get chilled, making the obstruction greater. Porches from 1 to 3 inches high are also most destructive to bees; the roof of these should not be less than 6 or 7 inches high.

The above are not all the advantages straw hives possess over the unwieldy and badly constructed modern frame hives which in many cases are not only expensive but useless for a great number of bee-keepers who depend upon their harvests of honey by moving their bees from one district to another. Single-cased, Stewarton, and straw hives are all well adapted for this purpose, but straw has nothing to recommend it over wood; but for travelling purposes, and the ease by which it can be rendered safe by ventilation, is certainly, to some bee-keepers, of greater value than many frame hives. There are but few things necessary to procure honey—viz., bees, flowers, weather, and a hive commodious enough to hold the stores gathered during the honey season. Bees will not lay up more honey in a frame hive than in a straw one, and, as I have shown, no hive is better for raising bees than a straw one—the wooden ones may be equal. We are told that, by the use of the extractor, frame hives yield more honey; but there has never been any reliable proof adduced as to this, and, unless it is extracted after being sealed, the quality is not so fine as when taken from sealed combs from straw hives.

Frame hives have, doubtless, the advantage over straw hives in their adaptability to receive comb foundation, the preserving of combs for future use after being extracted, for the rearing of queens, and their disposal at times, impracticable in the straw hive. There is, perhaps, an advantage in frame hives in being able to discover with certainty whether it is or is not in possession of a queen; but other properties claimed, such as the combs being interchangeable from one place of the hive, and from one hive to another, serve no good purpose—in fact, the reverse. Combs rarely match each other when made to change places, and foul brood has been often spread through the exchange of combs. The loss of queens from straw hives is so rare that it can scarcely be called a great defect. Though we cannot ascertain the fact by ocular demonstration, a clever bee-keeper can usually tell when a hive is queenless by the action of the bees. It is better that one hive should perish through this defect than many (as has often been the case) by manipulation. More queens have been lost from frame hives when manipulating than ever occurred in straw hives when left alone.

Frame hives furnished with comb foundation give a great advantage over those not so provided; but straw hives, if made cylindrical and provided with bars, are equal to them. But even where this is not the case, the advantage is not all on the one side. Though those furnished with sheets make most progress for a few days at first, I have found that those not so provided made greater progress after a while. Then, as the honey season in this country lasts only from eight to twenty-one days at a time—the latter seldom—this unfixed number and uncertainty of honey days forms a wide gap for discussion on the profit or otherwise of extracting, and the

actual amount of profit, if any, by using foundation in frame hives, or the loss by not using it, in straw hives. In consequence of never having put the thing to a thorough test, I must leave that over until I am able, by actual experiment, to give a table of the results. I know very well that the foundation will give best results; but I am also sure that by taking one year and one season with another, the straw hive without it will not be so far behind as some would have us believe. Some frame-hivists have gone so far as to say that supers could not be obtained from straw hives. A more strange statement could not be made. Supers were taken from straw hives before there were any frame ones. If straw hives are properly made, supering can be carried on equally as well with them as any frame hive, and artificial swarming is more expeditiously performed with straw hives.

I trust the foregoing will be read with profit by those who cling to the old-fashioned hive, and read in the same spirit I have written it by those who condemn straw hives. My object has been to help those bee-keepers to do the best with the old appliances they have, to cheer and show them that the frame hive does not possess all and every advantage towards successful apiculture, but, at the same time, advise all to make a trial of modern hives; and I have no doubt they will, with the knowledge they possess, be able to get on well, if not better than they did with the older ones.—LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Marechal Niel Rose (*J. Mc.D.*).—We are obliged by your letter, which, however, cannot be inserted this week.

Antirrhinums (*J. W., Pershore*).—If you cut off the faded spikes promptly, before seed pods form, and give a soaking of liquid manure, the plants, if fairly strong, will, in all probability, flower well in the autumn. We have often adopted this practice with very satisfactory results.

Vines Scorched (*E. L.*).—Your vinery is no doubt kept too moist and close. Do not damp it very late in the evening, leave the top lights open an inch all night, and give more air as soon as the sun reaches the house in the morning. The box and Grapes were smashed, but from what we could see the Vines are unhealthy.

Chrysanthemums for Exhibition (*Wordsworth*).—There has been delay in the delivery of your letter. Remove promptly all the buds that form in July. Use rain water from the tank, exposing it to the sun previously if convenient; hard water causes the leaves to shrivel prematurely. We will reply more fully next week.

Hyacinth Holders (*J. K. Young*).—Although we had not had an opportunity of actually trying the ingenious appliance it appears the point we mentioned was not unimportant, and you show a way out of the little difficulty. That Hyacinth spikes can be supported with the wires and clips there is not a doubt, but the value of the contrivance can only be fully tested by actual practice, and we advise you to send samples to a few persons who grow Hyacinths largely in beds, and ask them to try the holder next spring.

Yellow Rose not Flowering (*E. W.*).—If yours is the "Old Yellow" Rose all you can do is to encourage healthy growth with liquid manure if necessary, let the shoots be fully exposed to the sun to ripen, and limit the pruning to the removal of the soft unripened tips. As we have many times stated, it is quite impossible for us to undertake to name Roses, as this can only be done by actual comparison with others in a large collection or at an exhibition; besides, the petals had fallen entirely from some of the blooms. We can only say the striped Rose resembles the York-and-Lancaster. We cannot even suggest the names of the others.

Mushrooms Failing (T. W. S., *Springfield*).—Either the spawn or manure is weak, the soil poor and lacking firmness, or the house is too dry and warm. There are very few Mushroom houses in which good crops can be had in the summer. The beds should have the coolest possible position from May till September, and artificial heat is worse than useless when the temperature exceeds 55°. All you can do is to cover the beds with litter, and water this occasionally for percolating to the soil and keeping it cool and moist: the house should also be kept damp and as cool as possible. If the beds are dry, give a good soaking of clear liquid manure, the colour of pale ale, nothing being better than the drainings from manure heaps.

Grapes Scalded (A Lady).—We are very glad to hear that our advice proved useful. Your Vines appear now to be in good condition, but the berries you have sent are what is known as scalded. We suspect the night temperature of the house has been so low as to cause a condensation of moisture on the berries, and the ventilators have been thrown open too widely and too late on some particular morning, and the excessive evaporation with the attendant cold has chilled the fruit and injured the tender skin of the variety. Do not allow the temperature to fall below 65°, do not damp the house late, leave the top ventilators slightly open on fine nights, and admit more air very early in the morning.

Succulent Plant Unhealthy (B. J. B.).—Your succulent plant, *Sempervivum arboreum*, is not suffering by want of more heat, but by defective root-action. It has possibly been kept too wet in the winter and the soil was rendered sour. We should turn it out of the pot, remove a good portion of the old soil, say half to two-thirds of it, and place the plant in a clean well-drained pot, only just large enough to hold the roots conveniently, in fresh turfy loam with a slight addition of lime rubbish and wood ashes—a tenth part or so, and if watered judiciously it will recover. It will be better shaded for a few hours during the middle of the day till fresh growth commences, then it cannot have too much sun. Water must be given whenever the soil appears slightly dry, and only then. Very little water is required by these plants in the winter. Your Rose is perhaps the Red Damask and is very sweet.

Jersey Lilies—Destroying Ants (E. H.).—Jersey Lilies are, we presume, the same as Guernsey Lilies, the botanical name of which is *Nerine sarniensis*. As the ants infest the soil it will be little use trying to trap them, but we should do this, getting a coarse sponge and dipping it in honey or treacle, and then squeeze it almost dry. There will remain after this sufficient of the honey or treacle in the interior of the sponge to attract the ants, which will enter it, and the sponge may be dropped in a vessel containing boiling water. Wash out the sponge, repeat the bait, and persist in this for some little time, and you will get rid of the ants. The baits should be placed near their haunts. A more expeditious method is by the use of Fir tree oil, which may be applied to the soil, and with care is not injurious to the roots, but the instructions given must be carefully carried out. They are printed on each bottle of the insecticide.

Pelargoniums Decaying (J. B.).—Your plants are attacked most seriously with the small centipede, *Julus guttatus*. The decaying stems are crowded with the pest. Such plants cannot recover, and the centipedes inside the stems cannot be destroyed without destroying the plants. We should at once dig them up and burn them, and you will either have to remove the soil a spade deep, spreading a layer of lime before adding fresh soil, or plunge potted plants in the beds for effect this summer, changing the soil in the winter. There is presumably much decayed vegetable matter in the land, and a very heavy dressing of lime would be beneficial. In all probability a small wineglassful of petroleum mixed in a gallon of soapsuds would be of service in extirpating the pest, and would also act as a manure for some kinds of plants and crops. You might try its effects on a few plants, and favour us with the results, increasing the petroleum so far as you find it safe to do so, if the lesser quantity does not destroy the centipedes.

Tuberous Begonias—Florists' Flowers (A. C. R.).—The varieties of Tuberous Begonias now so extensively grown for decorative purposes are as much florists' flowers as Fuchsias, Pelargoniums, or Chrysanthemums are. All flowers are florists' flowers that are raised from seed, and in that way improved by florists whether any particular standard or merit has been determined or not. Primulas, Cinerarias, and Roses are as much florists' flowers as Auriculas, Carnations, and Pinks are, because the origin of the varieties is due to the art of the florist in raising improved forms from seed and establishing them for increase by other methods of propagation. According to the strict reading of the schedule the Tuberous Begonia for which a prize was awarded was not eligible for competition, but as it was staged no doubt in good faith, and as there is a difference of opinion among the members of your committee as to what constitutes a florists' flower, hence no clear definition in the schedule, the fault is quite as much that of the committee as the exhibitor, and we should therefore let the latter retain the prize he won, and advise the committee to make the schedule clearer another year.

Galls on Lime Leaves (Hortus).—The samples sent are what have been popularly called Lime Leaf Nail Galls, attributed to a gall mite named *Phytoptus Tiliæ*, though it is uncertain whether under this name more than one species may not be included. Upon their first appearance these galls are green, then they become yellow, this passes into red, next they are purplish, and finally brown. Their history is interesting, since the Lime was observed to be thus infected more than 150 years ago by the celebrated naturalist Reaumur. He was, however, much puzzled by them, and discovering in some of them a solitary larva, he supposed they were produced by a kind of fly or beetle. If he was right in his observation such larvæ could only have entered in order to prey upon the mites such galls may contain, for they are not attributable to other insects. So small and transparent are these mites that it is difficult to find them, and the plan generally adopted by naturalists is to wash them out with water, and then examine the liquid. On opening one of these galls it mostly appears to be full of hairs of a peculiar growth caused by the punctures of the mites. It cannot be said that the history of these galls is as yet properly elucidated, and it is maintained by some that the mites which they commonly contain are not the real parents of the galls, but "inquilines," or after tenants. Nor can we say how it is, that of two trees, seemingly growing under the same conditions, one will be found swarming with galls, and the other almost as entirely free from them.

Judging Window Plants (G. H., *Chelsea*).—There are no rules of guidance for judging published anywhere to meet such circumstances as those to which you allude. We are of opinion that no one should accept the position as judge who is not practically acquainted with the culture of the plants on which he has to adjudicate, because of the great liability of such a person to err in a decision. Assuming a person is competent he will not have very much difficulty in his work if he acts on the principle that a plant, whatever it may be, must be good in itself and of its kind to be awarded a prize—that is to say, better than others in competition with it. Then, if two plants are equal in appearance, the prize should go to the one that has been most difficult to cultivate. A well-grown plant of *Mignonette* may not be half so imposing as a second or third-rate Sunflower, but the prize should go to the former because of the immeasurably greater attention that must have been exercised in producing it, and so on throughout a show. We have seen injustice done to exhibitors by judges whose utmost desire was to be strictly accurate in their awards, but who lacked the experience requisite to arrive at a correct decision. It is a great mistake to think that it is easy to judge window plants and cottagers' produce. We know from much experience gained at the largest and richest of shows, and the smallest and most humble, that as much discrimination is needed in awarding the prizes at the latter as the former. As a rule it is safe to award the prizes to those plants that give the best evidence of cultural skill on the part of the exhibitor, regardless of the mere size of the "specimens" in competition.

Names of Fruit (*Campus Martius*).—Early Purple Gean; the fruit of the other variety appears to be too small to be of any special value.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (R. H.).—No. 1 is *Pyrus salicifolius*, the others we cannot name without flowers, though No. 3 may possibly be *Shepherdia argentea*. It is not uncommon to find Cork Trees in this country. There is a much finer example in the Bishop of London's garden at Fulham Palace than the one you mention. (J. M.).—You would perceive by our reply we were doubtful as to the name of your Fern. From the better specimen now to hand it is identified as *Polystichum triangulare* var. *laxum*, of which the imperfect scrap sent last week was in no way characteristic. It is only right that fair samples of plants should be supplied for purposes of identification.

COVENT GARDEN MARKET.—JULY 15TH.

LARGE supplies reaching us, with soft fruit well in. The London season being nearly over, hothouse goods are in less demand, and prices lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1/2 sieve	0 0 to 0 0	Lemons	case 15	0 to 21 0
Cherries	1/2 sieve	4 0 10 0	Oranges	100	8 0 12 0
Cobs, Kent ..	per 100 lbs.	0 0 0 0	Peaches	per doz.	1 6 8 0
Currents, Red ..	1/2 sieve	4 0 5 0	Pears, kitchen ..	dozen	0 0 0 0
" Black	1/2 sieve	5 0 5 6	" dessert	dozen	0 0 0 0
Figs	dozen	2 0 4 0	Pine Apples English ..	lb.	2 0 3 0
Gooseberries ..	1/2 sieve	1 6 2 0	Strawberries	lb.	0 3 0 9
Grapes	lb.	1 0 2 6	St. Michael Pines ..	each	3 0 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 2 0
Asparagus ..	bundle	2 0 5 0	Mushrooms ..	punnet	0 6 1 0
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 6
Brussels Sprouts ..	1/2 sieve	0 0 0 0	Paranips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capiscums	100	1 6 2 0	" Kidney	cwt.	4 0 5 8
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers ..	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzoneria	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushtel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 5
Leeks	bunch	0 3 0 4	Turnips	bunch	0 6 0 0



FARMS NEAR LARGE TOWNS.

SPECULATIVE farming, rash ventures with crops hitherto untried upon a large scale, are an outcome of hard times which lands many a man upon the verge of bankruptcy. Among such undertakings the culture of Sugar Beet may be mentioned as having led to serious losses among farmers in the eastern counties. Flax is spoken of as another crop worthy of a trial; but can farmers generally afford to indulge in such attempts? Home farmers have so much land upon

their hands just now that they are bound to give due heed to every hint about profitable crops, but they would do well to be cautious about taking up or applying novel ideas to practice. Upon farms near large centres of population the wish to devote the land to some more profitable purpose than the cultivation of ordinary farm crops is very natural; but even in such an apparently favourable situation no step should be taken till it has been submitted to the common but safe test of supply and demand. A little inquiry will show if farm produce is obtained from a distance from the town; if so, there is a chance for profitable competition by farmers close at hand, and it is by no means uncommon for town supplies to be drawn from a considerable distance. For example, we know a contractor for the supply of fodder for a cavalry barracks who has at the present time to procure hay from a distance of thirty miles. Does not this fact show that farmers near that town cannot be upon the alert to supply a demand which must always exist there? Or it may be that the farm produce which they have to offer is so inferior in quality as to be rejected. This is a point of vital importance. If you would be sought out by large buyers, build up by energy and painstaking a reputation for the produce of your farm. A really first-class article is seldom difficult to sell at a price that is really profitable. As a case in point, take bad and good hay. Haymaking is generally considered to be an uncertain and, in unsettled weather, a difficult operation, yet we never saw a summer in which hay that was wholesome food for cattle could not be made by the exercise of due care. Upon a farm recently taken in hand we found several small ricks of inferior hay, most of it mouldy and devoid of the fragrant aroma which is always present in good hay. The bailiff's excuse was the want of a rick-cloth, ropes, pulleys, and poles. This want was supplied; but we had also to correct much slovenly practice in the haymaking of the present season. Machinery would doubtless answer perfectly well alone for making good hay could we find meadows with a full even surface devoid of hollows. But practically this is never the case, and small hand rakes must be passed over the hay; draw it into wind-rows and hand-forks be used to shake out thick locks, or to bring grass from under trees out into the open. As we write this we have in a thirty-acre meadow a mowing machine, tedder, horse rakes, and men with scythes, forks, large drag rakes, and small hand rakes all in full swing, and all doing an important part in the making of first-class hay, for the crop of grass is a heavy one requiring special care, for the exercise of which it certainly bids fair to repay us.

Turning to other crops, it is probable that a certain proportion of the land devoted to the production of ordinary crops would be a safeguard in most years; nor must it be forgotten that such crops must always have due attention upon home farms. Dairy farming might be enlarged gradually, not only for the sale of milk, but of cream, butter, and cheese, according to the demand, and there need be no fear of overstocking the market with first-class butter and cheese; it is the second and third-rate articles which hang on hand. If cows are kept solely for the production of milk for sale deep milkers must be had, quantity being our primary object; if for cream, butter, or cheese, then we must look to the quality of the milk, and, above all things, have an efficient dairy manager. In turning attention to fruit farming, we are bound to strive for quick returns upon our expenditure. Full crops of fruit are had from Strawberries and Raspberries in the second year under skilful culture. An acre or two of Red Warrington Gooseberry is always a safe investment. For a deep rich soil Black Currants are a profitable crop—perhaps the most profitable of all—and for a poor thin soil Pearson's Prolific Nut is equally commendable. Of fruit trees plant only those of proved excellence, such as Rivers' Early Prolific Plum, Margil Apple, or Williams' Bon Chrétien Pear—sorts to plant by the acre with Strawberries or Gooseberries between them.

A few acres of early or second early Potatoes answer well,

being off the land before there is much risk of loss from disease. Seakale and Asparagus are worthy of a moderate trial, but the general culture of vegetables ought only to be taken up under exceptionally favourable circumstances.

Green fodder crops are very desirable here both for home use and for the prompt sale usually to be had for all of them. Rye, Perennial Rye Grass, Trifolium incarnatum, mixed Grasses and Clovers, such as Cocksfoot, Meadow Foxtail, Timothy, the tall Fescues, with Red and White Clover, Tares, Saintfoin, Trefoil, and Lucern, all afford wholesome nourishing food, of which the surplus quantity ought easily to be sold at about 1s. per square perch. The culture of most of these crops has been explained in detail, and it will again be noticed at the right season. It will suffice now to say generally that for all of them the thorough systematic culture of the soil not only answers best, but is to be regarded as indispensable; and do not forget that a superfluous green crop ploughed into the soil proves an excellent fertiliser.

WORK ON THE HOME FARM.

"Barometer 30.23, rising. Thermometer, 65°. Wind, north. Light. Weather clear. High barometric readings prevail over the whole of Great Britain. The weather will most probably continue fine." Such was the remarkable statement published in a daily paper on July 6th in the midst of the haymaking, and we record it here as a bright and cheering fact, for it is our habit to look at the bright side of things, and although our silo will probably remain empty we shall not grumble at its cost, for it did good service last year, and may do so again. Be it rather our aim to make hay while the sun shines, and we have built several noble ricks, for we altogether object to a lot of small undersized ricks, poor in flavour, and with so much outside. But while the haymaking has been going briskly on some root crops have suffered, especially late-sown Swedes. Mangolds, on the contrary, are flourishing, especially where sown upon ridges with farmyard manure below. No blight or insect will hurt this valuable crop now, nor will it suffer from drought for some time to come, and we may reasonably expect rain in due course to help it on. For Wheat and Barley in bloom in the south the weather is most favourable generally, yet it is to be feared that upon heavy land Barley has suffered. Hop insects are prevalent, and washing of the foliage has to be closely attended to. High culture tells, as usual, in the Hop garden, the growth being especially vigorous and healthy. A large field of Carrots is looking very well just now, and we believe the culture of this useful root to be worthy of extension as a safe source for a supply of winter food for horses and cattle, and especially for dairy cows. Some trial crops of Wheat afford a useful lesson. Champion White has the longest straw and finest ears, Velvet Chaff is next; then come Square Head Red, with fine sturdy straw and the promise of large heavy grain, and last comes Golden Drop, so decidedly inferior in every respect to the others that one wonders what special merit it has to induce the extensive culture of it. For general culture Square Head is probably best, its stout straw enabling it to withstand storms well, the grain being heavy and the yield good. Do farmers who complain that their land produces straw at the expense of grain ever take the trouble to test a few sorts of Wheat to see which answers best? Depend upon it, it is a mistake to take things for granted without a fair trial, and in Wheat-growing now it must be owned that we ought to grow nothing but the best sort for our particular soil. We are free to own that we have been selling straw, for we cannot afford to waste money upon poor Irish cattle, and we cannot procure enough of any other good breed for our purpose. Artificial manure will therefore be used instead for all purposes next season, and we hope to economise both in manual and horse labour.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain	
1885. July.		Barometer at 32 nd and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min	In sun.		On grass.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	5	30.255	68.9	60.4	N.W.	62.4	81.2	59.3	127.4	52.5	
Monday	6	30.267	68.4	59.8	W.	63.8	81.8	58.0	122.7	49.2	
Tuesday	7	30.193	65.9	58.4	W.	64.7	77.6	54.2	122.1	49.7	
Wednesday ..	8	30.096	61.7	57.6	S.W.	64.4	72.7	57.2	104.4	53.5	
Thursday	9	30.215	63.1	55.8	N.E.	62.5	75.9	47.6	115.4	40.7	
Friday	10	30.190	65.7	58.5	S.E.	63.3	82.5	52.6	119.3	45.3	
Saturday	11	30.096	70.2	61.4	S.E.	63.8	82.0	57.9	127.8	45.1	
		30.188	66.3	58.8		63.6	79.1	54.9	119.9	48.0	
										0.297	

REMARKS.

5th.—Very fine summer day.
6th.—Fine and hot.
7th.—Fine and bright, but cloudy in late afternoon.
8th.—Showers early, cloudy morning, fair afternoon.
9th.—Fine and bright.
10th.—Hazy and oppressive morning; fine afternoon.
11th.—Bright and hot, with pleasant air. Lightning at midnight, and sharp rain early on Sunday morning.
A thoroughly fine week of warm summer weather.—G. J. SYMONS.



COMING EVENTS

23	TH	
24	F	
25	S	Darlington (Roses).
26	SUN	EIGHTH SUNDAY AFTER TRINITY.
27	M	Ludlow.
28	TU	[Picotee Show.
29	W	Royal Horticultural Society—Committees at 11 A.M.; Carnation and

WAITING FOR RAIN.

IN this part of the country we have long waited anxiously for rain, but up till to-day, July 16th, nothing but disappointment has resulted, and we have decided to go to work on the supposition that the dry and very hot weather will not yet be broken. As far as the flower garden is concerned it does not matter much, as the brightest of all summer plants—viz., Zonal Pelargoniums, seem to revel in the weather we are experiencing, and other kinds are doing fairly well. It is in the kitchen garden where the mischief is being worked, notably among small fruits generally, Potatoes, and winter vegetables. The two former must take their chance, but not the latter, as if Potatoes are to be small, or what is more likely to happen, be of bad quality owing to the formation of a second crop directly we get a soaking rain, there will be all the more need for us to strive to have green winter vegetables in greater abundance. But if we wait too long for rain the plants will be spoilt in the seed beds and a good part of the growing season lost. Undoubtedly when we do get a "soaker" the plants, owing to the warmth of the ground, will grow as if they were in a hotbed, too strongly perhaps, but while we are waiting for this change in the weather the seedlings are fast becoming wretched objects, and certainly not calculated to grow into those sturdy plants that we think so desirable for standing a severe frost.

Many sow the principal portion of the seed of Broccolis, Kales, and Savoys in March or early in April, and these, in numerous cases, are yet in the seed beds. We were designedly later than usual in sowing all but Brussels Sprouts, autumn Cauliflowers, and Veitch's Autumn Broccoli, the first week in May being the time when Broccolis, including Snow's, Veitch's Broccoli and Cauliflowers (second sowings), midseason and late Broccoli, all sorts of Savoys, including Gilbert's Universal, Chou de Burghley, and Kales were sown. These have become rather large and crowded, and are now being put out as fast as we can plant them; and although it most probably will entail much extra labour in keeping them growing as it did in getting the ground ready for them, I prefer this to spoiling the plants, as many are doing, in the seed beds.

In some places we are following Peas without digging the ground, in others Potatoes; but the worst quarters, as far as the working of the ground is concerned, are those necessarily summer-dug. In each case drills were drawn with heavy hoes, all hard clods, and they were very hard, being broken down, and then a soaking of water was given, this admitting of deep planting with dibbles. The seed beds were also soaked with water, and as then it was still impossible to preserve many roots or soil about them, a puddle was formed and all had their roots well coated with the muddy moisture, with the results of the plants being less liable to completely collapse. It is useless to put out plants in very hot weather unless the soil is made very firm and moist about the roots, planting with the trowel being as a consequence less safe than is the

case when a dibble is used. The majority of our newly put out plants certainly look unsatisfactory, but they will soon recover, and when a soaking rain comes they will be quite ready to profit by it.

In many gardens very little space can be afforded the seed beds, and the seedlings, instead of being about 12 inches or 14 inches high when planted out, are nearly double that height. If I had such unpromising plants to deal with they would not be planted with either trowel, dibble, or crow-bar, but the spade would be the implement preferred. To bury the stems deeply in order to materially reduce the length exposed above ground would not do, in cold soils especially, and the plants would not make satisfactory progress, but if sloping trenches were cut with the spade, the plants laid in and firmly covered so as to completely cover the stems only, they would soon right themselves. Thus treated they, as I have proved several times, will succeed surprisingly well, especially if a little good manure is distributed in the trenches, the roots soon taking hold of this, and a good start is made. This plan is to be commended for late-planted Broccoli especially, and I have known a breadth of plants thus treated be the only survivors after a severe frost, and though comparatively small produced very good heads. Late sowing and late planting on a high and rather exposed position will insure a late supply of Broccoli, and that, too, with varieties not generally considered late.

Chou de Burghley I hold to be of little value when sown and planted very early, as in this case they become much too large and blanched to be either hardy or acceptable in the kitchen. Sown early in May and planted out about 18 inches apart in the rows, and about 2 feet from row to row, they will yield a good cutting in midwinter; at least, this is as far as my experience will go, as we have yet to prove that it will stand an extra severe frost. We have just planted a good breadth of it, and also the Universal Savoy, and trust the latter will develop all the good qualities it is said to possess.

—W. IGGULDEN.

HYBRID POTENTILLAS.

AMONG really good hardy summer-flowering perennials there are few, if any, calculated to produce a more lengthened display of flowers than the single and double forms of these Potentillas. They in consequence deservedly hold a position second to none among hardy florists' flowers—are, in fact, one of the most beautiful, interesting, and valuable groups of perennials. Whether required for the mixed border, the rockery, or in beds by themselves, they in all cases make a most effective display with their diversely coloured flowers. These are abundantly produced from the middle of June to the middle of August, the colours ranging from rich velvety and brilliant crimson to maroon, scarlet, together with rich orange and golden and canary yellow. Then we have many pleasing and varying shades, and sometimes the flowers are distinctly spotted, margined, or marbled. Particularly effective are the yellow selfs and which are almost unique in their way at this time, for yellow flowers are not particularly abundant when these are giving their flowers in plenty.

In common with several other fine groups of summer flowers, Potentillas have been much improved in form and size of flowers during recent years, improvements, too, which in a great measure owe their origin to the enterprising florists across the Channel. The substance of the flowers generally is much superior to the original single forms, which, together with the increased number of petals, makes the flowers, either on or off the plants, much more durable; but it will be well to remark that they are not really good in a cut state, while as decorative border plants they are among the best.

The soil which suits them best is a deep rich loam, the deeper the better—that is, if large handsome flowers are expected. Nearly all ordinary soils which are fairly rich will grow them well, but to bring them to perfection there is nothing like a rich and deep loam. Therefore the ground

should be well trenched (indeed this is not lost on any crop), and heavily manured, and with good plants the individual blooms should be as large as a crown piece; this is not an extraordinary size, however, as I have had them in quantity of similar size in somewhat stony ground, but which had been well manured previously.

The *Potentillas* are quite hardy—no frost will harm them in the least, and when out of flower they are not unlike the *Strawberry* in their silver tufts of leaves. From amongst the leaves issue the numerous flower stems, which usually attain a height of 2 feet, rather below than above, and consequently are of a serviceable size, and being of compact habit there is no trouble experienced in this direction. One point in favour of them is their adaptability for towns or smoky districts, and for this purpose these plants, and also German *Irises*, are very useful; in fact, I know none better suited than these two groups, and being so readily increased (the *Irises* especially so), it is surprising they do not find a home in many of our public parks and gardens. While the *Potentillas* are not so readily increased by division as many hardy plants, they have the good qualities of being free seeders, so that a stock may soon be raised in this way, all of which may be sufficiently good for the shrubbery border if they do not attain perfection from a florist's point of view. Seeds sown in early spring produce plants that will, if placed out in beds when sufficiently large to handle, make good strong flowering plants for next year. The other modes of propagating them is by division, and also by means of cuttings. The latter will be best carried out in the following manner: At the present time the growths from large plants will be numerous, and as it will not be prudent to lift the plants now they are coming into flower, the only alternative is to remove the soil from around the collar of the plant, so as to bare the upper portion of the somewhat woody rootstock, and then strip off with a heel attached as many as may be deemed prudent, so as not to sacrifice too many flowers. Insert these in sandy soil, without further preparation, in a somewhat shady position, and cover with a handlight; in about three weeks the majority will have formed roots. I have, it may be well to remark, a strong dislike to the knife in propagating many hardy plants, for many failures are traceable to this alone, and in many instances which have come under my notice the portions which would have emitted roots freest and earliest have been cut off, and so it is with *Potentillas*. *Phloxes*, *Pentstemons*, *Sunflowers*, and similar plants having softwooded stems, root most readily from soft, sappy cuttings.

It may not be unreasonable to assume that if the progress among these plants continue, that they will ere long be as double as are many *Persian Ranunculus* at the present time, not that being so would make them any more beautiful than now—rather the reverse, since that portion of the flower which can easily be seen and admired now would be hidden from view. I will briefly enumerate some of the most distinct varieties, and will take the singles first. Of these there is none more striking, more profuse, or beautiful than *P. formosa*, which produces in the wildest profusion its bright cherry-red blossoms, a most telling plant in the rock garden. Others are *Hopwoodiana*, *Smoutti*, and *Russelliana*, with various other forms. The best doubles and semi-doubles will be found among the following: *California*, *Chromatella*, and *Vase d'Or* are yellow selfs, and all very fine. *Aurantiaca* is a good orange; *Dr. André*, golden yellow suffused with vermilion; *Hamlet*, very dark crimson, very fine; *Louis Van Houtte*, deep crimson, this is best dark variety; *Velours Pourpré*, deep blood crimson, very large; *Duc de Nassau*, chestnut red, suffused with yellow; *Cameleon*, scarlet striped purple and yellow; *Versicolor fl.-pl.*, a very pleasing flaked variety; *Madame Rouillard*, soft velvety scarlet, shaded and edged with amber; *Le Dante*, yellow suffused with red, fine shape; *William Rollisson*, mahogany suffused with orange, very free; *Victor Lemoine*, bright vermilion, striped yellow.

To these varieties many more may be added equally good and attractive, and all deserving of culture; at present they

are evidently very little known, or they would be more frequently seen in gardens, for they will rank among the most popular of hardy decorative plants.—J. H. E.

OVERCROPPING.

How much fruit a tree can bear without injury is still in many respects an unsettled question. That there is a limit to a tree's endurance none can doubt, yet few can state definitely where the line can be drawn. Some trees constitutionally strong can bear heavier crops than those with a weaker constitution, other things being equal, but it has been frequently observed that stunted trees assume a more fruitful habit than their healthier neighbours. If these were allowed to perfect their fruit the evil of overcropping would soon be apparent in failing health and premature decay, but the cases are rare, owing to climatal and other influences in which overcropping alone has killed a tree.

If we study overcropping we find that the nature of the tree causes it to put forth all its energies in fruit-bearing, and as the crop is heavy or light, so the tree is weakened more or less. Now if there is no suitable nourishment applied to the tree to recruit its weakened strength it is certain that its vitality will be impaired, and the result will be inferior fruit in lessened quantities. If instead of this neglect the tree had been sustained according to its requirements it would have continued as fruitful as before. Our imperfect knowledge of the vegetable kingdom will not allow us to go so far as this, but a judicious method of cultivation will attain satisfactory results.

Partial failures in Grape-growing are more frequently attributed to this cause than any other, and with a certain degree of truth, but in many cases the Vine is overcropped simply because it is underfed. It is no exceptional case in which Vine borders are made with the greatest care, and Vines are planted where for a time they give satisfaction. But in the course of years unfinished berries and cases of shanking are the rule, and after the border has been examined to see whether the drainage is right, the cause is put down to overcropping. This induces a thorough overhaul, fresh soil is added to the border, and in the course of two years the Vines have improved wonderfully. Now this may have been the best way to act under the circumstances, but it could have been avoided by judicious nourishment in the first place. The fact that the Vines did improve showed plainly that weakness was the cause of their unsatisfactory condition.

Perhaps the Peach tree illustrates this reasoning more clearly than any other. Examine one carrying a full crop but imperfectly sustained, and it will be seen that in endeavouring to fulfil its mission the leaves turn a yellowish hue, and many of the fruits ripen prematurely, while the buds show poor prospects for another season. Turn to another carrying an equal crop but properly nourished; there the leaves have a deep green colour and the fruit ripens perfectly, the buds giving promise of a favourable crop next year. Overcropping is not to be judged so much by the quantity of fruit on a tree as by the assistance given to perfect that crop. In all cases it is the same. Whatever elements a plant extracts from the ground must be supplied again, or it will deteriorate in value, and in the constituents necessary for the proper sustenance of plant life.—J. MACDONALD.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 3.)

It has been shown that the *Chrysanthemum* had rapidly risen in the estimation of the public, and was fast taking its place as a popular favourite in England. The next thing that will occur to the mind of the inquiring reader will be to know what progress it was making in France, to a countryman of which its first introduction was due.

A twelvemonth after Mons. Blanchard's importation it was cultivated in the *Jardin des Plantes*, where, notwithstanding what may be stated to the contrary, it received almost as little attention as the *Chelsea* variety did in this country in 1764, and nearly shared a similar fate. Thirty-six years after the old purple reached the shores of France, the only French author who has interested himself sufficiently in this plant as to write a distinct treatise on it asserts that there were but a very limited number known (according to Mr. Salter only fifteen kinds in 1822), and these of no particular merit either in form or colour, the best being of a dull lilac colour or of a doubtful yellow.

Few French florists at that period troubled themselves about its culture, and we may therefore assume that to us English people belongs the credit of first appreciating the value of the *Chrysanthemum*.

mum as an autumn flower, and of making it take so prominent a position in the early days of its history.

This disdainful treatment by the French, however, was not entirely universal, for a Mons. Noisette, who visited this country in 1824, was presented with the twenty-seven varieties from the garden of the Horticultural Society, and a list of them was attempted to be given in the "Bon Jardinier" for 1825. Another, a distinguished lover of horticulture, who, having thrown down the sword for the spade and water-can, had grown the Chrysanthemum for some few years prior to that date. This gentleman, the now celebrated Captain Bernet, whose residence was situated in the south of France, speaking of his collection in 1826 tells us it comprised only three varieties. To his pen we are indebted for a very interesting account of his success in raising the Chrysanthemum from seed, and as he was without doubt the first man in Europe to do so his story will probably be read with some little interest.

The author is not aware that it has ever yet appeared in English, and it was called forth by the fact of Mons. Rouillard having in a report read by him before the Société Nationale d'Horticulture de la Seine stated that the climate of France would not allow of the Chrysanthemum producing fertile seed, which is sufficiently disproved by the large number of new sorts distributed by the French raisers during the past ten or fifteen years, and that to overcome this obstacle several of the French florists had been compelled to have recourse to growers in Spain and Italy. But, says Captain Bernet, "I assert that at all times this plant has borne seed in the south of France," and referring to his collection in the autumn of 1826 he observes that when his plants were going out of bloom they were the object of his sole anxiety, although he felt convinced that he would get some good seed from them.

"What, then," exclaims the gallant Captain, "was my joy, mingled, I acknowledge, with no little surprise, when in taking hold of one of their withered heads I found myself the happy possessor of several seeds bearing all the signs of perfect maturity and undoubted fertility. My good fortune was kept entirely to myself, but my most assiduous and attentive care was given not only to the seed-bearing plants, but to the seeds themselves, which in the spring of 1827 I carefully sowed with a success quite equal to my expectations, as a result of which I was rewarded with the raising of several fine varieties."

Encouraged by his first success, which attached him more and more to his favourite plants, he saw his collection annually increase by the addition of new kinds of the greatest merit.

Three years after this event an experienced nurseryman got possession of an entire set of the Captain's new Chrysanthemums, and propagated them for sale. Thus it was from 1830 to 1836 that his novelties were circulated and forwarded to the plant dealers in Paris and abroad.

There is scarcely any need to continue Captain Bernet's narration beyond observing that it concludes with the statement that after this he adopted the practice of sending to his nephew in Paris seeds and plants, and through him entered into arrangements with Mr. Salter at Versailles, and later on with such well-known florists as Mons. Pelée and Mons. Mieliez. At the end Captain Bernet adds a list of those varieties which he obtained during the first two years of his devotion to his favourite pastime, which is reprinted here more as a matter of curiosity than as being of any use at the present time:—Rose Croix, Duc d'Albuféra, Annibal, Maréchal Maison, Reine Blanche, Duc de Dantzick, Casimir Périer, Marechal de Créqui, Charlotte Corday, J. J. Rousseau, Georges Sands, Le Grand Napoleon, Baronne de Stael, Princesse Pauline, Duc de Trevisé, Général Foy, Buffon, Madame de Pompadour, Pygmalion, Bossuet, Socrate, Maréchal Lannes, Fléchier, Général Lamarque, Phenix, Salamandre, Chateaubriand.

During the course of his success nothing appears to have caused so great an annoyance as to find that there were even in those days unscrupulous people who resorted to the practice of changing the names of some of his greatest favourites. His nephew says that there were even some of his seedlings which, instead of the names attached by him out of various precious considerations, had had English names substituted.

This was mainly done for the purpose of enhancing their value from a commercial point of view. It is a practice that cannot be too strongly condemned, and has been denounced on more than one occasion by indignant growers, who have found themselves duped when too late to escape from the evil.

As the subject of double-named or synonymous Chrysanthemums has been touched upon, it will perhaps be handy for the amateur grower to be made acquainted with those he is most likely to meet with at the present. The following is based on the list published by Mr. N. Davis of Camberwell, with a few additions from the National Chrysanthemum Society's catalogue and other sources:—

PROPER NAME.	SYNONYM.
Albert de Naurois	Albert.
Angelina	President Sanderson.

PROPER NAME.	SYNONYM.
Argena	Inner Temple.
Beethoven	St. Patrick.
Boule d'Argent	Silver Ball.
Christine (White)	Mrs. Forsyth.
Comte de Morny	Purple Pompon.
Delphine Caboche	Miquillon.
Dr. Rozas	Dr. Rogers, Dr. Rossa.
Elaine	Mrs. Marsham.
Elise	Eliza.
Emperor of China	Webb's Queen.
Flamme de Punch	Punch.
Fleur de Marie	George Hock and Mr. Cole.
Gloire de France	La France.
Golden Empress of India	Bruce Findlay.
Golden Circle	Golden St. Thais.
Golden Eagle	Orange Perfection.
Golden George Glenney	Mrs. Dixon.
"	Mrs. C. H. Glover.
Golden Mille. Marthe	Miss Onbridge.
Golden Queen of England	Emily Dale.
Jeanne Delaux	F. A. Davis.
John Salter	Mr. Howe.
La Frisure	Early Rose Queen.
L'Africaine	George Gordon.
Le Chinois	Chiuaman.
L'Or du Rhin	Golden Rhin.
La Bienvenue	J. Hillier.
Little Bob	Scarlet Gem.
"	Dr. Duval.
Mabel Ward	Bendigo.
Mlle. Augustine Gauthent	Augustine.
Madame Bertier Rendatler	Curiosity.
Madame Castex Desgrange	Maize.
M. Devaille	E. C. Jukes.
Mottled Beverley	Rotundiflorum.
Mrs. Huffington	Alderley.
Mrs. Sharpe	Incognito.
Miss Marchaux	Thurza.
Miss Mary Morgan	Pink Perfection.
Marguerite de Coi	Defiance.
Nanum	Siston.
Oliver Comwell	Mr. Evans.
Princess Imperial	Lord Alcester.
" of Teck	Christmas Number and Princess Mary.
" of Wales	Beauty of St. John's Wood and Princess Alexandra.
President Decaisne	Mr. Murray and President.
Queen of England	Blush Queen of England.
"	Striped Queen of England.
St. Mary	Souvenir d'un Ami.
Source Japonaise	R. Ballantine.
Souvenir d'Amsterdam	Amsterdam.
Soleil Levant	L'Infante d'Espagne.
Striatum	Album Striatum.
St. Crouts	Saddington.
"	Pollion.
Tricolor	Mr. J. Starling.
White Queen of England	Snowball, Mrs. Cunningham, Empress of India, Lady St. Clair.

By way of conclusion to this chapter it may be remarked that the French Chrysanthemum growers are still very proud of the achievements of "the father of the Chrysanthemum" as he is called, and there still remain many of his varieties in commerce among the collections of their nurserymen and amateurs, probably more on his account than for their own value and beauty as flowers.

To the English they are mostly, if not entirely, unknown, and there are none now left in any of the trade catalogues issued in this country. Those still surviving in France of Captain Bernet's, which are taken from the catalogue of a florist who claims to be the grandson of Captain Bernet's old gardener are Cardinal de Polignac, Genius, Mammoth, Princesse Marie Amelie, Reine Bacchanal, General Pajol, Brissot, Emile Lebois, Gloire de Toulouse, Duc de Broglie, Temple de Salomon, Arc en Ciel, Anaïs, Sixte Quint, Bernetianum, Figaro, and Grand Napoleon—the only one out of his first set that seems to be left.

Continuing the story of the early endeavours in France to improve the Chrysanthemum by raising seedlings, it has been somewhat vainly asserted that had it not been for Mons. Bernet's zeal in that direction, and in spite of the rapid progress that was made in contemporary horticulture, the Chrysanthemum would in all probability have remained in its primitive state. To this opinion the objection naturally arises, that whatever the French might have thought and done independently of Mons. Bernet's efforts, it is certain that the Chrysanthemum had caused so great a stir in England that the numerous importations and sports would sooner or later have caused the florists of this country to consider and devise a means by which seedlings could be raised.

With what might or might not have been it is not the author's intention to deal. Accomplished facts, or rather the most important of them in the history of this plant, is all that can be touched upon in the narrow compass of a treatise like this.

The great success attending the labours of Mons. Bernet naturally excited the curiosity and stimulated others to vie with him in the raising of new varieties of this charming flower. Mons. Regnier of Avignon sent out a pretty variety under the name of Madame Hardy and several others of merit. A like success also crowned the efforts of several amateurs of Montauban, whose names are now forgotten. The learned Professor Lecoq of Clermont also cultivated it in his part of the country, but being unable to obtain any new varieties from seed as he lived in a more unfavourable climate he gave up growing. Mons. Regnier, too, discontinued its cultivation, and so for a time Mons. Bernet was left alone the indefatigable sower and raiser of the Chrysanthemum in France.

Mons. Boisgraud and Mons. Rantonet, however, soon followed in the way that Captain Bernet was pursuing, and both raised some good kinds, while later on Mons. Bonamy, a raiser noted principally for his Pompons, was a successful grower.

Captain Bernet now began to exchange his seedlings with Mr. Salter and Mons. Pelée, and at the same time recognising in his nephew the late Mons. Lebois the zeal and enthusiasm of a Chrysanthemum grower, he regularly sent him half of his crop of seeds, thereby creating a rival whose successes, instead of exciting jealousy on his part, only tended to bind their relationship more tightly together.

Mons. Lebois, whose name was better known among us thirty or forty years ago, made considerable improvements in the Chrysanthemum, besides sending out a large number of Pompons and summer-flowering varieties. He relates that his first attempt far exceeded his expectations, for he obtained a charming flower which he named after a fashionable opera in that day—Giselle.

The second year's proceedings resulted in an utter failure; but, persevering in the same path, he had the pleasure of raising several new sorts in the third year, which were much appreciated and valued.

—C. HARMAN PAYNE.

(To be continued.)

THE SPLITTING OF FRUIT.

QUITE as much progress is being made in the discussion of this important subject as could reasonably be expected, considering the wide divergence of opinion that apparently existed on it a few weeks ago. In reviewing what has been said I shall endeavour to do so calmly, temperately, and seriously, as I think there has been enough of mere "retorting" for the present. It is encouraging, too, to feel that the discussion will not be a barren one, but will have a practical and almost certainly a beneficial effect, inasmuch as it will cause greater attention than heretofore to be directed to the question of ventilation and atmospheric moisture in structures devoted to the cultivation of fruit.

It not unfrequently happens in the course of a debate that those engaging in it are tempted to press their views a little too far, and before a settlement is arrived at there is a slight mutual yielding all round. I am quite willing to modify any statement I have made if it is not justified by an appeal to scientific authority or ascertained facts. This is in response to the admissions on the "other side," and, from my point of view, in the right direction. Stubbornness is not strength. The most unyielding have often to give way at last, or as Mr. Iggulden suggests about the "endosmotic theory," they get laughed at in their isolation. He can smile the smile of incredulity, but he cannot in that happy manner drive a law of Nature out of the universe, and the scoffed-at "theory" I shall have to show is a great fact. My intrepid assailant has already shown signs of yielding, as I will point out, and I am convinced that, protest as he may, he will have yet to admit that moisture does pass through the skins of fruit by the action of endosmose to a greater extent than he appears to have any idea of. I shall not try to convert him, but shall show how he may test the matter for himself, and if he dare not make a simple experiment for fear the results should tell against him he will not be in a position to hope that anything he may say against Dutrochet's great discovery can have any material weight.

I have said there has been a modification of views on the subject of fruit cracking. On page 264 Mr. Thomson controverted Mr. McIndoe's opinion on 225 as to moisture passing through the skins of fruit, and expressed what he termed the common sense view of the matter, that the excess of moisture was conveyed by the roots and girdling was the remedy. On page 329 he attributed the cracking of Mr. McIndoe's fruit at Manchester to expansion by heat. After my citation from Dutrochet on page 371 he gave evidence of his receptive mind by, on page 402, "quite admitting the action of both endosmose and exosmose when circumstances favour such action." That is quite sufficient. The principle is admitted, the precise circumstances being merely debatable. It is true on page 478 he "had" me on immersing Ferns, which I will refer to, but even then could not disclaim the endosmotic influence.

I now turn to Mr. Hugh Henderson, who in his letter (page 526 of last vol.) has not only proved himself a man of metal, but has taken up a far stronger position against the "endosmotic theory" than any other of my respected opponents. I will come to that in due course; at present I wish to report his progress. On page 422 he made the slight mistake of objecting to my giving the "whole" credit, or discredit, to the skins of the berries admitting moisture; and then suggested that Mr. McIndoe's Grapes cracked at Manchester by the moisture passing from

the air through the stems; but that will never do, because the Grapes at home on the Vines had at least ten times more moisture supplied by the roots and remained sound. There was not the faintest admission of the action of endosmose; and in his letter on page 478, in which he asks me some pertinent questions, he quite ignores its influence, whereas in his last and strongest letter against me, on the page quoted, he fully admits the existence of the principle. I say, then, we are progressing.

Next we have to note Mr. Iggulden's yielding. In his first great rush at myself, Dutrochet, and the doctors, on page 455, as if he would bear all down before him, he exclaimed "Candidly, are there 'any' practical men" who will believe a dictum that he manifestly regarded as absurd? yet after he "heard from me" (478) he rejoined by what he calls "again" asking (page 498) if there are "many" believers in the theory. From *any* to *many* is a great jump down, and as soon as he has made it he falls among the frogs in *Æsop's* fables. Then he goes on to "defy" (nothing if not strong) either myself or Mr. McIndoe to "crack berries in a well ventilated house by syringing them." Mark the condition, a "well ventilated house," which means, if it means anything, that they might split in an ill-ventilated structure if syringed excessively. That is an instance that occurs now and then of negative evidence being as powerful as positive. In my young days, long before the Duke was born, and the Grizzly Frontignan was grown much better than it is now, a standing injunction was not to syringe the "Grizzly" or it would split; and it would, and it will if syringed when it is ripening, as I well know, not from scientific reasoning alone, but from actual experience, no matter how dry the roots may be kept. Having regard, then, to both positive and negative evidence, I think I am justified in saying we are making as much progress as can be expected on the not-yet-fully-understood "endosmotic theory," that, old as it is, appears to have taken some persons by surprise.

Some arguments, assertions, and observations remain to be noticed. Mr. Henderson, on page 422, reminded us that cut flowers and fruits received supplies of moisture through their stems when inserted in water and implied, as Mr. Iggulden has done, that moisture can only pass through the "ordinary channels" except in very "minute" or "infinitesimal" quantity. It was in answer to that (page 458) that the immersion of Fern fronds, with the stalks in the air, was adduced in evidence to the contrary. This enabled both Mr. Thomson and Mr. Henderson to score a point against me on page 478—namely, that no moisture can escape by evaporation from immersed leaves, and hence they remain fresh even with their stalks in the air. That is a good argument as far as it goes, and I must say the replies were not unexpected. Now then let them gather some flowers, Pansies for instance, let the petals flag considerably, then immerse the flowers; also let them pluck sprays from, say a Rose tree, let the buds droop and the leaves become quite flaccid, then immerse similarly, leaving the stalks above water, and they will find flowers, buds, and leaves regain their freshness, which can only be by actual absorption and not very "minute," either in the case of much-withered leaves of Roses. This is mentioned as a point of interest that has arisen by the way. But to the fruit. I have never tried sealing the end of a lateral bearing a bunch of Grapes and immersing these, but Frontignans placed in water for a short time, then in a damp box kept close in a warm house, have split most decidedly, the temperature of the water and the house being 80° more or less; so have some varieties of Plums, Cherries, Melons with the stalks removed, Gooseberries, and Figs.

The mere degree of temperature is not very material in setting up the action of endosmose; it is a question of the quantity of moisture acting on and passing through the skins of fruit, causing a distension that they cannot bear, hence the emphasis that Mr. Iggulden places on the importance of judicious ventilation and a buoyant atmosphere. We are at one on that point, and I think on some others, but it will not do for him to yield too much at once. Of the counter action of exosmose I will speak when considering Mr. Henderson's last letter.

An opinion seems to prevail that the splitting of fruit is the result of an expansion of their juices by heat. Mr. Thomson suggested this as the possible cause of Mr. McIndoe's Grapes splitting in the Manchester tent, as described on page 304, but he takes care to remind us on page 402 that it was only a suggestion, not an expression of his belief. Mr. Iggulden is a younger and bolder man, hence does not hesitate to assert on page 498 that the expansion of their fluids by heat is "really the 'true cause' of fruits cracking," and asks why I persistently ignore this. I have ignored it because not an atom of evidence has been adduced to support it; and when he says "dry heat does not unduly expand the juices," he places himself in a very peculiar position, and if he fully comprehended the action of heat on fluids not another word would be required to prove the fallacy of the expansion theory, but as a want of adequate information is clearly displayed on the subject, and as he has appealed to me, I will respond in a few lines.

I know that fluids expand, and the degree of their expansion under specified degrees of heat, and, let me add, of cold or declining temperature, and I have reason to believe that the force of distension of the fluids in fruit by the action of endosmose is enormously greater than the pressure resulting from the expansion of the same fluids by heat. It is true that fluids expand by heat, but so does the surrounding air, which is an all-important element in the case. It is a popular fallacy to suppose that water only expands under a rising temperature, with the exception of just at the freezing point, when it expands by crystallisation. Water is at its greatest density at a temperature of 42° Fahr., and it expands quite as much, and continues expanding, as the temperature falls below the standard of density, as it does in the progressive increase of heat above; and to show how weak the "expansion theory" is as applied to the

subject under discussion, it is only necessary to record the significant fact that the expansive force is greater at a temperature of 22° than it is at 62°, and it is less at 52° than it is at 32°. On this matter your correspondent appears to have committed himself to a proposition without due reflection, and I have a very strong conviction that his dictum is absolutely unsupportable.

Another difficulty with many persons is their inability to account for one variety of Grape splitting while others grown under the same conditions remain sound. This was first mentioned by Mr. Thomson on page 402, and it has been alluded to by others. Mr. Kirk (page 434), in adducing strong testimony of the efficacy of the gimlet in preventing the Duke cracking over a period of eight years in a house where a number of other varieties need no such assistance, asks, "What about limiting the moisture in the atmosphere?" Having regard to the condition of the other Grapes, I am not prepared to say that Mr. Kirk did not do what was right under the circumstances, but that is not the question. The question is, Is the Duke of Buccleuch, the Frontignans, Muscadines, and Madresfield Court able to endure as much atmospheric moisture as Black Hamburgs and others without sustaining injury? According to my experience and observation, which together are not inconsiderable, the question must be answered in the negative; and, in my opinion, the difference between the moisture-resisting nature of varieties is due simply to the differing texture of their skins. Why does one variety of Plum or Cherry crack while other varieties near and at the same stage remain sound? The injury can scarcely be attributed to the expansion of the fluids by heat, because this must act equally on all; there is the same moisture in the soil for the roots of all to imbibe, and cracking is no worse in moist than in drier soils, but the skins differ, and the action of endosmose is much quicker through thin than through stout membranes; in fact it is influenced both by the membrane and the nature of the fluids. This anyone may test for himself. Take a thin glass tube, tie a piece of animal or vegetable membrane closely round the end, say a piece of bladder or the skin of a Grape, place thick syrup or brine in the tube, put it in water, and the action of endosmose will be seen by the fluid in the glass rising, the thinner passing through the membrane to the denser. If anyone accustomed to perform delicate chemical experiments should have the means of using, as a membranous covering to the tube, the skins of different kinds and varieties of fruit, he will possibly solve the problem of some fruits splitting while others remain sound. On page 478 Mr. McIndoe gave an interesting example of the fruit of a Governor Wood Cherry cracking through early closing the house with too much moisture; and he asked "If the splitting was not caused by endosmose, then what caused it?" No one has answered him.

I fully intended answering Mr. Henderson's last and very interesting letter, but I have had such a wide field to traverse that I cannot presume to encroach on further space now. All the references apply to pages in the last volume.—A THINKER.

[The publication of this article has been unavoidably delayed.]

ROSE A. K. WILLIAMS.

I HAVE been greatly disappointed in this Rose this season. Few Roses have been offered to the public with such strong recommendations as to general excellency. Every Rose-grower in the country was anxious to possess it. If one wrote to a nurseryman about being supplied with Roses, the strongest reply he could make was that A. K. Williams would be included, and here it is before it has been out more than a year or two turning out inferior everywhere. Some say it is not an A. K. Williams year. I do not believe in this, and hold that a Rose which has been so strongly recommended to us should not fail before it has established its reputation. If it had failed to come up to the standard in the hands of a cottager, amateur, or even a professional gardener, the fault might have been that of inferior cultivation; but when such as Messrs. Paul, Cant, and others show blooms of all sorts and sizes, with hardly a good one amongst them, at such a show as the National, a mistake in culture cannot be raised in its favour.

Having noted its inferior appearance at some provincial shows early in July I was determined to take particular notice of it at the National Show at South Kensington on July 7th, and I was as much disappointed with it as ever. The majority were small and badly formed; indeed, I only saw two good blooms in the whole Show, and they were in the stands of Messrs. Cooling of Bath and Jefferies of Cirencester. I saw one good bloom from Mr. Griffith, Hereford, in his stand at Newport the other day, and out of the scores I have seen shown this season these three blooms were the only ones I could say were really up to a first-class prizewinning type. Those who buy it should, I think, have it as a Rose of ordinary merit, and not as a unique variety in its class, or amongst Roses generally.—J. MUIR, *Margam*.

WESTERN AUSTRALIA:

CORRESPONDENTS are so frequently desiring information respecting suitable fields for emigrants that the following letter from a gentleman holding a high position in Perth, Western Australia, will be of especial interest to many readers. The manual referred to we shall be pleased to forward to anyone sending their name and address, with a stamp for postage:—

"Perth, Western Australia, 5th June, 1885.

"I send you some copies of Mr. Forrest's manual of information about our colony, which I hope will prove of interest to you. The map will show you the vast extent of our territory, the manual the thermometrical range.

"It is positively heartrending to us colonists to see the accounts of labour, skilled and unskilled, running to waste in the mother country. The penny breakfasts furnished to dock labourers are a sad contrast to the abundance in which those dock labourers would revel here could they only be deported hither. The only classes who could not succeed here are the maimed, the halt, the blind, and the dishonest.

"Almost all the Irish peasants who were transported hither for agrarian outrages are now "well-to-do" peasants, and it is a pity that honest English families should not have the same chance."

We may add that the manual gives a map of Western Australia, with full particulars concerning its climate, products, land regulation, railways, and Government, with some interesting statistics for 1884, relating to the prices of provisions, the wages of artisans, with the imports and exports.

THE BLUE PEA (*LATHYRUS SATIVUS*).

Our sketch represents one of the prettiest and most distinct of all the annual Peas of ornamental character. It is an old plant in gardens, and



Fig. 10.—The Blue Pea (*Lathyrus sativus*).

yet we find many of our visitors have never seen it, although it is universally admired by all who chance to see it covered with its clear blue blossoms. Its culture is of the easiest. Seeds sown in drills or clumps in March flower in July, and continue in bloom until late in the autumn. All the attention required after sowing is to stake each clump with a few brushy twigs about 2 feet in height. As shown in the engraving (fig. 10) the 3 to 4-seeded pods are curiously winged along the back. This species has long been grown in S. Europe as a forage plant, but its beauty ought to guarantee it a welcome in all good flower gardens.—F. W. B.

INJURY TO FOLIAGE OF GROS COLMAN GRAPE.

MANY gardeners have been at a loss to understand the reason why the foliage of Gros Colman Grape should become curled and disfigured early in the season. I am not in a position to state whether it has this tendency in the north of England or in Scotland, but in the south it is an acknowledged fact. About Worthing Grapes are grown very largely for market, probably more so than in any other district in England, and whilst there a short time since I paid a visit to Mr. R. Piper's Grape-growing establishment, where Gros Colman is grown very extensively in different houses and aspects, and it is only on one aspect that the foliage of this noble Grape is not affected—viz., on the north side of a span-roof running east and west with broadsides north and south. The length of the house is 350 feet, and width 20 feet. Only two varieties of Grapes are cultivated in the house, which are Gros Colman

on the north side, and Alicante on the south side. On this aspect the Vines receive abundance of light without strong sunshine. Those gardeners who may have a span-roof to plant situated like the above, and who intend planting any Gros Colman, should take the above hint, for the Grape cannot be of such good quality when the foliage has a withered appearance.—A. YOUNG.

ROYAL HORTICULTURAL SOCIETY.

JULY 14TH.

SCIENTIFIC COMMITTEE.—Mr. A. Grote in the chair.

Fungoid Diseases in Fruit Trees.—A communication was received through Sir J. D. Hooker from Mr. T. Kirk, Wellington, New Zealand, asking for advice as to remedial measures. In some districts the fruit trees are being destroyed by the mycelium of a ground fungus—a small Puffball, though the author suspects that several Agarics affect them. When the ravages are most serious the reproductive state is but rarely developed. It first appears as a circular patch, in which all vegetation (as in fruit trees, Oaks, Walnuts, Grass, Sorrel, Strawberry, &c.), is more or less "blighted," the plants exhibiting a withered appearance, the leaves becoming slightly curled, droop and fall long before their time, and the plant dies. The roots are more or less covered with mycelium. The effects extend in a most singular fashion, travelling half way across a garden or orchard from one side only, at others extending in all directions. It is most fatal to fruit trees. It is almost exclusively confined to light soils, on which Fern (*Pteris aquilina*) has grown. Damp or dry soils have no attractions for it. It occurs abundantly in the decaying rhizomes of the Fern, transferring its attentions to fruit trees whenever the opportunity is afforded. The first parts on which the affection shows itself is the juncture of root and stem. The bark becomes absolutely rotten when permeated by the mycelium, and emits a nauseous odour. Plum trees usually show but little mycelium as compared with Apples, but the trunk is more obviously affected, and exudes gum freely. Experiments are being carried out in the following directions:—1, Soaking the soil with tar water and dressing the affected parts with the same. 2, Dressing the soil with soot. 3, With sulphur. 4, With mild brine washes, both for trees and soil. So far the tar water seemed the most effective, but the author was inclined to think that sulphur will have the most permanent effect.

Peach Blight.—The author adds, that in all parts of the country the Peach is dying wholesale, but the cause is most obscure. The trees appear to flower with their accustomed luxuriance, and the fruit to set as usual. If a sudden change of temperature or a severe frost has been experienced during the flowering time, the fruit does not swell, the leaves make their appearance readily and fall quickly—minute orange-coloured blotches are seen on the twigs. These become confluent and black, and then the buds decay. At this stage the plant may die, or if the season prove favourable, a weak autumn growth may be made, and new leaves developed, tassel-like, at the tips of the branches; but a renewed attack the following spring proves fatal, and the plant dies. Plants one year from the seed are attacked as readily as the oldest. Occasionally a tree partially sheltered has suffered less than its neighbour, or has escaped entirely; while two kinds appear to resist the disease more than others—viz., Cornet and Salway, but they are certainly not blight-proof by any means. In the absence of material the members of the Scientific Committee did not feel competent to pass an opinion on the subject.

Poppies. vars.—Mr. Smee exhibited seedling Poppies of *P. Rhæas* with wedge-shaped black patches and white borders at the base; they had originated from the common form.

Amorphophallus (Hydrosme).—Mr. Ridley exhibited a seedling he had raised from a fruit from Gambier.

Abies polita.—Dr. Masters exhibited a spray of this new Japanese Conifer with cones; it was received from Mr. Veitch.

Elms Diseased.—Dr. Masters mentioned the fact of an avenue of Elms fifteen years old, in Guernsey, of which some thirty or forty were rapidly dying. Diseased branches were referred to Mr. Murray for examination and report.

Plants Exhibited.—Mr. Lynch brought from the Botanic Gardens, Cambridge, a fine flowering spike of *Yucca angustifolia*; the anthers appeared to be abortive, and it never set seed. A spray of *Pelargonium Endlicherianum*, from Australia; *Jasminum angulare* var. *glabratum*, a plant new to cultivation, from the Cape; *Nelumbium luteum*, from North America. Dr. Masters exhibited an umbel of *Euryanrium* (*Ferula*) *Sumbul*, remarkable for the acrid and musk-scented juice.

Clover, Virescent.—Mr. Houston exhibited specimens of a not uncommon form, in which the ovules were particularly well developed as leaves.

Potentilla reptans with Uni- to Septem-foliate Leaves.—The Rev. G. Henslow exhibited specimens of Cinquefoil, showing transitoral states from one-foliate leaves, through ternate and quinque-foliate to seven-foliate forms.

Ox-eye Daisy.—Mr. Smith sent specimens in which the ray-florets were tubular, like those of *Centaurea*, and not ligulate, as usual.

Pheasants Poisoned by Fungi.—The following communications were received from Mr. W. G. Smith:—"A week or two ago Mr. Henry Mills, of The Gardens, Enys, Penryn, Cornwall, sent me an example of a fungus which had poisoned pheasants: the gamekeeper had cut open the pheasant's crop, and found pieces of the fungi in them. The birds swell, and are soon dead. On asking Mr. Mills to secure other specimens of the fungi he could not find them, but, strange to say, the pheasants, with superior eyes for such things, found them easily, for other birds died, and pieces were again found in their crops. It is remarkable that sheep and lambs have died suddenly in the same field, as well as in an adjoining field. Whether the sheep have died from the effects of the fungi is uncertain, but sheep will, no doubt, sometimes eat fungi. I have seen sheep eat Mushrooms. I hope to be able to name the species of *Agaricus* with certainty at the next meeting of the Scientific Committee, as I have just received fresh and better material. I am, however, able to point out the series to which it belongs. It is one of the *Hyporhodii*, or pink spored Agarics, a series limited in Britain to a comparatively small number of species. The Agaric is a small one, about

1 inch in diameter, with characteristic nodular spores. It is probably an *Entoloma*, close to *A. placenta*, *A. helodes*, and *A. repandus*. A close ally of these—viz. *A. sinuatus*, once put me to considerable inconvenience and annoyance."

Resting-spores of *Peronospora pygmaea*.—"A correspondent, Mr. George Brebner, of Aberdeen, has sent me a large supply of the oospores of this *Peronospora* detected by him in leaves of *Anemone nemorosa*. He has also forwarded the accompanying drawing and a microscopic slide showing the oospores *in situ*. In the slide the oospores can be distinctly seen attached to the same mycelial threads as the conidiophores. Mr. Brebner states that Professor Trail has recently lighted on the oospores of *Peronospora arborescens* in the leaves of *Papaver Argemone*. It is a mistake to suppose that oospores of *Peronospora* are rare; they are easily found by competent observers; and when seen on the same threads as the conidiophores—as by me in *Peronospora infestans*, and by Mr. Brebner in *P. pygmaea*—no unprejudiced person can doubt their true nature."

DRUMMOND'S TURF-CUTTING MACHINE.

I HAVE seen the remarks you make in your issue of the 9th July about the turf-cutting machine invented by Mr. F. T. Drummond. As I am, I think, one of the few gentlemen who have seen the machine work, I write to give my testimony to the admirable way in which the machine takes up the turf. It cuts the turf very cleanly both as to length and width and thickness. The last piece of turf that I saw removed by the machine was quite full of Elm tree roots, in spite of which the machine made capital work, and removed in a few hours what it would have taken several men all day to get up. I feel sure the machine has only to be seen to be thoroughly appreciated.—EDW. M. WAKEMAN.

ABOUT THE SURFACE OF SHRUBBERIES.

QUITE lately I had to wait an hour or two in one of our large cities before I could get out of it by train to my destination, and to pass that most weary period of time which I describe under the term waiting I made my way to the well-kept gardens and parks of which its citizens are proud. No expense for labour seemed to be spared. The lawns were in good condition, the shrubs kept neatly pruned to shape, while that greatest of eyesores to a gardener, weeds, were entirely absent. I do not know whether it would be most correct to describe the whole affair as trim or prim. Some people would undoubtedly call it trim, though I must confess the latter term better denotes the effect it had on my mind. This effect was mainly, I may say entirely, produced by the shrubberies. Each shrub was trimmed into shape, and each stood by itself with plenty of space for a few years' free growth in beds, the soil of which was kept hoed and raked. What a difference could be effected at an outlay of a shilling or two and a walk round these shrubberies. With the money a supply of seed of Wallflowers, Foxgloves, Canterbury Bells, Sweet Williams, Poppies, Columbines, and Cornflowers would be procured, and during the walk the supply so bought would be judiciously sprinkled over the vacant ground. Nature would do the rest.

On my way home from the station I passed a little place the whole of which, house, garden, lawns, &c., might have been set down in one of the shrubberies above alluded to. I imagine it would have been impossible to have found as much bare ground in the whole place which one's hand might not easily have covered, and the result is that perhaps as many flowers are grown in the little garden as in the huge public garden, and certainly a greater amount of enjoyment to be extracted from it.

Unfortunately the large gardens are typical of what is to be found in private gardens, and perhaps in small gardens the offence to good taste is the more glaring. It is no uncommon thing to find artificially raised shrubberies in small places, with the shrubs trimmed and a large space of kept ground either bare or covered with weeds throughout the better part of the summer months. The same in a modified degree applies to large places, as in these the shrubs are larger and the weeds do not show so much in the surroundings. But in any case the whole method of shrubbery gardening is wrong. Weeds are an outcome of the attempt to keep shrubberies trim and neat, and that by a process which is almost always a failure. Bare ground in any portion of a garden shows something that should not be, more especially in all kinds of decorative gardening, of which shrubbery gardening ought to be one of the higher forms.

There are three simple methods of keeping shrubberies neat and attractive, the easiest being to cover the ground with grass and keep it cut short during the summer months. This does not entail so much labour as would at first sight appear. The same space of ground can be as rapidly mown with a scythe as hoed, in some cases more rapidly. Where an American mower is kept the labour is greatly lessened, as the matter of three or four runs over the grass during the growing season keeps it in good order. Another method is to plant certain suitable flowers on the grass and among the shrubs. Peonies; wild, Damask, and

other Roses; Foxgloves, Delphiniums, Asters, and many others are very suitable for dotting about in the grass in any open portions. This of course renders the maintenance more expensive. Then the third method is to fill all bare portions as far as possible with flowers. The best plan here is to employ only those that do well under hard conditions of existence. Besides plants already named, Primroses, Polyanthus, Anemones, Doronicums, and many others will do well.

Where shrubs are large and sufficient space is left between each to allow for their development there is nothing like a carpet of grass to cover the ground. Primroses, Hyacinths, Daffodils, Tulips, hardy Ferns, Irises, &c., are all capital for dotting about; the Primroses indeed may be left to carpet the ground themselves. Snowdrops are also very pretty among large shrubs.

Those who may be afraid of much extra work resulting from such methods need not be alarmed on that account. The labour, in fact, is less than in keeping a bare shrubbery clean of weeds in summer and pointed or dug in summer; and at any rate the results are greatly superior, and that in the end is the chief matter.—SYLVANUS.

NOTES AT MANCHESTER.

A SHORT time since I had occasion to visit Manchester, and the selection of an agreeable route became a matter of some importance, for a journey of about 200 miles is rendered much more pleasurable if the scenery be varied and beautiful. I have travelled to Cottonopolis by several routes, but this time I was induced by the representations of friends to try the Midland line, and with great satisfaction to myself. Until Derby is reached there is nothing of a special character to attract attention. The scenery is of the ordinary quiet English rural character, but a few miles beyond that town a tract of land is entered which for sublimity and beauty cannot be surpassed in any part of England. The Peak district of Derbyshire is a famed resort for tourists, and very deservedly has it gained its reputation, for such a diversity of aspect and such an invigorating atmosphere can scarcely be found in Britain without travelling to "bonnie" Scotland. An hour's run through this district presents a charming panorama of lofty hills and deep dales, with numerous small rivers rushing over steep and rocky courses, the land on the higher parts having the peculiar moorland appearance and in others densely clothed with small trees and undergrowth. Through precipitous cuttings, along high embankments, and through numerous tunnels the traveller is rapidly hurried, and he carries with him into the great smoky city of the north a vivid remembrance of a most enjoyable journey.

The time at my disposal did not permit my seeing all that is horticulturally interesting in Manchester, but I was enabled to visit several establishments of some note, the first being the Fern Nursery at Sale. There Messrs. Birkenhead have gradually formed a wonderful collection of the choicest and most beautiful members of the Fern world, and if there are any who do not admire these graceful plants, which is scarcely possible, they would have their opinions greatly altered by inspecting the multitudes of lovely plants at Sale. I have heard people remark that there is a great sameness about Ferns, but this erroneous notion would soon be dispelled by either of the brothers Birkenhead, whose pride in their collection resembles the enthusiasm of amateurs. There is, in fact, an astonishing diversity amongst Ferns, from the delicate gauze-like and diminutive Filmy Hymenophyllums or the hair-like Trichomanes to the giant Dicksonias and Cibotiums, with their expansive shade-affording fronds, there is every gradation. In Palms we have some of the most elegant plants of the vegetable kingdom, but the Ferns surpass all in their winning gracefulness. Fit companions indeed are they for the wonderful and brightly coloured Orchids, and it is not surprising that so many admirers of one family are equal admirers of the other. I enjoyed my visit to the Sale Nursery greatly, and though I should like to point out some of the beautiful Ferns which are there grown, even a moderate selection would occupy considerable space, and would unduly extend my notes. I can only therefore recommend all horticulturists who have an hour or two to spare in Manchester to make their way to the nursery and see for themselves the results of many years' untiring labour.

The headquarters of Manchester horticulture is certainly the Old Trafford Botanic Gardens, for there Mr. Bruce Findlay has succeeded in establishing an annual exhibition which many provincial societies have tried in vain to equal. The Whit-week Show is in its way unsurpassed throughout the kingdom, and both horticulturally and financially has proved for many years all that its most ardent well-wishers could desire. For this alone the Botanic Gardens would deserve a prominent position in British horticulture, as during the long period that these shows have been held very much must have been done to increase the love of horticulture in the district, and the substantial prizes offered have furnished many cultivators with well-merited rewards for their skill. There has also been a steady advance in the collection of plants, and the improvement becomes more noticeable every year. Not only is the number of rarities increased, but their condition is also greatly improved—an item of much importance, for however extensive a collection may be it is never satisfactory if unhealthy plants predominate; still it is not always easy to keep a large mixed collection in good condition, and success is the more praiseworthy.

Another establishment at which I spent a pleasant hour was Pickering Lodge, Timperley, the residence of G. Hardy, Esq., and where an exten-

sive collection of Orchids is grown. The one remarkable feature for some time past has been the plants of *Odontoglossum vexillarium*, which may fairly be considered as amongst the finest in the kingdom. This was well shown by the magnificent group at Kensington recently, and it is doubtful if so handsome a group has ever been staged there before, certainly there was nothing to equal it in merit at the Orchid Conference or the subsequent Orchid Show. Mr. Hardy treats his plants exceedingly well, and they respond to this by making a vigorous growth and flowering profusely, as *O. vexillarium* will do when in proper condition. Another interesting feature at Pickering Lodge is the rock fernery, which has been constructed within the past few years, and which is now becoming well clothed with plants. This is tasteful in design, much varied, and presenting several pretty views, the effect of which is considerably increased by mirrors judiciously placed.

At Brockhurst and Woodlawn, Didsbury, may be seen two remarkable collections of hardy plants, while at the latter place the specimen plants, including Orchids, are becoming noted for their success at the local exhibitions. Ford Bank, also at Didsbury, the seat of Thomas Ashton, Esq., I found well worthy of a visit, for the gardens are very ably superintended by the experienced gardener, Mr. Bailey, and are most commendable for their neatness in every department. Grapes, Peaches, Melons, Cucumbers, Tomatoes, and all ordinary decorative plants are well grown, while outside, the kitchen garden produce and fruit trees are excellent. Ford Bank is, however, pre-eminently noteworthy for its fine collection of Rhododendrons, which is scarcely surpassed by any private collection in the kingdom, either in number of varieties or the luxuriance of the plants. When in flower the numerous beds have a grand appearance, and at the time of my visit there were many in this condition. Hardy plants receive much attention, and several borders are devoted to old and new favourites.

Several other visits were projected, but the time at my disposal lapsed too soon, and I had to reserve several for another occasion.—A VISITOR.

A MISTAKE IN SUMMER PEA CULTURE.

THE recent dry weather has been testing the Peas. Heat will bring out their characters as quickly as anything, and it also tests the best modes of culture, and soon shows the result. On light shallow soil the straw soon becomes yellow, the pods wrinkled, and the peas hard and dry. We recently saw some rows which were in this condition, and the owner could not understand the reason. Plenty of manure had been forked into the surface before the seed was sown, and it was thought they would luxuriate in this, but they did not when the dry weather came. It was then they could not be understood, but in asking about the sowing the matter soon became clear. The drills when opened for the reception of the seed were not deeper than 3 inches; consequently all the most important roots were very near the surface, and although the manure was there it was dried up when the warm weather came, and the result was almost a failure of what might have been a fine crop. In another garden I could not help saying, "What very fine Peas!" "Yes," said their owner, "that is the advantage of deep digging and deep sowing. The ground was trenched 20 inches deep, and the seed was put down 9 inches from the surface." This made the mistake in the other place quite intelligible, and I resolved to practise deep digging and deep sowing for summer Peas. It was a treat to see the deep-sown ones, and the roots being well down from the influence of any drought were growing and fruiting in the most luxuriant manner possible.—A KITCHEN GARDENER.



IN Messrs. J. Veitch & Sons' nursery at Chelsea there is now a handsome display of CARNATIONS AND PICOTEES fully equal to the best they have had on previous occasions. Thirty beds, each 30 feet long and 4 feet wide, are devoted to the plants, of which there are eighty in each bed. All the best varieties are represented, and some very promising novelties are included, respecting which we shall have something to say on another occasion. During the approaching week the plants will be at their best, and no one interested in these useful and beautiful flowers should miss the opportunity of seeing them.

— PREMIER ROSE BLOOMS.—At the Exhibition of the Moreton-in-Marsh Horticultural Society (affiliated with the National Rose Society) on Wednesday, July 15th, the silver medal of the latter, given as an additional prize for the best stand of Roses, as well as the bronze medal for the best Hybrid Perpetual bloom, was awarded to Mr. W. J. Grant, Ledbury; the bronze medal for the best Tea or Noisette bloom being awarded to Mr. Julius Sladden, Evesham. The bloom selected by the Judges for this distinction in the H.P. class was a splendid specimen of *La Duchesse de Morny*, and that in the Tea or Noisette, *Souvenir d'Elise Vardon*.

— ON a sloping bank near the lake facing the Palm house in the Royal Gardens, Kew, an extensive beautiful bed of *SPIRÆA PALMATA* has been highly attractive for the past week or two, and shows to excellent advantage the good qualities of this *Spiræa* as a bedding plant for massing. The border is 30 feet long and about 6 feet wide in the centre, the shape being a long ellipse, and this is densely filled with plants which are bearing an astonishing number of panicles of bright rose-coloured flowers much darker than they are usually seen. At Kew and many other places in the south of England this *Spiræa* is quite hardy, though it is so frequently grown under glass for early flowering that its value for outside beds is not generally recognised.

— UPON each side of this border a circular bed of *IRIS KEMPFERI*, which is rarely seen in such fine condition; the plants are very vigorous, and the flowers like large *Clematis* blooms 6 to 8 inches in diameter, and of various rich shades of purple and crimson. The secret of success with this *Iris* is planting it where the roots can revel in constant moisture, for the beds named are only a few inches above the water level, and the roots have penetrated into the saturated soil, where they are evidently at home. This hint has been followed up in several establishments, notably at Cambridge, with equal success.

— THE ESSEX FIELD CLUB will hold a field meeting at Witham, Black Notley, and Terling, on Saturday, July 25th, 1885, under the following programme:—The party from London will travel from Liverpool Street station by the 9.3 A.M. train to Witham. Arrive at Witham about 10.15 A.M. Members from other parts of the county will please consult local time-tables and arrange to be at Witham at the hour above stated. An ordinary meeting of the Club (the sixtieth) will be held after luncheon at the "Spread Eagle," Witham, solely for the purpose of proposing and electing new members.

— AN Exhibition will be held by the SCARBOROUGH FLORAL AND HORTICULTURAL SOCIETY in the lawn tennis ground attached to St. Nicholas House, Scarborough, on August 5th and 6th of the present year. Cut flowers, including Carnations, Picotees, and Roses, are specially provided for, but classes are also devoted to plants, fruit, and vegetables.

— THE balance sheet of the YORK GALA AND HORTICULTURAL EXHIBITION in June last has been already issued, and Mr. John Wilson, the active Secretary, and the Committee are to be complimented on their promptitude in getting this done, and showing a substantial balance on the right side. The receipts at the gates amounted to £1398, and with income from other sources the income of the Society for the year was £1794 18s. 7d. The chief items of expenditure are £535 for prizes, &c., £263 for tents, £100 for fireworks, £78 for music, £221 for various amounts, the total expenditure for the year amounting to £1577 15s., leaving a balance in hand on this year's Exhibition of £217 3s. 7d., a goodly portion of which will be handed over to the York charities. From a horticultural point of view also the Exhibition was most successful, holding its own as one of our greatest exhibitions in the country.

— WE are requested to state that in the report sent us of the HEREFORD AND WEST OF ENGLAND ROSE SHOW the following meaning was intended in the paragraph referring to new Roses. "This useful and interesting class was not shown as the public ought to see it, several blooms of the same variety being incomparably better shown in the different collections."

— THE WILTS HORTICULTURAL SOCIETY will hold an important exhibition of plants, flowers, fruit, and vegetables in the Bishop's Palace Grounds, Salisbury, August 20th, this year. Good prizes are provided in all the most important of the sixty-seven classes, especially for plants and fruits. To specimen plants two open classes are devoted, in each of which three prizes are offered—viz., £15, £7, and £4; £13, £6, and £3, the former three for flowering plants, and the latter for foliage. In other classes confined to gentlemen's gardeners, the prizes range from £3 to 10s.

— IN reference to the INDIAN AND COLONIAL EXHIBITION of 1886, we have received the following letter from the Secretary, Major F. Mason—"I am desired by the Council of the Royal Horticultural Society to ask you to allow them to make known, through the medium of your columns, that they are prepared at the request of and in concert with the Royal Commissioners of the Indian and Colonial Exhibition of 1886, to offer their co-operation and assistance to such of the colonies as may desire to avail themselves of it. Some of the colonies

have already expressed a desire to have as a feature of their courts illustrations of the indigenous flora in vestibules or plant houses. In addition to these the Council believe that collections of ornamental and economic plants in a growing state and of fruits would be of much interest and value. The Royal Horticultural Society will be ready to give advice and practical assistance in preparing, arranging, and carrying out such illustrations to any of the colonies who may apply to them. But they desire to point out that it is essential for even a very limited display of growing plants that not a day should be lost. I shall be glad to answer any inquiries. The Assistant Secretary and the Superintendent of the Society's gardens will be ready to meet and consult with the colonial Commissioners, and to take forthwith the necessary steps in conjunction with them."

— THE SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY, announce that their first Exhibition will be held in the Corn Exchange on Friday and Saturday, November 13th and 14th of the present year. Eighteen classes are enumerated, and the prizes are substantial in the majority, £5 being offered as the first prize in three classes, with second and third prizes of £2 and £1 each. In other classes they range from £3 to 5s. The Society is under the presidentship of Mark Firth, Esq., and a good working Committee has been formed with Mr. A. K. Woodcock as Secretary.

— Mr. R. I. LYNCH, Cambridge Botanic Gardens, writes:—"The plant figured at page 41 of last week's issue *Journal of Horticulture*, is not *Oncidium vexillarium*, nor is it the one for which my notes were written. It is, I believe, a fine variety of *ONCIDIUM CRISPUM*, but I give this name with reserve, as it was not verified when the plant was in flower. The specimen illustrated came from the Cambridge Botanic Garden, and the spike of which it formed a part was several weeks in beauty. It attracted a considerable amount of attention during the time. The flowers are handsome because of the colour and scolloping of the sepals and petals and lip. The colour is chiefly deep rich brown, indicated by the dark shades of the illustration, and all the parts are margined with yellow, as shown by the light shading. *O. crispum* is a native of the Organ mountains."

— THE schedule of the second annual EXHIBITION OF THE HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY is just to hand, and enumerates forty-four classes, in some of which extremely liberal prizes are offered. The principal class is for forty-eight blooms, twenty-four incurved, not less than eighteen varieties, and the same number of Japanese, in which a silver challenge vase, value fifteen guineas, is offered by the Chairman, George Bohn, Esq., with the first prize of £10. This makes a very handsome prize, the vase going to the employer and the money to the gardener, but the conditions require that the vase should be won twice consecutively, or three times to render it the property of the exhibitor. The second, third, and fourth prizes in this class are respectively £8, £5, and £2, and the Hull Society may therefore claim to have provided the most important class, as regards the value of the prizes, of any society. Another good class for twenty-four blooms, twelve incurved and twelve Japanese, nine varieties of each, is also provided, the prizes being £5, £3, and £1 10s. A silver challenge cup, value five guineas, is also offered for amateurs in local classes, several special prizes being offered by friends of the Society. With such a liberal schedule the Committee have done all that is possible to insure a most satisfactory show.

HORTICULTURAL SHOWS.

MONMOUTH COUNTY SHOW.

THE eleventh annual Show of the Newport and County Horticultural Society was held at Newport on July 16th. The position selected for the Exhibition was Friars Park, Cardiff Road, and it formed a picturesque site. The exhibits were arranged in several large tents and had a very charming effect. On the whole they were above the average in quality of those generally seen at county shows, and Messrs. Lewis & Dixon of the London and Provincial Bank, who jointly perform the duties of Hon. Secretaries in an admirable manner, as well as the working members of the Committee, deserve to be congratulated on the way they have elevated the Society. Several new and important exhibitors came out very creditably on the 16th, but we missed the excellent specimens of one well-known Newport man, Mr. Wattie, gardener to T. Cordes, Esq., of Bryn Glas. Last year, and on many previous occasions, this gentleman surpassed the finest specimens Mr. Cypher of Cheltenham could bring down, and it is a great loss of credit to the neighbourhood that such splendid plants should have been withdrawn from public exhibition.

Plants.—In the class for eight stove and greenhouse specimens in flower Mr. Cypher was an easy first, showing superb examples of *Ixora Williamsii*, *Erica Parmentieriana*, *Allamanda Hendersoni*, *Anthurium Schertzerianum*,

Allamanda nobilis, *Erica Shannonii*, and *Ixora Fraseri*. The second place was taken by Mr. Jones, of Maindee, near Newport, with an extra good specimen of *Clerodendron Balfourianum* amongst other well-grown plants. Mrs. W. S. Cartwright was third with smaller plants. The next class was for six ornamental-leaved plants, and Mr. Cypher took the lead with finely grown specimens of *Cycas revoluta*, *Croton majesticus*, *Latania borbonica*, *Kentia Belmoriana*, *Pritchardia pacifica*, and *Dasyllirion acrotrichum*. Mr. E. J. Grice was a good second, the *Crotons* being particularly well coloured, and Mrs. Cartwright was third. Messrs. J. W. Jones, G. Fothergill, and W. Graham were the winners for six distinct *Achimenes* with fine panfuls. Exotic Ferns were not extra large, but healthy, the prizes for six going to Messrs. T. Wallis, T. E. Watson, and Mrs. Cartwright. Hardy Ferns were clean and healthy, and well shown by Messrs. E. Fowler and H. J. Davis. *Selaginellas* were particularly fine; indeed we never saw them finer, most of them being shown in pans or tubs from 2 feet to 2½ feet across. Mr. W. Graham was placed first with excellent plants of *S. Martensii albo-variegata*, *S. atroviridis*, *S. Kraussiana variegata*, and *S. densa*. Mr. C. T. Wallis and Mr. H. J. Davis followed very closely. Orchids were not numerous, but very good. For six plants in flower Mr. E. Fowler was first with fine varieties of *Cattleya Mendeli*, *C. Gaskelliana*, *Odontoglossum Alexandræ*, *O. vexillarium*, *Cattleya Leopoldi*, and *Cypripedium barbatum*. Mr. T. E. Watson was second. *Caladiums* were large, but not highly coloured. The *Coleus* were very attractive. Zonal *Pelargoniums* were exceedingly attractive. Mr. Cypher had it all his own way in Heaths, his plants being remarkably fresh and beautifully bloomed. The first-prize Cockscombs from Mrs. Steeds, Penarth, were finely grown and excellent in colour. The second-prize plants from Mr. Ingram, Penarth, were dwarfer, but not so fine otherwise. *Petunias* were very showy, and Tuberous *Begonias* were exceedingly fine. Mr. H. Dixon easily secured the first prize in a strong class with dwarf healthy plants bearing many blossoms of unusual size. Mr. W. Powell was second, and Mr. Watson third. In the amateur class for the best arrangement of plants Mr. A. J. Woodcock was first and Mr. J. Pickford second. The last-named gentleman was placed first, as his plants were the finest, but on the arrangement question being reconsidered the cards were changed; but it must be noted that both were highly creditable to the cultivators. *Gloxinias* were rather small and some past their best.

Cut Flowers.—The Roses were the main feature amongst these, and very fine they were. For twenty-four distinct sorts Mr. G. T. Griffiths, Hereford, was first; Mr. W. J. Grant, Ledbury, second; and Mr. Crossling, Penarth, third. The first was decidedly the largest, a bloom of A. K. Williams being one of the finest we have seen this season. The second blooms were fresh and compact, but small generally. The third blooms were even, but rather too far open. In Tea Roses, eighteen distinct, Mr. Grant was a good first; Mr. T. Hobbs, Bristol, second; and Mr. Moore third. The special prizes for twelve H.P.'s offered by Messrs. Cranston, Hereford, brought out a strong competition, and Mr. Grant, Mr. Hobbs, and Mr. Moore won well. *Dahlias* vera scarce, but good—one good stand of *Carnations* and a poor collection of *Picotees*. The boxes containing twelve bunches of cut blooms were very attractive, Mr. E. Fowler being first with a grand collection containing many Orchids; Mr. Watson taking second place, and Mr. Crossling third. Hand bouquets were rather heavy, but the flowers arranged in glasses were well done, Mr. Cypher being first, Mr. Jones second, and Mr. Watson third. Wild flowers were scarce and not well put up. Herbaceous flowers were excellent.

Fruit.—For a collection Mr. Coomber, gardener to J. A. Rolls, Esq., M.P., Hendre Park, Monmouth, was an easy first with finely finished Black and Golden Hamburgs, Pine Apple Nectarine, President Strawberry, Scarlet Invincible Melon, and Barrington Peach. Mr. Hawkins, gardener to Col. Turberville, Ewenny Priory, was second with fruit of excellent quality. In black Grapes Mr. Coomber was first with superb finished Black Hamburgs, and Mr. Moore second with the same variety, large in berry, but slightly deficient in colour. In white Grapes Mr. Hawkins was first with good Muscat of Alexandria, and Mr. G. Fothergill second with Foster's Seedling. Peaches were very fine from Mr. Coomber and Mr. Graham, and the same competitors secured the prizes for Nectarines. Strawberries were not very good. Melons were few, and Gooseberries not quite ripe.

Vegetables were of fine quality and abundant. Mr. Moore, Mrs. Cartwright, Mr. Hawkins, Mr. Fothergill, Mr. H. J. Davis, Mr. Graham, and Mr. Watson being the principal prizetakers. The cottagers' tent was well filled with some capital *Fuchsias* and *Pelargoniums* and many grand collections of vegetables.

Messrs. Carter & Co., London; Sutton & Sons, Reading; Francis & Arthur Dickson, Chester; Laing & Co., Forest Hill; James Dickson & Sons, Chester; J. C. Wheeler & Son, Gloucester; Richard Smith & Co., Worcester; Daniels Bros., Norwich; Garaway, Bristol; and Dick, Clarence Nursery, Newport, offered numerous special and valuable prizes, which were evidently much appreciated, as they produced a strong competition in their respective classes.

WINCHESTER.—JULY 16TH.

The largest, richest, and most extensive exhibition of garden products ever held in Winchester was the display briefly to be noticed. Years ago fine shows were held in the old city, but they dwindled away and a great revival has taken place of late. This was the second summer show held under the new directorate, which must be composed of earnest and spirited individuals, or such a liberal schedule could not be arranged and a strikingly meritorious display provided. The redoubtable Mr. Cypher was in strong force from Cheltenham, and won the chief prizes in the classes in which he competed, but not in all of them with the greatest ease, for Mr. Wills, gardener to Mrs. Pearce, ran him closely in the class for six, and Mr. Mould, Pewsey, was an excellent second in the leading class of nine specimens, followed by Mr. James of Norwood and Mr. Wills, whose collections were of equal merit. The plants of the last named exhibitor were remarkably fresh throughout the Show, and he received the leading prizes in the group class with a pleasing arrangement, light yet cheerful, but rather too flat, and for dinner table plants. Mr. Cypher's plants have been described over and over again. Mr. Mould staged a magnificent example of *Ixora Colei*, admirably grown and not over-trained, and *Erica Fairriana* with other good plants. In the amateurs' class for six plants Mr. Molyneux, gardener to W. L. Myers, Esq., Swanmore Park, was distinctly ahead with well-grown

and beautifully fresh specimens, including a *Bougainvillea* of exceptional merit.

The effect groups, of which there were six, were not only the whole of a superior character, the tendency to overpack being very manifest. It could be for no other cause than this that Mr. James and Mr. Hillier were both defeated in the open class. In the smaller amateurs' class there was only one really good arrangement, that of F. W. Flight, Esq., Twyford (Mr. Neville, gardener), and it was almost too like a bouquet, needing the relief of free elegant foliage, the remaining prizes being won by Messrs. Shipley and Symonds.

Roses were distinctly in the ascendant, the display extensive, and the blooms remarkably fine. It is questionable if better stands have been seen this year, especially of Tea-scented varieties. In the open division Messrs. Keynes & Co., were placed first for forty-eight, thirty-six, and twenty-four triplets, followed in the first-named class by Mr. F. and Mr. B. R. Cant respectively; in the second by Mr. C. Turner, Slough, and the Messrs. Cant (equal); and in the third by Messrs. Cooling Son, Bath, and Turner. Mr. F. Cant was first with twelve Teas, followed by Messrs. Hillier, Winchester, and Messrs. Cooling. In the any variety dark class Mr. F. Cant won with a magnificent stand of A. K. Williams, Mr. B. R. Cant occupying the corresponding position in the light class with *Merveille de Lyon*. The best stand of any Tea Rose was staged by Messrs. Cooling with, if we remember rightly, *Souvenir d'Elise Vardon*.

In the division not open to nurserymen there was splendid competition, Rev. R. H. Pemberton, Havering, sweeping the board—that is, securing the leading position in the three classes of twenty-four and twelve H.P.'s and twelve Teas. His blooms were superior throughout, and admirably staged. Other prizetakers in the classes were Messrs. S. P. Budd, Captain Ramsay, and F. W. Flight, who all contributed excellently to the remarkably fine display. The chief prize for herbaceous cut flowers was won by Mr. Molyneux.

The fruit department was well furnished, everything exhibited being good except Melons, and these lacked flavour, as others have at other shows this year. The prizes for a collection of six dishes of fruit went to Messrs. F. Dalgety and W. Baring, the former staging excellent black and white Grapes with a Pine, Melon, Peaches, and Nectarines. Mr. Wildsmith preferred not to win a prize in this class, and his not-for-competition assortment contained splendid Figs, excellent Peaches, and a capital Melon; and in the classes for these fruits he was awarded the chief prizes. Mr. Molyneux staged the best black Grapes—beautiful Hamburgs that would be hard to beat anywhere—followed closely by Mr. Baring with excellent bunches of Madresfield Court, and Mr. Hillier. In the white Grape class Mr. Baring was placed first with Muscats, but Mr. Molyneux's Buckland Sweetwater were dangerously close to them. Mr. Dalgety was third with the ripest of all, but not quite large enough.

There were excellent exhibits of collections of nine sorts of vegetables, the first-prize lot of Mr. Molyneux being quite first-rate; in fact, it would be difficult to imagine better produce. The other prizetakers, and they exhibited well, were Messrs. Dalgety and Baring.

Table decorations and ornaments were of the first order of merit, the first-prize dessert table of Miss Flight being characterised by the high quality of the flowers and fruit, and consummate taste in arrangement; in fact, all were good, Miss Wells and Mrs. Porter winning well the remaining prizes. In drawing-room ornaments the Misses Flight were pre-eminent with chastely arranged stands.

This is necessarily a much-compressed report of what was one of the finest provincial shows of the season, and Messrs. Porter and Colson, with all who shared in its provision and management, deserve unstinted approbation.

CHISWICK SHOW.—JULY 16TH.

VERY satisfactory in all respects was the Exhibition held by the Turnham Green Society in the Royal Horticultural Society's Gardens at Chiswick on Thursday last. The competition was close, and the majority of the exhibits most creditable. There was not, however, so large an attendance of visitors as was desirable, and that is the more regrettable since the Secretary (Mr. Fromow) and Committee had spared no efforts to render the Show thoroughly successful. It is to be hoped that the local supporters will give all the assistance they can, so that the Society may be raised to the position it deserves, as there is evidently good scope for it in the district.

Two large marquees and a large portion of the conservatory were filled with the plants, fruits, and vegetables, but the marquee devoted to the groups and cut flowers was by far the most beautiful, its appearance being greatly enhanced by the soft green well-kept turf upon which the plants were placed. The groups in consequence had an extremely good effect, and they were moreover distinguished by admirable taste in the arrangement. Very seldom indeed are ten such elegant groups seen in competition as those staged in the two classes. In the open class for a group in a space not exceeding 100 square feet Messrs. Hooper & Co., Covent Garden and Twickenham, took the lead with one of the most graceful and well-balanced groups that their manager, Mr. Bruckhaus, has ever arranged. There was a due proportion of foliage and flowering plants, and a neatness of finish that was most pleasing. Following closely were Messrs. W. Fromow and Son, Turnham Green, and E. H. Watts, Esq., Devonhurst, Chiswick (gardener, Mr. A. Wright), both of whom had varied and bright groups. The 60 feet groups were scarcely less attractive, and of the six exhibitors F. R. Geaves, Esq., Hatfield House, Cambridge Park, Twickenham (gardener, Mr. G. Tittell), well deserved the premier prize awarded to him for a charming combination of Ferns and flowering plants. E. M. Nelson, Esq., Hanger Hill House (gardener, Mr. Chadwick), and H. G. Lake, Esq., Fairlawn House, Chiswick (gardener, Mr. H. Davis), were second and third respectively, each showing well. Several classes were devoted to specimen plants, but these, though neat and healthy, were not remarkable for size, except in the class for Ferns. With six stove and greenhouse plants Messrs. Bates, A. Wright, and Chadwick were the prizetakers. Mr. A. Wright had the best six *Selaginellas*, handsome pyramidal plants of distinct varieties, and the same exhibitor took first with three *Fuchsias*. Mr. Sallows, Twickenham, was first with *Achimenes*, Tuberous *Begonias*, and *Coleuses*, being followed by several of those already named. Mr. Chadwick had the best six Ferns, large vigorous specimens; Messrs. A. Wright and

Davis securing the remaining prizes with smaller but equally healthy examples. Mr. Chadwick also staged the finest six foliage plants, and was followed by Messrs. Davis and Hooper & Co.

Bouquets were not satisfactory, being heavy and formal, but the stands of flowers were good, especially the three with which Mrs. Hudson, Gunnersbury House Gardens, gained the premier honours, which were the most tasteful we have seen for a long time, and were really faultless.

Fruit was numerous shown, Cherries, Gooseberries, Currants, and Strawberries being especially good. The Grapes, however, with the exception of the two premier prize collections in the white and black variety classes were not quite so satisfactory. Mr. Hudson had the best black Grapes, Madresfield Court, even bunches, large berries, and well coloured; Mr. Band, Homefield Gardens, Ealing, taking a similar position in the white Grape class with Duke of Buccleuch, medium size bunches and berries, but splendidly coloured.

Vegetables were excellently shown, the competition being unusually keen in all the classes. The Society's prizes for nine dishes brought seven exhibitors, Mr. C. J. Waite, Glenhurst Gardens, Esher; Mr. J. Coombs, and Mr. W. Wright securing the awards in that order with fresh, clean, even produce. Eleven competitors entered for Messrs. J. Carter & Co.'s prizes, and C. J. Waite was again the premier exhibitor, followed by Messrs. J. Coombs and A. Wright. Of the nine entries for Messrs. Sutton and Sons' prizes Mr. C. J. Waite was for the third time the champion, thus carrying off three first prizes for vegetables at one show—a remarkable achievement; Mr. J. Coombs being second in each class, and in the last named was followed by Mr. T. Sibb.

The non-competing exhibits comprised some magnificent Roses from Messrs. J. Veitch & Sons; Lee & Son, Hammersmith; and Bunyard & Co., Maidstone. Messrs. Lee also having a fine group of ornamental trees and shrubs.

MARECHAL NIEL ROSE.

THE *Marechal Niel* Rose blooms which I sent you some time ago were grown against the wall of a house without any protection. The situation is well sheltered from the north and east, and fully exposed to the south and west. What I consider the chief cause of success is that it is grown in a box and liberally nourished during its period of growth.

Grown thus, with a restricted root space, the wood ripens better than when planted out, and the fine blooms it produces in the early summer will repay for the extra labour caused.—J. MACDONALD.

[We have not seen finer blooms at any of the Rose shows this year than two that were sent to us by our correspondent.]

THE PRESERVATION OF NATIVE PLANTS.

THE Council of the Midland Union of Natural History Societies, including upwards of twenty natural history societies and field clubs in the midland counties, forward us the following statement concerning the desirability of adopting some means of preserving the native flora of Great Britain.

It is a fact only too evident to the most superficial observer that many of our rarest and most beautiful native plants have already been or are being rapidly exterminated; and it may be assumed that this extermination will be viewed with regret—even with indignation—alike by the student and by the ordinary lover of natural beauty, and that both will be willing to assist, by all available means, in any measures which may afford the prospect of arresting its course.

The Council of the Midland Union of Natural History Societies asks serious attention to the following brief statement of the causes of the rapid destruction of British plants, and of what it ventures to suggest as the best means of mitigating the evil.

These causes appear to be mainly as follow:—

First, The ravages of professional plant-hunters, who offer to the tourist or to the general public, by advertisement, plants attractive by reason of their beauty or of their comparative or absolute rarity.

Second, The operations of Exchange Clubs, the members of which are often asked to supply large numbers of the rare plants of their own districts in exchange for corresponding quantities of those of other neighbourhoods.

Third, The indiscriminate or careless gathering of plants, often taken with their roots or in seed, by botanists and their students in the course of botanical excursions.

Fourth, The reckless gathering of large numbers of specimens by individual botanists.

Recognising that restrictive legislation or police interference are neither applicable nor desirable, the Council believes that it is by the indirect influence of example and the promotion of healthy public opinion that the evil in question can alone be combated.

They, therefore, earnestly urge the following considerations upon botanists, members of field clubs, natural history and other scientific societies, upon all lovers of Nature, and upon the public generally:—

First, That they should rigidly abstain from encouraging or countenancing the purchase from professional plant-hunters of any native plants for the sake either of their rarity or of their decorative value.

Second, That botanists should resort to the assistance of exchange clubs, if at all, only for the purpose of obtaining single specimens necessary to fill up blanks in their herbaria, using such assistance with discrimination, and excluding from their operations plants of great rarity.

Third, That all teachers should inculcate upon their pupils, by precept and example, the lamentable consequences of the wholesale or indiscriminate gathering of plants, especially with their roots or when in seed.

Fourth, That individual botanists should seriously reflect on these consequences, and abstain from taking more than the smallest number of specimens indispensable for the purposes of genuine study, and even from taking any where the extermination of a particular species from a restricted habitat is threatened.

Fifth, That tourists and amateurs should be urged to refrain from collecting plants of any degree of scarcity, especially when in flower or seed, it being impossible that 10 per cent. of those gathered under such conditions can possibly live after removal.

Finally, the Council earnestly appeals to the editors of all journals devoted to science and art, as well as to horticulture and floriculture, and to those of the leading London and provincial papers, to assist it in creating a healthy public opinion on this subject by the expression of their sympathy with the effort which the Council is making.

RARE PITCHER PLANTS (NEPENTHES LOWI).

THE other day I heard an amateur observe that, much as he liked *Nepenthes*, there was a remarkable sameness about them in habit of growth and in form of pitcher. Perhaps to some extent he was right, and yet I never see the great collection at Messrs. Veitch's Chelsea nursery without falling in love with these plants over and over again. When well grown, even the commoner kinds, such as *N. gracilis*, *N. phyllamphora* are most elegant but good plants; even small ones, well grown, of *N. Hookeriana*, *N. Mastersiana*, or *N. Khasiana* never fail to attract attention. Apart from their beauty of form and lovely colouring their interest botanically is very great, and Dr. Macfarlane of Edinburgh, who has recently carried on some interesting microscopical examinations of the glandular structure of the pitchers, finds these glands so characteristic that not only native species, but even garden hybrids, could be named with tolerable, even if not with infallible, certainty by the inspection of these glands alone. Perhaps after all there is some little sameness in the pitchers of many kinds, especially since the influx of the American hybrids raised by Mr. James Taplin; but one thing is especially worth remembering—viz, that some of the most remarkable and distinct of all the wild species are not as yet in the hands of ordinary cultivators. One of the most distinct of these is certainly *N. Lowi*, of which we now give an illustration. Its great leathery pitchers are flagon-shaped, and totally different to those of any other known species of Borneo, its native land, although in the Seychelles Islands there is a wild species, *N. Wardii*, which has pitchers somewhat similar but smaller.

Then there is the true *N. villosa*, with downy pitchers as gracefully rounded and as brilliant in colour as a well-ripened Peach; but (after *N. Lowi*) perhaps the most distinct and beautiful of all the unimported *Nepenthes* is *N. Edwardsiana*, pitchers of which have been found over 20 inches in length and of a bright brick-red colour. The above are some of the more remarkable kinds yet to be introduced to our gardens generally, but we already have the noble *N. Northiana* and *N. Rajah* from Borneo, and one or two interesting kinds from Sumatra.

N. Lowi is found at an elevation of about 5000 feet on Kina Balu, in the north of Borneo. It is epiphytal on low-growing trees of *Casuarina*, every branch of which is covered with wet moss and beard-like masses of *Usnea*. The growing points of the long rope-like stems which peep out above the scrubby mass of undergrowth are covered with pitchers, as shown in this little sketch made on the spot. *N. Lowi* was named after Hugh Low, Esq. (now Sir Hugh Low, C.M.G.), who, when Colonial Secretary at Labuan, made the first ascent of Kina Balu, and discovered three or four species of *Nepenthes* and other plants previously unknown. As this mountain is so rich in botanical interest, it is to be hoped that the British North Borneo Company will have it thoroughly explored, seeing that it lies but a few days' journey from their coast stations; indeed, one of the first objects of the Company should have been the formation of a road to, and a health station or sanitarium on this cool mountain side, seeing that without such provision it is well nigh impossible for Europeans to exist permanently in such a uniformly hot and malarious climate.—F. W. B.

PLUNGING PLANTS.

ONLY a few years ago it was a common practice to plunge plants in some moisture-holding material when grown indoors or placed outside during the summer months; but of late years a general system of plunging does not appear to be practised, and I am led to the conclusion that this operation has not found favour with gardeners generally.

As far as indoor plants are concerned this view of the case can be largely supported by a mere glance at the modern structures that have been erected for plants. In these provision for plunging material scarcely finds a place, and stages are substituted of iron and slate capable of holding 2 or 3 inches of sand, gravel, ashes, fibre, or similar material for retaining moisture. That plants can be grown to a high state of perfection without being plunged is fully demonstrated by the splendid examples to be met with in many gardens where plants for decoration are largely grown. Although such results are attained it does not prove that the system generally adopted is the best or the most economical as regards labour. I am of opinion that in most gardens accommodation should be provided for plunging, but the deep pits or beds frequently seen in old houses are not needed. The beds should be sufficiently deep for 8 to 12-inch pots, and if larger than these need plunging the material can be raised above the side of the beds without presenting an untidy appearance.

For the propagating frame plunging material should be provided—I

have found nothing better than sawdust or cocoa-nut fibre refuse—where miscellaneous cuttings are rooted. Those of a soft nature require a good watering after insertion, and then if the pots are plunged in a close frame they rarely require water again until after they are rooted; but for cuttings of *Crotons*, *Dracaenas*, *Ixoras*, *Gardenias*, and many others a mere sprinkle to moisten the foliage after insertion is sufficient if the

condition of the soil of the plunged plants after their pots are full of roots will be found upon examination to be very similar as regards moisture to what it was when the pots were first filled.

The advantages of plunging the pots may be further demonstrated by reference to the same kind of plants. Plants rooted without watering the soil have been transferred into larger pots, and in several instances



Fig. 11.—SIR HUGH LOW'S BORNEAN PITCHER PLANT (*NEPENTHES LOWII*, Hook. fil.)

soil is in a satisfactory state when the pots are filled. These cuttings should be inserted singly in small pots, and if plunged cover the pots and surface of the soil with the material used; they will need no water until they are rooted. Cuttings treated on this system will fill their pots with roots by the time others watered in the ordinary way and stood upon the surface of the plunging material commence the formation of roots. The

reputed a second time, and have filled their pots with roots before water was given them. I believe it possible to shift plants until they are of a large size before it is necessary to apply water to the soil. Evaporation is arrested by this simple process, and the soil in the pots will remain in an intermediate state of moisture for a long time, which is the most suitable condition that can be maintained for encouraging the formation

of roots in the first instance and their rapid development afterwards. Regularity as regards both heat and moisture is thus obtained, and all who try this system of plunging will be surprised how rapidly the plants fill their pots with roots.

Plunging plants indoors has probably fallen into bad repute more through the careless manner in which they have been watered than from any other cause. But when this has taken place the pots have been plunged to their rim, only the surface of the soil being exposed to the sun and atmosphere of the house. In plunging plants the rim of the pot should be covered at least 1 inch below the surface, and then no mistakes need be made in the supply of water, for it is reduced to a very few applications. Soil for potting should always be in an intermediate state of moisture, and when used in this condition and the plants plunged after potting no water will be needed for at least a month even during hot bright weather. On several occasions Eucharises have been shaken out, repotted, and plunged, and they have filled their pots with roots before it proved necessary to give them water. Gardenias and other plants have been treated in the same way, and in each instance the most successful results have followed.

Phaius and Calanthes are often ruined in their early stages by too much water. In this case it can be remedied by plunging and covering with fibre directly they are potted. This can be done without the slightest injury to the young growths that are springing from the base of the pseudo-hulbs. When potted singly this is simple, for the pseudo-bulbs can be slightly elevated in the centre of the pots that are used. Under this system the plants will be rooting freely before it is necessary to give them water, when liberal supplies do them no harm.

For plants that have to occupy outside positions during the summer months a judicious system of plunging should commend itself to all who care for the health of the various plants under their charge and wish to economise the labour at their disposal as much as possible. Hardy flowering shrubs that are prepared for forcing and kept in pots from year to year can be grown to very great perfection with comparatively little labour in watering if the pots are plunged instead of being stood upon walks and heds of ashes and watered daily, and often more frequently during hot dry weather. Last year Lilacs, Guelder Roses, and similar plants were cut back, top-dressed, and plunged in the ground, covering the pots, and we found it unnecessary to water them during the whole summer. They were not even syringed, and they made strong sturdy growth with abundance of large bold flower buds. Roses in pots may be plunged in the same way, and one or two soakings of water during the remainder of the season will prove ample, no fear being entertained that they are suffering by the want of water. Whenever plants stood on the surface of walks with their pots exposed we found the soil dried too quickly, and they soon became a prey to mildew. Last year we partially reduced the balls of our Hybrid Perpetual varieties in July, and replunged them in ashes without giving water, and none was applied until after the plants were housed, pruned, and ready for starting. The pots were full of roots, but a number of plants that were not plunged had to be watered many times during the season, and did not make more than one-third the quantity of roots by autumn. The advantage of plunging is very marked in the case of Roses, for plants lifted towards the end of October, repotted, and then plunged, will fill their pots with roots if the foliage is kept healthy by syringing, but plants potted at the same time and stood upon walks, even if the same care is taken to maintain the foliage, will not make more than half the quantity of roots. Solanums and other similar plants that are grown in pots will not give half the labour in watering if the pots and surface of the soil are covered in ashes or soil, as will be the case if plunged only to the rim of their pots or stood upon the surface of beds of ashes. Plants of this description often root over the sides of their pots, but when lifted in autumn the removal of these roots will not prove injurious to the plants if they are kept moist and shaded for a few days.

That this system is a safe and a reliable one as regards the majority of plants is proved by the fact that in large nurseries hundreds of thousands of plants are plunged in the manner described. The enormous quantity of plants grown in pots in large nurseries for removal with safety at any season of the year could not be supplied with water without a very large increase in the labour staff. Not only is plunging as described a labour-saving practice, but it insures safety against a common evil arising from a too frequent use of the water pot. This is probably the chief cause why many plants are unsatisfactory. When plants are potted and stood upon walks with their pots exposed, judgment and the greatest care is essential, or else too much water will be poured into the soil before the roots have taken full possession of it. The roots of plants, whether stove, greenhouse, or hardy, will not enter soil freely that has been saturated. It is a well-known fact that the longer plants can be kept without water after they are potted the sooner the roots recover from the injury they have received.

When plants are grown indoors and plunged exposed to the sun, they should be freely syringed at least twice daily during bright weather, and the plunging material should also be kept moist or it will draw the moisture out of the soil. If the material is moist when the plants are plunged the daily syringings will keep it so.—WM. BARDNEY.

HALES' EARLY PEACH.

SOME time ago I sent you a note in favour of this grand Peach, and another season's experience of it fully confirms all my former good impressions. Growing at the coolest end of a cool unheated house it set a capital crop of fruit in the fore part of April, and in three months after

wards—i.e., the 1st of July—we were gathering fine ripe fruits of it. They swelled to a good size, were of a high and beautiful colour, and excellent in flavour. Prince of Wales and Royal George Peaches growing in the same house are three and four weeks behind it in ripening, and they have the advantage of being nearer a heated vinery. For market work or an early crop anywhere this variety could not, in my opinion, be surpassed. It grows so freely, fruits so profusely, and ripens the crop so fast and well, that I can recommend it as a most desirable early Peach. That skilled fruit-grower, Mr. Coleman of Eastnor Castle, when here the other day, told me he knew of its good qualities, and speaks of it in much the same terms as I have done.—J. MUIR.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 2.

WHICH churchyard was it "between Gracechurch Street and the Tower," where Dickens came one Saturday evening upon an "old, old man and an old, old woman" engaged in the work of tossing hay? "Gravely among the graves," says he, "they made hay all by themselves; there was but one rake between them, and they held it in a pastorally loving manner; there was hay on her bonnet, as if the old man had recently been playful." Possibly the small product of hay was destined for some old, old horse lodged not far off, and a favourite with the worthy couple. If the spring has been showery we may see grass long enough to make hay in several of the City churchyards, but some show only a poor, sickly growth, arising from confined air or the impoverished character of the soil. Passers along the great thoroughfares of London City know little about these relics of the past, shut in very often by tall buildings, each having a history of its own, and many of them looking cheerful some part of the year with their trees, shrubs, and even flowers. It is a pity that, under suitable regulations, they cannot be thrown open to the clerks or warehousemen who toil close to them in rooms close and oppressive during the summer season, and who might thus take a rest at their meal times instead of munching sandwiches in the streets or getting a glimpse of these green spaces through the outside railings.

Surveying these gardens of the dead, which have ceased to be repulsive, one notices the absence of some trees that it would be natural for us to expect to see in their precincts. Funeral trees of any age are not to be met with; it is strangest to miss the Yew, because it was so commonly planted in churchyards by our ancestors. Did the zealous Puritans of the seventeenth century cut down the City Yews as associated with Popery, or did they perish through the demand for bow-wood? Then certainly London formerly had many Elms in its gardens and roads about the City; they are now merely represented by a few stumps, brought low, probably by that troublesome beetle, *Scolytus destructor*; yet it is possible that internal decay precedes the attack of the insect. It may not be out of place to remark in passing that modern observation of the Elm suggests that it is not a tree suitable for planting in much-frequented thoroughfares, because it has a habit of throwing off branches suddenly. Willows would not be likely to flourish in London at this present day, but these trees did once grow freely in several City churchyards, when there were springs occurring on the sides of its little hills to refresh the arid soil. Seldom do we come across a Hawthorn larger than a bush, and though I doubt not the Ash, Maple, and Horse Chestnut would do well even in the air of central London, these do not appear to have been planted in former times.

St. Paul's Cathedral churchyard, we are glad to say, is now open to the public, having been laid out at the expense of the Corporation of London, and large as is the number of its daily visitors, and varied their social position, the conduct of all is reported as "excellent." There are seats, fountains, beds of flowers, and shrubs, and it was satisfactory to notice that some of the visitors at least occupied themselves in observing what was growing, while to others the animal life in the garden, exhibited by pigeons and sparrows, furnished amusement. As we read, this churchyard was, centuries ago, very shady with trees; some large ones were blown down in a great gale of the year 1611. The few trees now of size are Sycamores, standing irregularly on the north side of the ground; but some saplings have been planted recently, judiciously distributed, so that they will not be likely to check the growth of flowers beneath them. A preference seems to have been given to Birches and Poplars, trees suitable for the garden, because they do not throw much shadow from their foliage. In a spot that has been a churchyard we cannot object to the presence of one or two Yews amongst other evergreens; but I always think this species is best either as a hedge, or placed solitary. Some evergreens do exceedingly well in the London atmosphere; Conifers, however, are seldom successful, so far as I have seen. The Aucubas and Laurels of St. Paul's compare favourably with those growing in other London churchyards. Unless carefully tended the evergreens of town gardens are liable to pass into a peculiar condition of existence; they still put forth leaves, but make no growth, remaining stunted year after year. Varieties of the Box were, to my surprise, freer from scale than in the open suburbs. This species needs to be well syringed during mild weather in spring, a matter often neglected both in gardens and shrubberies. Positively, the old Cathedral in leafy June could look down upon flowering Camellias and Rhododendrons, with a fair display of Liliaceous flowers of later spring, and gardeners were busy bedding-out. I cannot say I admire the plan of giving some heds a large centre of evergreens, and then edging them with a small circle of Pelargoniums, Calceolarias, and so forth. Nor do I think it advantageous to fill occasional beds entirely with Ivy, which may be agreeable to the eye throughout the year, but is apt to form a place of hiding for snails

and some insects. A practice not uncommon in public gardens is that of sowing annuals here and there in small patches amongst plants of smaller growth, but they seldom come up well then. Some annuals, hardy and half-hardy, succeed in the air of the metropolis, yet only if they have plenty of light, and they need very assiduous watering. When I saw examples of the Monkshood conspicuous in some of the beds of this garden, I was reminded of the reply given to some querist who wanted to know how to manage the Monkshood, "The best way to manage it is to pull the plant up and burn it." And, seriously, the Aconites are so poisonous, not only in their roots, but in their leaves and flowers, that for the most part they are best excluded from gardens of common resort.

Amongst the small City churchyards that are open to the public is that of St. Catherine Colman, close to Fenchurch Street. It is of interest for some reasons, though the church is not old, having been rebuilt in 1734. Limited as is the open space now, the generally accurate Stow informs us that the second name arose from a large haw garden near the church, called "Coleman-haw." What was a haw garden of the olden time? Certainly not a place planted chiefly with Hawthorn. So far as we can tell, people meant by it a garden enclosed or hedged round. The Saxon "haw" came to be applied to the Maybush or Whitethorn because it was found very suitable for this purpose. There are no trees of any size in this churchyard, but young Limes are growing well, upon one of which I was pleased to detect some caterpillars of the vapourer moth, an insect that is one of the few to which a City life is quite as agreeable as one in the open country. Hawthorns are here, too, scarcely descended from those which may have grown hereabout in days of yore, Laburnums, and a few evergreens and flowers. Odd plants turn up in some of the old churchyards; thus in the little plot of St. Gabriel's, off Fenchurch Street, with fine tall Sycamores, some tendrils of Hop were creeping along the railings, apparently self-sown. In the churchyard of St. Lawrence, Poultny (which still remains undisturbed, though the church was not rebuilt after the great fire) the Strawberry-leaved Trefoil was growing on one of the graves, trying to live in London air. This plot is well planted with flowers and shrubs, the trees are Limes and Sycamores, as is frequently the case. At their roots the London Pride (*Saxifraga umbrosa*), appears to be quite at home, but sundry Ferns that have been introduced look languishing. Fierce is the roar of life around the churchyard of Allhallows in Thames Street, and wise probably the regulation which keeps this place closed to the public, or it might become too full of the habits of the adjacent Billingsgate. Here are two fine Sycamores, and many shrubs. Flowers are not wanting either, though it is found needful to cover the choicest with wire frames to protect them from the cats. For it is a fact some do not know that cats are numerous in the busy districts of central London, encouraged of necessity as an antidote to the prolific and all-devouring rats.—J. R. S. C.

ROSE SHOWS.

CHRISTLETON ROSE SHOW.

JULY 14TH.

"Well done Christleton!" was the mental observation of many who surveyed the well-filled tent in the Lawn Field, Christleton, on the above date, for it is a happy surprise to find such a splendid Exhibition. The Roses were, as a whole, simply grand. Nowhere have finer blooms entered the friendly strife than many staged in the amateurs' classes. That redoubtable exhibitor, T. B. Hall, Esq., Rock Ferry, came out in his very best style, and as the awards will show carried all before him; and well he might, for his flowers were first rate. The National Rose Society's Show at Manchester the previous Saturday did not include such blooms, and we may say almost as much for those staged by W. J. Grant, Esq., of Ledbury, perfect in colour and finish, but not so large as Mr. Hall's. The Show was much better in every respect than upon any previous occasion. This is undoubtedly due to the keen interest taken in the affair by the Rev. Lionel Garnett, he himself being a most enthusiastic grower and successful prizetaker. He, too, is well assisted by the good and genial Secretaries, Messrs. Weaver and Earlam.

Another very remarkable and interesting feature was the wealth of hardy herbaceous flowers, staged in great abundance and variety. They were extremely showy and much admired. Great interest centred in the collection from Edge Hall, Malpas, arranged by the Rev. C. Wolley Dod, the best of which are noticed below. The large number of exhibits in the competing classes and their general excellence was very gratifying—a good reward again to Mr. Garnett, who is very wishful to encourage the culture of such flowers in his district. The first prize for the best H.P. Rose in the amateurs' classes was awarded to A. K. Williams in Mr. Hall's stand, although we could have wished it had been bestowed upon a grand bloom of Duke of Teck in the same exhibitor's stand of eighteen. Mr. Hall also secured first prize for the best Tea Rose, which certainly merited it. The weather being gloriously fine a large number of the public availed themselves of the opportunity of admiring the queen of flowers.

NURSEYMEN'S CLASS.—There was only one provided in this section—viz., for thirty-six distinct, single trusses. Two stands were staged, both of which were good, indeed many of the flowers were superb. The first honours were awarded to Messrs. F. & A. Dickson & Sons, Upton Nurseries, Chester, followed by Messrs. James Dickson & Sons, Newton Nurseries, Chester. The leading collection contained excellent flowers of the following:—Back row—Charles Lefebvre, grand; Etienne Levet, Lady Mary Fitzwilliam, Comtesse de Morny, splendid; Louise Peyronney, very large; Elie Morrel, a grand bloom; and Marquise de Castellane. Middle row—François Michelin, Capt. Christy, La France, Queen of Queens, Sir Garnet Wolseley, very fine. Front row—Duc de Rohan, Duchesse de Caylus, and Madame Victor Verdier. The second lot contained many splendid blooms, amongst which were the following:—La France, magnificent; Madame

Montet, Duke of Teck, an extraordinary flower; Ulrich Brunner, Baroness Rothschild, Maria Baumann, Etienne Levet, Madame Eugène Verdier, Xavier Olibo, grand; Madame Chas. Wood, Comtesse de Serenye, and Madame G. Luizet.

AMATEURS' CLASSES.—The leading one was for twenty-four distinct varieties, in which four very superior collections were staged, better than which we have not seen this season, especially those belonging to T. B. Hall, Esq., and W. J. Grant, Esq. The premier award fell to the first of these exhibitors, in whose stand there was not a weak bloom. The following were shown:—Back row—Dr. Andry, Merveille de Lyon, A. K. Williams, François Michelin, La France, Xavier Olibo, Captain Christy, Ulrich Brunner, fils. Middle row—Marie Verdier, Le Havre, Violette Bouyer, Charles Lefebvre, Marie Baumann, Marie Finger, Duke of Edinburgh, Duchesse de Vallombrosa. Back row—Louis Van Houtte, Marquise de Castellane, Madame Victor Verdier, Innocente Pirola, Duke of Wellington, Comtesse d'Oxford, Etienne Levet, and Prince Arthur. Mr. Grant's stand included a very large per-centage of first-class blooms; special mention may be made of the following:—Constantin Tretiakoff, Star of Waltham, Madame Sophie Fropot, Dr. Andry, Horace Vernet, A. K. Williams, Mrs. Jowitt, Duke of Wellington, and Mons. E. Y. Teas. The third prize fell to the Rev. L. Garnett, Christleton, who had excellent flowers of Comtesse d'Oxford, François Michelin, Madame E. Verdier, Marie Baumann, Le Havre, Alfred Colomb, and Louis Van Houtte. For eighteen distinct varieties Mr. Hall again took the lead with another magnificent stand as follows:—La France, Dr. Andry, splendid; Merveille de Lyon, Général Jacqueminot, Capitaine Christy, Marquise de Castellane, Prince Arthur, Madame Eugène Verdier, A. K. Williams, Innocente Pirola, Marie Baumann, Xavier Olibo, François Michelin, Lord Wolseley, magnificent; Marie Verdier, Duke of Teck, an unusually good bloom; Magna Charta, and Le Havre. Rev. L. Garnett took the second, the best being Madame Gabriel Luizet, Etienne Levet, Charles Lefebvre, Baroness Rothschild, Marquise de Castellane, A. K. Williams, and Madame Victor Verdier. Third Mr. Grant, Ledbury. In the class for twelve trusses of any light variety there were six stands staged, Mr. Hall taking the first position with magnificent blooms of Marie Finger, which for finish and colour could scarcely be beaten; the second fell to Mr. Grant for a rich stand of La France. For twelve any dark variety Mr. Hall was again first with a perfect stand of Marie Baumann, large, full, and splendidly finished blooms; followed by Mr. Grant with Alfred Colomb: two others were staged, Louis Van Houtte and Le Havre. For twelve distinct varieties, section C, W. E. Hall, Esq., Bebington, was a good first with an excellent stand; the best flowers were Marquise de Castellane, Horace Vernet, Prince Arthur, Marie Baumann, and Marie Finger. The second and third fell to Col. Standish Hore, St. Asaph, and Mr. Weaver, gardener to Mrs. Townshend Ince, Christleton Hall, respectively. In the corresponding class for six varieties there were six lots staged, the first falling to C. K. Hall, Esq., Oxtou, with Marquise de Castellane, Merveille de Lyon, Captain Christy, Etienne Levet, Marie Baumann, and Madame G. Luizet. Second and third to Col. Stanish Hore, and Mrs. Townshend Ince in the order named.

Tea and Noisette Varieties.—For twelve varieties T. B. Hall, Esq., took the lead, staging in his usual style—not a weak bloom, but first-class flowers of the following: Anna Ollivier, Marie Van Houtte, magnificent; Souvenir d'Elise, Alba Rosea, Catherine Mermet, very rich; Innocente Pirola, grand; Jean Ducher, Comte de Paris, Madame Margottin, Madame Lambard, Madame Willermoz, and Francisca Kruger. This last was awarded an extra first prize as the best Tea Rose in the Show. It is a scarce kind, and in this case was shown in excellent condition. The second fell to J. Grant, Esq., who had excellent flowers of Madame Lambard, Caroline Kuster, Anna Ollivier, and Rubens. For six varieties Rev. L. Garnett took the lead with a pretty stand of Bouquet d'Or, Innocente Pirola, Comtesse de Nadaillac, and Madame Lambard. The second fell to W. E. Hall, Esq., Bebington, with a nice stand.

District-grown Roses.—For six trusses the first fell to Mr. D. Large, Christleton, with a good lot—Abel Carrière, La France, Xavier Olibo, Baroness Rothschild, Duke of Wellington, and Duke of Edinburgh; second, C. W. Townshend, Esq., Trevallyn; third, Mr. John Walker, Waverton. Several other small classes were well filled in this section, a sure indication of the interest taken in Rose-growing in the district.

HARDY FLOWERS.—These were a most important and attractive feature—indeed, it was impossible to see a finer lot. For a collection of not more than thirty-six varieties the first was taken by F. N. Garnett, Esq., Wyreside, Lancaster, with a very gorgeous collection, the best of which were Phlox Mrs. Hunter, Campanula grandis alba; Delphinium Cantab, a large light blue variety; Lilium croceum, Dictamnus Fraxinella, Centaurea Marshalliana, Onosma taurica, Campanula pelviformis, Rosa rugosa, Gaillardia grandiflora, Pyrethrum Boule de Nieve, Iris xiphoides, a splendid form; Campanula glomerata, Gladiolus The Bride, Bahia lanata, and Pink Mrs. Sinkins. Rev. L. Garnett was second with an excellent collection, the best of which were Phlox Lady Napier, Gladiolus insignis, Campanula persicifolia, Alstroemeria Hookeri, a charming species, richly coloured; Sweet Sultan, Papaver nudicaule in variety, very attractive; Harper Crewe's Doronicum, Campanula Hendersonii, Scabiosa caucasica, Gladiolus The Bride, Achillea serrata fl.-pl., and Catananche coerulea. For a collection of not more than twenty-four varieties C. W. Townshend, Esq., was first, and Mr. Weaver, gardener to Mrs. Townshend Ince, Christleton Hall, second, although we failed to see why the second was not placed in the premier position, as it was much the showiest. The best in Mr. Weaver's lot were Gladiolus Colvilli and its white variety The Bride, Delphinium grandiflorum pl., magnificent spikes; Spiraea palmata, Chrysanthemum segetum, Lychnis vespertina fl.-pl., and Spiraea palmata elegans. The best in the leading lot were Delphinium Herman Stenger, Acanthus latifolius, Erigeron speciosum, Linum flayum, Achillea Eupatorium, and Delphinium nudicaule. The first prize for the best hand bouquet of Roses dressed with Rose foliage and Ferns only fell to T. R. Fleming, Esq., Rowton Grange, for a very handsome one.

MISCELLANEOUS EXHIBITS.—A very fine lot of hardy herbaceous and bulbous flowers was staged in two boxes by Messrs. James Dickson & Sons, Chester, all showy kinds—Delphiniums in variety; Lilliums, including pardalinum and Michauxii; English Irises in variety, Crinum capense varieties, Ranunculus Fireball, Lathyrus grandiflorus, Lilium longiflorum,

Ranunculus Mont Blanc, a splendid white variety; *Alstroemeria aurea*, *Spiraea Aruncus*, *Aquilegia chrysantha*, &c. Messrs. F. & A. Dickson showed some fine *Merveille de Lyon* Rose and a nice selection of stove and greenhouse plants. The Rev. C. Wolley Dod staged a very rich and effective collection of hardy flowers, many of which are scarce. Conspicuous was a grand flower of the Horned Poppy, *Romneya Coulteri*, a large pure white flower quite 6 inches across, with a large tuft of yellow stamens: it is really a very fine plant; *Erythrocæta palmatifida*, *Antemiss tinctoria alba*, very pretty; *Iris sordida*, *Scabiosa caucasica*, a fine blue *Scabiosa*; *Lilium Martagon album*, an immense spike; *L. pardalinum*, *Orchis foliosa*, *Papaver Hookeri*, *Spiraea Aruncus*, *Dictamnus fraxinella*, *Campanula rotundifolia* in variety, showing a great difference in form and size; *Ligularia macrophylla*, the rare blue Poppy (*Meconopsis Wallichii*), *Aster Bigelovii*, *Onosma taurica*, *Rosa rugosa*, and *Phlox Lady Napier*, a splendid white early-flowering *Phlox*. A splendid stand of Roses was staged by T. B. Hall, Esq., which did great credit even to that redoubtable exhibitor.

CRAY VALLEY AND SIDCUP HORTICULTURAL SOCIETY.

JULY 11TH.

THIS, the first Exhibition of this Society, brought together a capital exhibition of Roses, and the National Rose Society is to be congratulated on what is to all intents and purposes a new Rose Exhibition in the Cray district. The prizes offered were liberal, and brought to Sidcup some of the leading trade growers. The Show was held in the grounds of Sidcup House, the residence of the Rev. R. M. Berens; and though plants, fruit, and vegetables were included in the schedule of prizes, Roses were the leading, and a very good feature too.

In the all-comers' division were four classes, and that for forty-eight varieties of Roses, distinct, single trusses, brought five competitors; Mr. B. R. Cant, Colchester, being placed first with beautiful blooms, including Duke of Teck, Général Jacqueminot, Madame Hippolyte Jamain, Louis Van Houtte, Mrs. Jowitt, Innocente Pirola, Fisher Holmes, Lady Sheffield, Marguerite St. Amand, Souvenir d'Elise, Madame Cusin, Madame George Paul, Maréchal Niel, François Michelon, Madame Welch, Catherine Mermet, Camille Bernardin, and Miss Edith Gifford. Messrs. Paul & Son, Old Nurseries, Cheshunt, were second; their best flowers being Xavier Olibo, Star of Waltham, Mons. E. Y. Teas, H. Schultzeis, Alfred Colomb, Boieldieu, Beauty of Waltham, Duc de Rohan, Jean Ducher, the pretty striped Pride of Reigate, Queen of Queens, Niphetos, &c. Third, Mr. W. Rumsey, Waltham Cross. The best twenty-four blooms, single trusses, were staged by Messrs. G. Bunyard & Co., Maidstone, who had very nice fresh examples of Star of Waltham, Etoile de Lyon, A. K. Williams, Jean Ducher, Madame Lacbarme, Marie Baumann, Alfred Colomb, Richard Laxton, Dupuy Jamain, S. R. Hole, Charles Darwin, and Maréchal Niel. Mr. B. R. Cant was a good second, staging good blooms of A. K. Williams, Countess of Rosebery, Maréchal Niel, Le Havre, Duke of Teck, Merveille de Lyon, Prince Arthur, Louis Van Houtte, Star of Waltham, Miss Edith Gifford, Innocente Pirola, and Catherine Mermet. Third, Mr. W. Rumsey. The class for twelve varieties of Teas and Noisettes brought a good competition, and here Messrs. Bunyard & Co. were again first, having excellent examples of Perle de Lyon, Madame Bravy, Jean Ducher, Etoile de Lyon, Maréchal Niel, Madame Hippolyte Jamain, Jean Pernet, Perle des Jardins, Homère, Catherine Mermet, and Souvenir de Paul Neron. Mr. B. R. Cant came in second, staging some fine blooms of Catherine Mermet, Miss Edith Gifford, Caroline Kuster, Etoile de Lyon, Devoniensis, Innocente Pirola, Madame Cusin, and Rubens. Third, Mr. W. Rumsey. In the class for six trusses of one variety there was a spirited competition, the first prize going to Mr. Cant with a half-dozen medium-sized, finely coloured, and symmetrical blooms of A. K. Williams; Messrs. G. Bunyard & Co. being second with Marie Baumann, and Mr. W. Rumsey third with Merveille de Lyon.

In the amateurs' classes Mr. Fuller, The Vicarage, Bexley, was placed first with twenty-four varieties, single trusses, and the silver medal of the National Rose Society was awarded in addition. This was a good stand, the leading flowers being Alfred Colomb, Dr. Andry, Marie Baumann, Charles Lefebvre, Etienne Levet, Madame Victor Verdier, Charles Darwin, and Marie Rady. Second, G. T. Ongley, Esq., Eltham. Third, A. Harris, Esq., Eltham. Mr. Fuller was also first with twelve varieties having a good lot of flowers, the leading examples being Charles Lefebvre, Madame Hippolyte Jamain, Duchesse de Caylus, Etienne Levet, Etoile de Lyon, Marie Van Houtte, Alfred Colomb, and Mrs. Baker. Second, the Rev. T. N. Rowsell, Eltham. Third, A. Bryan, Esq., Foots Cray. Mr. Fuller also had the best six Tea and Noisette Roses, staging Madame Lambard, Innocente Pirola, Rubens, Souvenir d'Elise Vardon, Anna Olivier, and Catherine Mermet. Second, G. T. Ongley, Esq., with good blooms of Innocente Pirola, Laurette, Perle des Jardins, Madame Berard, Souvenir d'un Ami, and one unnamed. Third, the Rev. J. N. Rowsell.

The bronze medal of the National Rose Society was awarded to the Rev. J. N. Rowsell for the best single specimen Rose not shown in a collection, he having staged Etoile de Lyon in good condition.

Among honorary exhibits, Messrs. Geo. Bunyard & Co. staged cut specimens of old-fashioned Roses, and a very interesting group of varieties of the Moss section.

OXFORD.

THE annual Exhibition of this Society was held on Thursday, the 9th inst., by kind permission of the High Sheriff of Oxfordshire (Lieut.-Col. George Herbert Morrell), in the pleasure grounds of Headington Hill Hall in conjunction with the annual inspection and competition of the Oxford Volunteer Fire Brigade. The Oxfordshire Bee-keepers' Association also had a tent erected at a convenient distance from the Rose Show. The High Sheriff having generously contributed to the Rose Society a sum corresponding with their takings at their last meeting in these grounds on the condition that after three o'clock there should be free admission, it is not at all surprising that the attendance was largely in excess of any former Exhibition. It was computed that no less than 10,000 persons availed themselves of the privilege so graciously accorded to them. The grand display of Roses were arranged in a well-ventilated marquee 140 feet long and 40 feet wide, and presented a charming coup d'œil.

In the most important classes—those open to all England—the competition was keen, and the quality of the flowers generally of a high standard.

In Class 1, for forty-eight distinct varieties, three trusses of each (as it reads in the Society's schedule of prizes), the first prize was awarded to Mr. Charles Turner, Slough, for an effectively arranged stand of very fine blooms, amongst the most noticeable being Lady Mary Fitzwilliam, Heinrich Schultheis, Niphetos, Royal Standard, Marie Baumann, Mdle. Marie Rady, La France, Ulrich Brunner, Duc de Montpensier, Merveille de Lyon, Madame Victor Verdier, Devienne Lamy, François Louvat, A. K. Williams, Etoile de Lyon, Madame Gabriel Luizet, Duke of Edinburgh, and Louis Van Houtte. The second prize was gained by Mr. J. Mattock, New Headington, Oxford, with beautifully fresh-looking flowers, that so wonderfully improved under canvas as to occasion remark. The third prize was awarded to Messrs. Curtis, Sanford & Co., Torquay.

In Class 2, for forty-eight single blooms, Mr. Charles Turner again occupied the leading position with excellent examples of most of his finest varieties mentioned in the former class, with the addition of Madame Lacbarme, Alfred Colomb, Jean Ducher, Boieldieu, Innocente Pirola, Madame Margottin, Edouard Dufour, Comtesse de Nadaillac, and Countess of Bedford. The second prize was taken by Messrs. Curtis, Sanford & Co., and the third by Messrs. George Cooling & Son, Bath, both exhibits containing some very fine blooms. In this class Mr. J. Mattock lost the premier position owing to there being duplicate blooms of Marie Baumann in his stand, which in every other respect was an exceedingly good one.

In Class 3, for thirty-six single blooms, Mr. Mattock was first with a stand of remarkably even flowers, while the second and third prizes were awarded to Messrs. Curtis, Sanford & Co. and Mr. J. Walker, Thame, in the order stated. In Class 4, for twenty-four single blooms, Mr. J. Walker was first, Messrs. Curtis, Sanford & Co. second, and Mr. Charles Turner third. The most noticeable blooms in this class were those of Reynolds Hole, Abel Carrière, Duke of Teck, Dupuy Jamain, Mons. E. Y. Teas, Marie Baumann, Mdle. Marie Rady, Sir Garnet Wolseley, François Michelon, Madame Lacbarme, Duchesse de Morny, Madame Eugène Verdier, Lælia, La France, Maréchal Niel, and Madame Margottin.

In Class 5, for twelve blooms of one variety, dark H.P., Messrs. Curtis, Sanford & Co. were first with a stand of beautiful blooms of Ulrich Brunner, Mr. Charles Turner second with Marie Baumann, and Jno. Bywater Ward, Esq., M.D., Warneford Asylum, Oxford, third with the same variety. In Class 6, for twelve blooms of one variety, light H.P., as in the previous one the exhibits were numerous and attracted the admiration of the great concourse of visitors. Messrs. Curtis, Sanford, & Co., obtained the first prize with Merveille de Lyon, staged in excellent condition. Mr. J. Mattock was second, and S. P. Budd, Esq., Bath, third, both competing with Baroness Rothschild, each stand containing remarkably fine specimens.

In Class 7, for six varieties, nine blooms of each in three stages of growth, Mr. J. Mattock was the only exhibitor, and was awarded the first prize—a special one—given by P. Southby, Esq., Bampton. In Class 8, for twelve varieties of Tea or Noisette (given by the President of the Society, Wm. Wooten-Wooten, Esq.), Mr. J. Mattock was first with a very fine stand of blooms, notably those of Souvenir d'Elise Vardon, Comtesse de Nadaillac, Devoniensis, Jean Ducher, Souvenir de Madame Pernet, Madame Welch, Madame Margottin, and Souvenir de Paul Neyron. The second prize was awarded to Messrs. George Bunyard & Co., Maidstone; amongst their best blooms were those of Devoniensis, Comtesse de Nadaillac, Niphetos, Jean Ducher, Laurette, Louis Gigot, and Madame Hippolyte Jamain. Mr. Charles Turner third.

There were four classes open to all (except growers for sale), each of these being well contested. In Class 9, for thirty-six varieties, distinct, single blooms (given by Lieut.-Colonel and Mrs. Morrell), the first prize was won by T. W. Girdlestone, Esq., Sunningdale, who exhibited a beautiful stand of blooms, especially those of Duchesse de Vallombrosa, A. K. Williams, Comtesse de Nadaillac, Mdle. Marie Rady, Annie Laxton, Mons. E. Y. Teas, Souvenir d'un Ami, and Duke of Teck. The second prize was awarded to S. P. Budd, Esq., and the third to Miss Watson Taylor, Manor House, Headington. In Class 10, for twenty-four varieties, single blooms, given as in the former one, S. P. Budd, Esq., was first, Jno. Bywater-Ward, Esq., M.D., second, and T. Strange, Esq., Aldermaston, third. In Class 11, for twelve varieties, single blooms, the first prize given by the Lord Valentia was gained by Mr. C. Colcutt, Oxford, the second by Mr. W. Narroway, and the third by Mr. A. Stow, Headington. In Class 12, for twelve varieties of Tea or Noisette, the first prize, given by the Treasurer of the Society (John Thomson, Esq.), was awarded to T. W. Girdlestone, Esq., who staged very fine flowers, amongst them were noteworthy specimens of Antoine Mermet, Comtesse de Nadaillac, Innocente Pirola, Madame de Watteville, Madame Lambard, Madame Eugène Verdier, Miss Edith Gifford, Maréchal Niel, Niphetos, Rubens, Souvenir d'Elise Vardon, and Souvenir d'un Ami. The second and third prizes being taken by Miss Watson Taylor and Mr. A. Evans, Marston.

The classes open to amateur members of the Society only were as keenly contested as some of the others, and the exhibits were highly meritorious. In the principal one, Class 13, for twenty-four distinct varieties, single blooms, Mr. A. Evans succeeded in obtaining the premier position, his best blooms being those of Mdle. Marie Cointet, Madame Marie Finger, Thomas Mills, Baroness Rothschild, John Hopper, Madame Victor Verdier, and Mons. E. Y. Teas. Mr. C. Taylor was second, and the Rev. E. Penwarne-Wellings, Stanford Vicarage, Faringdon, third.

At this point the ingress of visitors was so inconveniently numerous as to render it impossible to take note of anything further than the appendix list of prizewinners. Eighteen varieties, single blooms.—First, Mr. A. Evans; second, Mr. Wm. Narroway; third, Mr. C. Taylor. Twelve varieties, single blooms.—First, Mr. E. Thorne, Oxford; second, R. Ramsden, Esq., Chadwick Manor, Knowle, Warwick; third, Rev. H. A. Pickard, Oxford; fourth, Mr. J. Allin, Sandford-on-Thames. Nine varieties, single blooms.—First, Mr. F. Freeman; second, Mr. C. Colcutt; third, Rev. H. A. Pickard; fourth, Mr. H. Poulter, Oxford. For twelve varieties, three blooms of each.—First, Rev. C. Eddy, Bramley Vicarage, Basingstoke; second, Mr. A. Evans; third, Rev. E. Penwarne-Wellings. For six varieties, three blooms of each.—First, Mr. F. Freeman; second, Mr. C. Colcutt; third, Mr. E. Thorne;

fourth, R. Ramsden, Esq. For six blooms of one variety, H.P.—First, Mr. E. Thorne; second, Mr. C. Colcutt; third, Mr. Wm. Narrowway; fourth, Rev. E. Penwarne-Wellings. For six distinct varieties, Tea or Noisette.—First, Mr. F. Freeman; second, R. Ramsden, Esq.; third, Mr. C. Colcutt. For one bloom, H.P.—First, Mr. Wm. Narrowway; second, Mr. C. Colcutt; third, Rev. G. R. Downes, Begbroke, Oxford. For one bloom, Tea or Noisette.—First, Mr. C. Colcutt; second, Mr. F. Freeman; third, Rev. G. R. Downes.—J. B. E.

[The publication of this report was delayed by our correspondent inadvertently omitting to address it to the "Editor." See notice on page 73.]

BIRMINGHAM ROSE SHOW.—JULY 15TH AND 16TH.

THE first Exhibition of Roses in connection with the Botanical and Horticultural Society was a success, very fine blooms being staged, the competition close, and the entries good. The display was admirably staged in the new Glass Hall, and Mr. Latham created an excellent effect by a judicious arrangement of Ferns, Palms, and other plants. In class 1, for thirty-six trusses, the Cranston Nursery Company was first with a capital collection, the finest blooms being Deborah, Marquise de Castellane, a grand Duchesse de Morny, A. K. Williams, very fine; Merveille de Lyon, and Mons. E. Y. Teas. The second prize fell to Messrs. Perkins & Son, nurserymen, Coventry, in whose lot were fine blooms of Duc de Rohan, Violette Bouyer, Mrs. Laxton, Charles Darwin, and a lovely bright-coloured Tea, Souvenir de Thérèse Levet, which was very much admired. Third, Messrs. Paul & Son, Cheshunt Nurseries, who had fine blooms of A. K. Williams, Marshal P. Wilder, Madame Alphonse Lavallée, Queen of Queens, Lady Sheffield, and Duke of Teck. An equal third prize was also awarded to Mr. Charles Turner, Slough, the stand containing fine blooms of Marguerite D'Ombraïn, Merveille de Lyon, Comtesse de Nadaillac, A. K. Williams, and Ulrich Brunner.

For thirty-six blooms there were six entries. Messrs. Paul & Son were first, including splendid blooms of Madame Alphonse Lavallée, Star of Waltham, Countess of Rosebery, E. Y. Teas, Marshal P. Wilder, and A. K. Williams; second prize to the Cranston Nursery Company, Hereford, their finest blooms being Comtesse de Morny, Madame Caroline Kuster, Comtesse de Nadaillac, Prince Arthur, and Madame Willermoz. Third, Mr. Charles Turner, and a fine bloom of King of Bedders was especially noticeable in this stand, also good blooms of Caroline Kuster, François Louvat, and Marie Verdier.

With twenty-four single trusses Messrs. Cranston & Co. were first, and in their stand A. K. Williams, Antoine Ducher, Merveille de Lyon, Duchesse de Morny, Lady Sheffield, Horace Vernet, Lady Mary Fitzwilliam, and Reynolds Hole were all of very fine quality. Messrs. Perkins & Son, Coventry, were a good second, Louis Van Houtte, Mons. E. Y. Teas, Alba Rosea, Etienne Levet, and Merveille de Lyon particularly good.

For twenty-four single blooms the Cranston Company were to the front with Madame Ferdinand Jamain very fine; Lady Sheffield, Duke of Edinburgh, and Horace Vernet and other kinds. Second, Messrs. Paul & Son, Cheshunt, Merveille de Lyon, Souvenir d'Elise Vardon, and Marie Baumann very fine. Third, Mr. H. Frettingham, Nottingham.

In the class for twelve Teas and Noisettes, first, Messrs. Paul & Son, Cheshunt, with a beautiful lot, consisting of Alba Rosea, Madame Cusin, Maréchal Niel, Niphotos, Catherine Mermet, Souvenir d'Elise Vardon, Souvenir d'un Ami, Perle des Jardins, Innocente Pirola, La Boule d'Or, Caroline Kuster, and the Hon. R. Giffard. Second, the Cranston Nursery Company, with Marie Van Houtte, Madame Thérèse Levet, Innocente Pirola, Jean Ducher and others, a fine lot. Third, Mr. Charles Turner, including a grand bloom of Comtesse de Nadaillac and a very fine Madame Lambard.

In the amateur classes for twenty-four trusses, the Rev. H. W. Watson was first, having in his stand fine blooms of George Prince, E. Y. Teas, and Caroline Kuster. For twenty-four singles, A. H. Griffiths, a well-known local grower, was first, and fine blooms of François Michelin, Captain Christy, Marie Verdier, Duc de Rohan, A. K. Williams, and Etienne Levet were in this stand; W. G. Mayhew, Esq., was second, and Mr. Brown of Elmdon Hall, third. For twelve trusses, R. Ramsden, Esq., was first; A. H. Griffiths, Esq., second; Rev. W. J. Williams, third. For twelve blooms Mr. Griffiths was again first, including fine blooms of Marie Verdier, Charles Lefebvre, François Michelin, Rosieriste Jacobs, and Duchesse de Vallombrosa. Second, Rev. W. J. Williams. Third, J. Richards, Esq.

With twelve Teas and Noisettes the Rev. Mr. Williams was first with Marie Van Houtte, Etoile de Lyon, Jean Ducher, Souvenir de Paul Vernet, Anna Olivier, Perle des Jardins, Madame Hippolyte Jamain, Caroline Kuster, Catherine Mermet, Souvenir d'Elise Vardon, Madame Furtado, and a very fine Madame Lambard. Second, R. Ramsden, Esq. Third, Rev. Mr. Watson.

A few good Rose bouquets were shown, and altogether a very good display was made, and it is probable that an annual Rose show will now take place in the Botanic Gardens. Mr. F. Perkins, nurseryman, Leamington, contributed a basket of Pelargonium Volunté Nationale album in fine condition, also capital Rose bouquets and sprays. Mr. Hans Niemand set up a beautiful group of plants not for competition, and obtained certificates for Caladium candidum and Abutilon Thompsoni flore-pleno. Mr. Vertegans contributed a collection of alpine and herbaceous plants, and Mr. Davidson, nurseryman, Hereford, a box of excellent blooms of Merveille de Lyon.

BEDFORD AND BEDS HORTICULTURAL SOCIETY.

THE second annual Exhibition of this Society, which, with the exception of open classes for Roses and cut herbaceous flowers, is limited to exhibitors residing within the county, was held at Bedford on Wednesday, the 15th inst. As regards the Show generally, the exhibits, which chiefly came from amateurs and cottagers, were of fair average merit, but there were no dealers' classes. The vegetable department was the best; fruits and plants, doubtless in consequence of the smallness of the prizes, being almost practically unrepresented by good show specimens in competition. Some good Grapes, however, came from Mr. Landers, gardener to S. Whitbread, Esq., M.P., Southill Park, and some fine Tomatoes from Mr. Allis, gardener to

Major Shuttleworth, Old Warden, and a creditable collection of fruit from Mr. R. Waller, gardener to Jas. Howard, Esq., M.P., took first prize in the gardeners' class for six kinds. The principal prizes for vegetables were well contested, Mr. Waller taking the lead with a fine tray of twelve sorts. He was also first with a collection of six varieties of Peas shown in good colour and size. Mr. G. Vyne, gardener to H. Thornton, Esq., Kempston Grange; Mr. Ellis, gardener to Mrs. Orr, Pemberley, Bedford; and Mr. G. Robinson, gardener to F. Howard, Esq., the Abbey Close, Bedford, were well to the front with fine collections in various classes in this department. Mr. Laxton of Bedford and Girtford, exhibited a series of his new Peas, several of which have been certificated by the Royal Horticultural Society; Evolution, Charmer, Victorious, Walton Hero, and Sensation being especially noticeable.

The open classes, however, for Roses and cut herbaceous flowers constituted the feature of the Show, all the classes being well contested, and it is to be regretted that the number of classes were not more numerous, as Bedford, from its central position and railway facilities, would doubtless command a good competition. Teas especially should not be omitted in the open classes. On this occasion there were no less than eight stands of forty-eight distinct Roses staged in the dealers' classes, open to all England, for the prizes of £10, £5, and £3, the consequence being that several excellent stands had to go away entirely unremunerated, and amongst these the Judges had no little difficulty in discriminating, so generally good were the flowers. Another season the Committee would do well to add open classes for twenty-four blooms singles or trebles, and for eighteen Teas.

For the open forty-eight Mr. B. R. Cant of Colchester was first with grand blooms, being quite up to his champion form. His finest flowers were Merveille de Lyon (now acknowledged to be the best of the white sports from Baroness Rothschild), Lady Sheffield (well shown also in several stands), Duke of Edinburgh, Reynolds Hole, Sultan of Zanzibar, Queen of Queens, Dr. Sewell, Mdle. Prosper Langier, Mdle. Eugénie Verdier, Mrs. Jowitt, Black Prince, Star of Waltham, Marie Verdier, Emilie Hausberg, Madame Crapelet, and Madame Cusin. Mr. F. Cant was second with smaller but fresh flowers, including Duke of Teck, A. K. Williams, Annie Laxton, Lady Sheffield, and Camille Bernardin. Messrs. J. Burrell & Co., Cambridge, came very close for third with well-coloured blooms, the most noticeable being La Boule d'Or (very fine), Marquise de Castellane, John Hopper, A. K. Williams, Star of Waltham, Pride of Waltham, Dr. Andry, Madame P. Langier, Duke of Edinburgh, Madame V. Verdier, and Madame Montet. Messrs. Paul & Son (who were also showing concurrently at Birmingham); Mr. J. House, Peterborough; Mr. George Prince, Oxford; Mr. W. Rumsey, Waltham Cross; and Mr. James Sheppard, Bedford, also staged well in this class. Mr. House also showed a beautiful box of William Allen Richardson, and Mr. Laxton a box of his pretty and floriferous new Rose Bedford Belle, as well as some good boxes of various Roses not for competition.

In the class for twenty-four distinct trusses, open to amateurs of all England, the competition was strong and spirited, the Rev. J. H. Pemberton of Havering-atte-Bower, Essex, taking the cup with, amongst others, a splendid Niphotos and fine flowers of Louis Van Houtte, Ulrich Brunner, H. Vernet, Magna Charta, Baroness Rothschild, Madame Lambard, Beauty of Waltham, and Madame H. Jamain. Mr. S. P. Budd of Bath was second, having Princess of Wales, Lady Sheffield, Countess of Oxford, and Comte de Raimbaud; Mr. Alfred Slaughter, Steyning, coming third, and the Rev. E. L. Fellowes, Wimpole Rectory, Royston, receiving commendation for an approximately fine stand. For twelve distinct trusses, open to amateurs of all England, the Rev. J. H. Pemberton was again first; Mr. E. B. Lindsell of Bearton, Hitchin, second; and Mr. Budd third. For twenty-four blooms (eighteen varieties) in the local amateurs' class, the Rev. W. H. Jackson, Stagsden Vicarage, Bedford, was first, Mr. Vyne second, and Mr. Ellis third. For twelve ditto Mr. Jackson was again first, as also for twelve Teas; and for nine blooms in the class for amateurs not employing a gardener Miss Thomas, The Cottage, Bletsoe, and for six ditto Mr. G. Fisher, Warden, were respectively first.

Hardy herbaceous and bulbous flowers were well shown in the open class, Messrs. Burrell & Co. of Cambridge, who seem to be making these a specialty, having a very attractive display, to which first honours were awarded. Mr. Laxton here also had well-selected and showy blooms for second, Messrs. Horton and Sheppard of Bedford being respectively third and fourth with good displays. With more open classes a good general show would soon be established in Bedford.

WIRRAL ROSE SHOW.

THIS Society, which in its liberality and desire to encourage Rose-growers is exceeded by none and equalled by few, has never been very fortunate in the weather when its shows have been held, and this year it has been specially; not that the day was as bad as some have been on which the shows have been held, but because up to this time every Rose Society that I have attended and whose doings I have heard of, have been favoured with fine weather, and it seemed especially trying to find that the rain so much longed for and desired by everybody, should have come on a day on which fine weather was so much desired. The Exhibition was held, too, this year in the open, under a very handsome tent erected on the grounds of Hamilton Square, Birkenhead. At its first beginning it was held in the Park at Birkenhead, but that proved unsuccessful in a financial point of view, and so it was determined to remove it to Liverpool, and for two years it was held in St. George's Hall, a splendid room no doubt, but where the light was wretchedly bad. The Liverpool people held aloof from it, and each year it proved a failure as far as the sinews of war were concerned, and so it was determined again to hold it at the Cheshire side, and to have it under a tent. The grounds of Hamilton Square had never before been used for any such purpose, and it was therefore the more to be regretted that the weather was not favourable; however, it cleared off somewhat in the afternoon, and a considerable number of visitors attended.

The Exhibition itself was an excellent one, and the local exhibitors especially are to be congratulated on the manner in which they have improved in the culture and setting up of the Roses. The amateur portion of the Exhibition was decidedly superior to the professional, and with the full

recollection of the box of thirty-six which Mr. Jowitt once exhibited here, I question very much if a better box of thirty-six was ever set up here better than that of Mr. T. B. Hall; in fact, his Roses all through were superb, and were evidently so recognised by the Judges, as he swept off the honours in every class in which he exhibited. He was close at home, and when one saw the splendid condition of his plants any wonder ceased that he should have been enabled to exhibit in such good form. There were, for the first time this year that I can remember, some blooms which stood out prominently above all others as Roses to be remembered. There was a Marie Van Houtte in Mr. Garnett's, an Abel Carrière in Mr. Grant's, a Souvenir de Thérèse Levet in Mr. House's, and a Madame Lambard in Mr. Claxton's stand, which I have no hesitation in saying were the very finest examples of those Roses I have seen this year. It was only the evening before that a thoroughly good rosarian said to me that Abel Carrière was not an exhibition Rose. I was pleased to bring him to book and to show him that if this class had been permitted to enter into competition for the best H.P. in the Show it would have carried it off. Teas are largely patronised in Wirral, and many amateurs grow them exceedingly well; so much so, that one of its members, Mr. Claxton, carried the banner of Wirral to Canterbury on June 28th, and carried it out triumphantly, beating Messrs. Cant, Paul, and Prince. It might have been expected, then, that here Teas would be in great force, and so they were. There were several classes for them, and the stands exhibited by Mr. T. B. Hall and others, but especially the Larchwood Teas, were remarkably fine.

There was not a large competition for the basket of Teas, Noisettes, and Hybrid Teas for the National Rose Society's medal, but three excellent baskets were set up by Mrs. Garnet, Miss Hall, and Mrs. Claxton, who took the prizes in the order named. Each had their peculiar style. Mrs. Garnet's was very beautiful, and that of Miss Hall showed an artistic character which, had a few gaps been filled up, would have run it very close.

In the class for seventy-two, distinct, Mr. F. Cant of Colchester was first with the following flowers—Heinrich Schultheis, Earl of Pembroke, La France, Dr. Sewell, Reynolds Hole, Comtesse de Paris, Duchess de Vallombrosa, Fisher Holmes, Baron Gonella, Jean Souper, Lady Sheffield, Beauty of Waltham, Madame Angèle Jacquier (Tea), Antoine Ducher, Comtesse de Nadaillac (Tea), Alexandre Dupont, John S. Mill, Catherine Mermet (Tea), Sultan of Zanzibar, Marquise de Castellane, Harrison Weir, Adam, Duc de Wellington, Sonvenir d'Elise (Tea), Pitord, Paul Neyron, Admiral Seymour, Mrs. Charles Wood, Madame Bernardin, Dupuy Jamain, Lady Mary Fitzwilliam, Madame Marie Rady, Merveille de Lyon, Marie Louise Pernet, Duke of Edinburgh, Dr. Andre, Louis Van Houtte, Comtesse d'Oxford, Alfred Colomb, Madame Gabriel Luizet, Prince Camille de Rohan, Madame Charles Crapelet, Abel Carrière, Pride of Waltham, Marie Baumann, Madame Hippolyte Jamain, Madame Victor Verdier, Captain Christy, Ulrich Brunner, Marie Finger, Charles Darwin, Madame Marie Cointet, John Bright, Marie Van Houtte, Madame George Paul, Star of Waltham, Alfred K. Williams, Marie Vardier, Baron de Bonstettin, Baroness Rothschild, Mrs. Jowitt, Maréchal Niel, Pierre Notting, Etienne Levet, Horace Vernet, Duchesse de Morny, Duchess of Bedford, Comtesse de Chabillant, Duke of Connaught, Queen of Queens, and Annie Wood. Messrs. Paul & Son were second, and the Cranston Company third. In the class of thirty-six, three blooms of each, Messrs. Paul & Son were first with Charles Darwin, Madame Eugène Verdier, Sénateur Vaisse, Devoniensis, Abel Carrière, Devoniensis, Maréchal Niel, A. K. Williams, Pride of Waltham, Captain Christy, Edouard Andre, Berard Corate, Comtesse de Nadaillac (Tea), Duke of Teck, Innocente Pirola, Marie Baumann, Comtesse d'Oxford, Grandeur of Cheshunt, François Michelon, Dr. Andry, Catherine Mermet (Tea), Niphetos (Tea), Reynolds Hole, Countess of Rosebery, Marshal P. Wilder, La France, Mons. E. Y. Teas, Star of Waltham, Souvenir d'Elise (Tea), Lady Sheffield, Merveille de Lyon, Paul Neyron, Charles Lefebvre, Camille Bernardin, Ulrich Brunner. The Cranston Co. were second, and Mr. F. Cant third. In Class 3, for thirty-six varieties, Mr. George Prince was first with Comtesse d'Oxford, Duke of Connaught, Reynolds Hole, Grandeur of Cheshunt, Prince Arthur, Alba Rosea, Madame Sophie Fropot, Louis Van Houtte, Lady Sheffield, Annie Wood, Maréchal Niel, Duchess of Bedford, Souvenir de Paul Neyron, Madame Victor Verdier, Ulrich Brunner, Sultan of Zanzibar, Pride of Waltham, Xavier Olibo, Marie Finger, Sénateur Vaisse, Baroness Rothschild, Eclair, Niphetos, Marie Baumann, Duke of Teck, Charles Darwin, Perle des Jardins, Prince Camille de Rohan, Hon. Edith Giffard, Harrison Weir, Alfred Colomb, Comtesse de Nadaillac, A. K. Williams, Star of Waltham, Merveille de Lyon, and Horace Vernet. Messrs. F. & A. Dickson, Chester, were second, and Mr. J. House, Peterborough, third. In Class 4, eighteen varieties, three blooms of each, Mr. George Prince was first with Madame Lambard (Tea), Comtesse de Nadaillac, Louis Van Houtte, Innocente Pirola, Prince Camille de Rohan, Comtesse d'Oxford, Prince Arthur, Hon. Edith Giffard, Marie Baumann, Maréchal Niel, Horace Vernet, Alfred Colomb, Etoile de Lyon, Duke of Edinburgh, Reynolds Hole, Niphetos, Xavier Olibo, Merveille de Lyon, and A. K. Williams. Messrs. James Dickson & Son were second, and Mr. House third. In Class 5, for eighteen Teas or Noisettes, Mr. J. House, Peterborough, was first with Madame Lambard, Jean Ducher, Comtesse de Nadaillac, Niphetos, Marie Van Houtte, Comte de Paris, Laurette, Innocente Pirola, Souvenir de Thérèse Levet, a magnificent bloom; Etoile de Lyon, Catherine Mermet, Souvenir d'Elise, Perle des Jardins, Belle Lyonnaise, Devoniensis, Marie Guillot, Maréchal Niel, and Alba Rosea. In class 6, for twelve varieties of new Roses, Messrs. Paul & Son were first with Benoit Comte, Madame Norman-Neruda, Ellen Gordon, Lord F. Cavendish, Heinrich Schultheis, Duke of Albany, Pride of Reigate, Queen of Queens, Mons. Francisque Rene (?), and Maréchal P. Wilder; and the Cranston Co. were second.

We now turn to the amateurs, where unquestionably the best blooms in the Show were to be seen. In Class 36 Mr. T. B. Hall was easily first with a stand in which there was not one indifferent flower. They were all fresh, bright, and clean, and consisted of Marie Finger, Louis Van Houtte, François Michelon, Marie Rady, Mrs. Jowitt, Merveille de Lyon, Etienne Levet, La France, Charles Lefebvre, Capitaine Christy, Duke of Teck, Marie Baumann, Duke of Edinburgh, Violette Bouyer, Sir Garnet Wolseley, Jules Finger, Lady Mary Fitzwilliam, Comtesse de Paris, Souvenir d'Elise, Marie Verdier, Xavier Olibo, Marquise de Castellane, A. K. Williams, Camille de Rohan, Dr. Andry, Madame Sophie Fropot, Charles

Darwin, Beauty of Waltham, Prince Arthur, Alfred Colomb, Baroness Rothschild, Général Jacqueminot, Madame Lacharme, Le Havre, and Duchesse de Vallombrosa. The Rev. J. H. Pemberton was a good second; Mr. W. J. Grant, Ledbury, third; and Dr. Budd, Bath, fourth. In the class for twenty-four the Rev. Lionel Garnet, Christleton Rectory, near Chester, was first with Duchesse de Morny, François Michelon, Merveille de Lyon, Madame Nachury, Madame E. Verdier, Marie Finger, Ulrich Brunner, J. S. Mill, Duke of Edinburgh, François Louvat, Le Havre, Marquise de Castellane, Baroness Rothschild, Etienne Levet, Mabel Morris, Dupuy Jamain, Capitaine Christy, Marie Verdier, Duchess of Vallombrosa, Annie Wood, La France, Marie Van Houtte (a magnificent bloom), A. K. Williams, and Heinrich Schultheis. Mr. A. Tate, Wootton, was second; Mr. J. E. Backhouse, Darlington, third; Mr. G. Berrington, Ludlow, fourth. In Class 9, for twelve varieties, Mr. T. B. Hall was again first with fine blooms of Madame Hippolyte Jamain, Dr. Andry, Marie Finger, Marie Baumann, Marquise de Castellane, Louis Van Houtte, Etienne Levet, La France, Sir Garnet Wolseley, Alfred Colomb, Capitaine Christy, and François Michelon. The Rev. J. H. Pemberton was second, and Dr. Budd third. In Class 11 Mr. T. B. Hall was again first with twelve blooms of Marie Baumann, twelve of any dark Rose, and again in Class 12 for twelve blooms of any light Rose with Capitaine Christy. In Class 13 for six blooms of new Roses he was also first with Merveille de Lyon, Princess of Wales, Thérèse Levet, Queen of Queens, Hon. Edith Giffard, and Lady Mary Fitzwilliam. In Class 14, best box of twelve (six Teas and six Hybrid Perpetuals) he was also first with Horace Vernet, Etoile de Lyon, A. K. Williams, Innocente Pirola, Caroline Kuster, La Havre, Marie Van Houtte, Charles Lefebvre, Jean Ducher, Madame Charles Crapelet, and Madame Margottin. In Class 15, six blooms of Teas or Noisettes, Mr. T. B. Hall was also first with Marie Van Houtte, Jean Ducher, Souvenir d'Elise, Mons. Furtado, Francisca Kruger, and Etoile de Lyon. In Class 16, best basket of Teas, Noisettes, and Hybrid Teas Mr. Lionel Garnet of Christleton Rectory was first with a beautifully fresh basket, carefully arranged, and Miss Hall of Larkwood, Rockferry, second, and Mrs. Claxton third.

In Class 17, for amateurs in Lancashire and Cheshire, Mr. T. B. Hall was again to the front with a beautiful box of twenty-four, including La France, A. K. Williams, Captain Christy, Le Havre, Madame Sophie Fropot, Louis Van Houtte, Merveille de Lyon, Duke of Edinburgh, Camille Bernardin, Thérèse Levet, Comtesse de Camanto, Jules Finger, Sir Garnet Wolseley, François Michelon, Rosieriste Jacobs (very good), Marie Finger, Lord Macaulay (a very fine bloom), Dr. Andry, Marie Verdier, Beauty of Waltham, Lady Mary Fitzwilliam, Marie Baumann, Madame Charles Crapelet, and Charles Lefebvre. The Rev. Lionel Garnet was second, Mr. J. H. Angus third, and Mr. Tate fourth. In Class 18 for eighteen varieties Mr. J. H. Angus was first with Etienne Levet, Duke of Wellington, Captain Christy, Dupuy Jamain, Baroness Rothschild, Charles Lefebvre, Mrs. Charles Wood, Mlle. Eugénie Verdier, Marie Baumann, La France, Mrs. Baker, Victor Verdier, Fisher Holmes, François Michelon, Louis Van Houtte, Duchesse de Caylus, Madame Gabriel Luizet, and Auguste Rigotard. Mr. W. E. Hall was second, Mr. W. Newmann, Allerton, third, and J. C. Churton fourth. In Class 19, for twelve single blooms, Mr. T. Hargreaves was first with Captain Christy, J. S. Mill, Madame Gabriel Luizet, Charles Lefebvre, Duchesse de Morny, Marie Baumann, Dr. Andry, General Jacqueminot, Louis Van Houtte, François Michelon, Etienne Levet, and Baroness Rothschild. Mr. Watson was second, Mr. Charles Hill third, and Mr. W. Draper fourth. In Class 20, for six single blooms, Mr. Joseph Armstrong, Lower Bebington, was first with Merveille de Lyon, Fisher Holmes, Duke of Teck, Captain Christy, Baroness Rothschild, and Marie Baumann. Mr. Bulley was second and Dr. Bell, New Brighton, third. In Class 21, for twelve Teas or Noisettes, Mr. Claxton was first with Innocente Pirola, Jules Finger, Niphetos, Adam, Christophe, Madame Angele Jacquier, Madame Willermoz, Souvenir de Thérèse Levet, Caroline Kuster, Madame Cusin, Madame Lambard, Comtesse de Nadaillac, and Francisca Kruger. Mr. T. B. Hall was second. In class 22, for six blooms, Teas or Noisettes, Mr. W. E. Hall was first with Jean Ducher, Devoniensis, Caroline Kuster, Souvenir d'un Ami, Perle des Jardins, and Marie Van Houtte. In class 23, for three blooms of Teas, Mr. Walton was first with Madame Thérèse Levet, Madame Lambard, and Gloire de Dijon. In class 24, for twelve blooms, six Hybrid Perpetuals and six Teas, arranged with Maidenhair Fern, Mr. T. B. Hall was first with Madame Margottin, Le Havre, Niphetos, Prince Camille de Rohan, Francisca Kruger, Prince Arthur, Madame Willermoz, Général Jacqueminot, Etoile de Lyon, Fisher Holmes, Marie Van Houtte, and Charles Darwin. The prize for the best Hybrid Perpetual bloom was awarded to Mr. T. B. Hall for a grand bloom of A. K. Williams, and for the best Tea for a splendid flower of Madame Lambard to Mr. E. Claxton.

There are a few things to be noticed ere I conclude this report. One is the very great improvement that has taken place in the local exhibits. There were none of them that could be even called indifferent, and the setting up was vastly better than in former years. Another is the manner in which Mr. T. B. Hall swept the board. Those who have seen his garden will not wonder at this. I have seen most Rose gardens, both those of amateurs and nurserymen, and I never saw such plants. It is not the number that he grows, for many of those who competed with him grow twice and three times the number, but it is entirely attributable to the splendid condition of his plants and his unceasing and intelligent care of them. I may have somewhat to say of these plants by-and-by, and then one sees how much attention is given to Teas. They are deservedly great favourites in Wirral, and each year sees the number of exhibitors winning. The Show was altogether a success, and not the least pleasing feature was that £22 was obtained for the Childrens' Hospital by the sale of Roses kindly sent in for the purpose.—D., Deal.

THE EXPORT TRADE IN APPLES.—The following facts and figures in regard to the export trade in Apples from this country are given by the *Irish Farmers' Gazette* from the annual Apple circular of Lombards, Sons:—The total exports for the season of 1884-85 from the United States and Canada have been 787,785 barrels. For the season of 1883-84 the total exports were 81,532 barrels; 1882-83, 395,594 barrels; 1881-82, 239,252 barrels; 1880-81, 1,328,806 barrels. The shipments have been

distributed as follows:—From Boston, 309,806 barrels; New York, 256,332 barrels; Portland, 91,483 barrels; Montreal, 85,479 barrels; Halifax, 36,073 barrels; Annapolis, 8,612 barrels. Of the total exports, 512,213 barrels were shipped to Liverpool; 117,947 barrels to London; 141,035 barrels to Glasgow; 2,244 barrels to Hull; and 14,346 barrels to various ports. Boston shipments were distributed as follows:—To Liverpool, 256,624 barrels; Glasgow, 19,969 barrels; London, 29,813 barrels; Hull, 1,944 barrels; West Hartlepool, 841 barrels; Christiana, 375 barrels; Bergen, 130 barrels; Gothenburg, 10 barrels; Antwerp, 100 barrels. The largest weekly shipment was November 29th, 28,286 barrels from Boston and 21,498 barrels from New York. The season opened August 16, 1884, and comprised 39 weeks. Of the various steamship lines the Warren line made 27 sailings to Liverpool and carried 155,585 barrels; Leyland line, 37 sailings to Liverpool, 56,151 barrels; Cunard line, 23 sailings to Liverpool, 55,317 barrels; Allan line, Glasgow, 19 sailings, 16,518 barrels; Furness line, London, 12 sailings, 14,957 barrels; Anchor line, London, 9 sailings, 5,268 barrels; Anchor line, Glasgow, 4 sailings, 3,451 barrels; Wilson line, Hull, 5 sailings, 2,459 barrels; Red Cross line, Antwerp, 1 vessel, 100 barrels.

LILIUM CANDIDUM.

DURING the past spring, and especially during Easter week, I noticed large quantities of the above old Lily in excellent condition in the principal florists' shops about Brighton. The number of flowers on each spike ranged from four to thirteen, and very chaste and beautiful they looked. The flowers are used in wreaths and bouquets, and the larger spikes for arranging in tall vases, and I need scarcely say how telling they appeared when in such a position. On inquiry I was given to understand that the following is the course of treatment followed. During September the bulbs are placed singly into 5-inch pots, and are plunged in cocoanut fibre refuse in the open air until they are well rooted and commence growing, when they are removed to a cold frame for the winter and protected from frost. Early in the new year the first batch is introduced into an intermediate temperature, when they advance into bloom; other batches are introduced from time to time to keep up a succession. As the buds open the anthers are removed, as the pollen would disfigure the flowers if moved about, and the removal adds to the appearance of the blooms. As the spikes are cut the old plants are attended to, when they bloom quite as freely the following season, but it is best to introduce a few fresh ones every season, as after the second season they should be planted out to recruit their energies.—A. YOUNG.

AMONG THE RANGES OF NEW ZEALAND.

(Continued from page 380, last vol.)

As we came down the northern side of Mt. Torlesse we found a valley hemmed in with mountains, but as we had six miles of broken country to get over before dark we could not explore it thoroughly. We collected a new species of *Celmisia*, *Senecio Lyalli*, one of the best of New Zealand Flora, and other rare plants. In our descent we took a spur which ran to the west side of our camp, and collected an Alpine *Polypodium* with fronds quarter to one inch long, *Raoulia grandiflora* in full flower, also the *Montia*, an Alpine succulent growing on a shingle slip, with several varieties of *Ranunculus*. We came down the shingle slides at railway speed, and reached camp at nine o'clock, tired and hungry. Dinner had to be prepared, specimens arranged in drying paper, so that it was eleven o'clock before we could indulge in the sleep which "very much delights" the wearied Alpine climber. On Saturday morning the plants were packed and sent to Christchurch by the coach which came up from the West Coast at twelve o'clock.

On our return to camp from the pass we climbed a spur some 500 feet, and to our great delight found *Notothlaspi rosulatum* growing in pure shingle. The leaves are 1 to 1½ inch long, forming rosettes; the flower spikes which rise 5 inches out of the centre are creamy white and have the perfume of Orange blossoms; we went down on our knees to inhale the sweet odour. The discovery of this rare plant stimulated our exertions, for it was one of those which we were anxious to obtain. We decided to collect a couple of specimens to dry and to leave the remainder till Monday morning. We thoroughly searched the vicinity for more, but were unsuccessful, thus proving that the plant is very local, growing in places peculiar to itself. We reached camp about three o'clock, and started for Lake Lyndon to try and reach the head of it. We spent much time on one spur which ran down to the Lake, but found nothing new. We collected some small plants of *Aciphylla Lyalli* and *Carmichaelia*, and after following the road some three miles we turned back to camp, as the weather was threatening. Shortly afterwards fine rain set in, which wet us through, but having made a good fire we dried our clothes and cooked our dinner of porridge, bacon, and damper. We had filled every available space in the tent with fuel to keep it dry. Specimens were then arranged, our blanket bags were again brought into use; and after a yarn of adventure from the senior of the party we went to sleep, to be awakened next morning by the wekas prowling about the tent.

At seven o'clock we started in a westerly direction, but we had to take bearings of the different points around, a thick fog rendering it necessary to proceed with caution. We passed some fine patches of *Hypolepis millefolia*, the brightest and most graceful of Alpine Ferns. At 4000 feet we found a *Lycopodium* growing under a *Dracophyllum* scrub. Working up a valley fringed with queer shaped rocks we noticed a cluster which looked a likely place for plants. Having reached the top, after a somewhat hazardous climb among loose boulders to fall at a touch, we were rewarded by finding a *Filmy Fern*, *Hymenophyllum villosum*, growing in the fissures of the rock. The Mountain Totara was growing over it, screening it from the burning rays of the sun and the sharp cutting winds. We stripped off the Totara and obtained patches 1 foot square of this rare Fern, which, from its posi-

tion, must be frozen hard in winter. The fronds are 1½ inch long, much crowded, and of a dark green colour. Having collected a good quantity of this hardy *Filmy* and a few *Sheep-backs*, we pushed on for the valley on the north-western side of the mountain. The fog had now cleared off, and we soon reached the top of a spur, which ran down to Porter River. We could see by the look of the country that four or five hours' work was before us, among broken rocks, shingle slides, and small grassy slopes. Here was a deep gully once torn by glaciers and avalanches, with a mass of jagged-looking rocks scattered around, interspersed with dangerous slides of loose stones, boulders, &c. High above us we could see rocks covered with the *Edelweiss* in full flower, and it was perilous work climbing up for them, as huge masses of rock were ready to fall at a touch. But in the fissures of the rocks was something of more botanical interest than the *Edelweiss*—the long-sought *Notothlaspi notabilis*, only one specimen having hitherto been found by Mr. Buchanau. The plant is much larger than *N. rosulatum*, the leaves are a brighter green, and the rosette measured 4 inches across. This variety did not show any indication of bloom. The roots had penetrated deeply into the rocks, and we had no little trouble in getting them out uninjured. We left several plants to propagate, as we were afraid it might be exterminated, being very local. On the other side of the gully we came across a fine patch of *Forstera sedifolia*, a rare *Cotula*, *Ozothamnus microphylla*, and *Veronica epacridea* in full flower.

After some further explorations we started for camp, as it was getting dusk, and we had some six miles of rough country to go over. It was a Barmecide feast with us that night, our provisions having run out, but we scraped up enough meal to make a billy full of porridge. We then arranged our specimens and packed the plants in readiness for an early start for Springfield next morning. It was, however, mid-day on Monday before we commenced the descent of Porter's Pass, and being heavily loaded with our swags, we were doomed to see the train moving out of the station at Springfield after a sixteen-mile tramp from the camp on Mt. Torlesse. We had therefore to stay in Springfield all night, and left for Christchurch by the early train, arriving home at 10 A.M. on Tuesday, after an adventurous and successful tour of seven days among the ranges.—W. N. ADAMS.



KITCHEN GARDEN.

Potatoes.—There is no sign of disease, and the tubers are very numerous and of excellent quality. Some varieties are useless for table, and only good for exhibition. As soon as the summer crops are ripe they may all be taken up and stored in a dark place, as the ground they have been occupying should be at once filled with winter greens, and where it is not convenient to dig them the stems should be put up on the tops of the ridges and the greens dibbled into the hollows between the rows. Where it is desired to sow any crop on the Potato ground, dig them up, level the soil, and then it is ready for sowing.

Endive.—A good sowing of this must be made. The Broad-leaved Batavian is the best of all. Where ground is plentiful, sow the seed very thinly in rows 15 inches apart. When the plants can be conveniently handled thin them out to 8 inches apart, and plant those drawn up elsewhere. Those allowed to remain will become of use first, and the transplanted ones will follow. Where space is limited no permanent sowing should be made, but a few short rows may be put in close together, and as soon as the plants are large enough to get hold off, draw the most forward out and make new plantations. South borders and sheltered positions are very suitable for late autumn and winter Endive.

Autumn Lettuce.—Summer varieties may still be sown, as they will come in beautifully in October, but they will not last long then if the weather is unfavourable; and to make sure of a supply a pinch of seed of such kinds as Brown Dutch, or Hick's Hardy White should be put in. Treated as advised for Endive above they will succeed admirably.

Globe Artichokes.—Those have been unusually fine this season, the heads very numerous, and very large and juicy. We have given up the Purple, as it was too small, and only grow the Green Globe. Where the plants have ceased to produce good heads and show signs of losing their foliage, cut off all the fruiting stems, clear away the dead leaves, mulch heavily between the rows with rich manure, drench them with water, and a capital crop of tender young heads will be thrown up in autumn. This is the best way to secure a crop until cut off by frost.

Winter Turnips.—Sow these largely. Chirk Castle is a fine hardy old sort with a black skin and a white interior. Carter's Golden Rose is the finest of all the yellow ones. They require moderately rich soil, plenty of room, and an open position. Eighteen inches from row to row is not too much. Sow the seed thinly, and thin the plants to 10 inches or 1 foot apart, as they will not bulb in autumn if crowded overhead with leaves.

Late Peas.—These are very valuable, especially in October, and where the young crops show any indication of suffering from drought water them thoroughly, and mulch along the edges of the rows with old half-decayed material from the lawns if no better manure can be obtained. Where any of those coming into pod or bloom are dry at the root and the foliage is rather yellow in colour, treat them in the same way as the late ones. Liquid manure is best for them, and when we cannot get this from the cattle sheds or dung heap we dissolve a small handful of guano in each of our 4-gallon watering pots and drench them with this. Gather Pea seed which is ripe before the birds have the chance of opening the pods. Clear

away all old haulm, and use the stakes which have been at the early ones to support the late crops.

Celery.—This will now take large quantities of water. Over-dryness at the roots is sure to cause it to run to flower. Planting out the crops should be completed as soon as possible. White Plume and the Turnip-rooted variety should not be put in trenches, but on the level. The earliest crops, which are now a good size, should be earthed up. Do not allow a particle of soil to fall into the centres of the plants. Clear off a few of the short outside leaves, and tie the plants up with a piece of matting until earthing up has been finished. Before earthing, the plants should be thoroughly watered, and then they will require little or no more, as the bulk of soil used in earthing will keep the roots cool.

Winter Parsley.—This is important there should be no deficiency of it. Make a good sowing now in a position where part of the plants can remain, and the thinnings may be planted elsewhere. Parsley is not so liable to be attacked by the grub in autumn as during the summer, and in places where it cannot be grown with any great success in summer it may frequently be had in large quantities and in prime condition by sowing now.

Leeks.—Where these are still in the seed rows or bed get them out as soon as possible. They are not particular as to position, but they must have rich soil.

Autumn Onions.—These have gained a large size, and as some of them are beginning to split, the whole will be drawn up and laid out to dry in the sun. The split ones will be used at once, and the whole will be sent to the kitchen before the spring-sown ones are used. Water all crops which are suffering much through drought. Keep the hoes going, and give no quarter to weeds, especially those likely to seed. Clean flower pots and smart glass houses are very desirable at this season, but kitchen gardens overrun with weeds are not creditable, and a handy man with his hoe on a sunny day would destroy the weed crop on some acres of land.

FRUIT FORCING.

VINES.—*Early-forced Vines*.—Where early-forced thin-skinned Grapes are preferred to thick-skinned varieties that have been kept in the Grape-room, the wood of the Vines will now be getting brown and hard, if, indeed, it is not quite ripe. The foliage being clean and healthy, a dry warm atmosphere with abundance of air by night will insure the perfecting of the buds, as upon this depends the production of compact closely set bunches, which colour and finish better than those from badly ripened wood. The laterals should be kept well in hand if the Vines are in good health, but if weak they may be allowed to extend. An occasional syringing will be all that is necessary to keep the foliage free from insect pests.

Renovating Early Vines.—Work of this kind should be taken in hand without delay. If the roots have the run of outside and inside borders, one of them may be taken out and fresh compost supplied without running any risk as to the loss of the next year's crop. It is important that the work be quickly and carefully performed, and the house kept close, warm, and shaded until new growth commences.

Early Vines in Pots.—Those intended for early forcing may be removed to a south wall for a time, securing the canes to the wall as a protection against wind; but if they occupy a house with moveable roof-lights, the latter may be drawn down to an extent that will favour the healthy maturation of the wood and due ripening of the foliage, without producing a shock so fatal to the fruiting of otherwise well-grown Vines in pots.

Young Planted-out Vines.—Vines planted this spring should be encouraged with heat and moisture until they have filled the space allotted to them. A free lateral growth suits them best, as the object the first year is the formation of roots and a few well-ripened buds near the base for pruning back to, these being essential for affording sturdy short-jointed growths in the coming season. If supernumeraries are planted for affording fruit next year, they should have the laterals closely pinched, especially those from the joints, which are to afford fruit from the eyes there situated next season, it being important that the foliage have free exposure to light and air for the thorough maturation of the buds, but the laterals above next year's pruning wood may be allowed extension, as it will facilitate root-action and be of benefit to the crop another season.

Grapes under Sudden Changes of Weather.—Sudden changes from dull wet weather to bright sunshine are very trying to Vines in all stages of growth, particularly to Lady Downe's, Muscats, Alicantes, and other late varieties that are liable to be scalded, and are equally unfavourable to the preservation of ripe Grapes, which soon lose colour when fully exposed. Where it is necessary to keep black Grapes for a long time after they are ripe, a little shade over the roof-lights on bright days will be of great service provided the wood and foliage are not deprived of the benefit of light when the sun is off the roof. Where this cannot be done some pilchard nets or a double thickness of herring nets thrown over the lights loosely will answer the purpose, as they do not exclude too much light, and may remain on until the Grapes are cut. The only safeguard against scalding is a warm atmosphere at night, with free ventilation by day, especially in the early part.

Vines Swelling their Crops.—Every attention must be given to Grapes swelling, especially where the crop is heavy, seeing that the inside borders have sufficient tepid liquid manure, not less in temperature than the mean of the house. If the weather be dry outside borders will require similar attention, but if the rainfall be good all that is necessary is mulching with old manure. If the Grapes are well advanced, and the ripening is not wished to be accelerated, admit abundance of air through the early part of the day, closing with sufficient sun heat to raise the temperature of the house to 90° in the afternoon, and give a little night air. Keep

the house well supplied with ammonia by the introduction of fresh horse droppings, not in great quantities, but little and often, and ply the syringe on all available surfaces at closing time; but avoid its careless use, as it is a great blemish to spot the Grapes. Red spider must, under any circumstances, be kept in check, and if it appears there is no better remedy than the tedious one of sponging. Sulphuring the pipes whilst hot, though a certain remedy, must be done with judgment, as the skin of some Grapes is readily injured by its fumes.

FIGS.—*Early-forced Trees*.—Trees that have been several months in bearing will need great perseverance in the application of water through the syringe to the foliage in order to keep down insect pests, and even then red spider and scale will gain a hold, particularly where the roots have not been liberally supplied with stimulating food. When this is the case, and succession houses are giving a supply, no time should be lost in throwing open the ventilators by day and night, exposing the foliage to refreshing showers by drawing off the lights on all favourable occasions. Warm thunder rain is, perhaps, more cleansing than any other—at least, good rains benefit both the roots and foliage by passing through every part of the plunging material, which is matted with thick fleshy roots.

Succession Houses.—The second crop will be considerably advanced, and will require liberal thinning. Syringe twice a day. The mulching must be kept constantly moist for the present, maintaining a brisk growing temperature from solar heat after closing until the fruit shows signs of ripening, when a drier atmosphere by night must be afforded; but there must not be any great reduction of the moisture by day. Attend steadily to the stopping and tying, avoiding overcrowding the young shoots, as these, to give fine Figs, must be vigorous and allowed to grow up to the glass, so as to have all the warmth and light possible.

Young Trees in Pots.—Those raised from cuttings or eyes must be potted without delay, so as to secure a well-matured growth. Young early-started pot trees intended for forcing for the first time should have the growths ripened before they are taken outdoors for a season of rest, and when taken out a warm dry corner should be selected for plunging them in. If the roots have passed into the plunging material they should be cut through by degrees.

PLANT HOUSES.

Rhodanthes.—These are amongst the most useful annuals in pots, and should be extensively grown for purposes of decoration. They are not only useful early in the season, but through the whole summer, and specially so during the autumn months. Sow seed at once for plants to commence flowering about the middle of October, and these will continue until *Corysanthemums* are plentiful. Pots 5 inches in diameter are the most serviceable size in which to sow the seed. After nearly filling them with a compost of good loam, one-seventh of manure and sand, a little leaf mould may with advantage be added. Cover the seed lightly with soil, well water them, and then stand them in a frame until germination has taken place. The frame in which they are placed should be shaded to prevent farther watering until the young plants appear. After the seedlings are well up and ready for thinning, they will do as well plunged outside as grown in the frame if attention is paid to the watering, never allowing them to get dry.

Campanulas.—The varieties of *C. calycanthema* are most useful in pots, both for cutting and conservatory decoration, from the early part of April until they flower naturally in outside borders. The seed germinates so freely when sown on the surface of soil outside during showery weather in spring, that it is not necessary to sow the seed in pots and pans under glass. From seed sown early in the season good plants may now be lifted and placed into 6 or 8-inch pots according to their size, the latter being the most suitable. After lifting syringe freely and keep the plants well watered, and their growth will develop rapidly, and before the end of the season very strong plants will be the result. These should be housed in autumn in a cold vinery or Peach house after the approach of frost, or a cold frame. The earliest batch to flower may be brought forward in a little heat early in January. The conditions of an early vinery or Peach house just started will suit them very well for a time, but after they commence growing a close atmosphere must be avoided. The later batch may be brought forward under cooler treatment. When large plants in 10-inch pots 3 feet or more in diameter are wanted, seed should be sown about the end of August in a box, and when large enough pricked out into other boxes, wintered in a cold frame, and then grown on the whole of the following season. Those who have not cultivated these plants in pots for early flowering will find that few plants repay better for the little care and trouble required.

Mignonette.—A good number of pots should be filled with similar soil to that recommended for *Rhodanthes*, and then sown with the seed of *Mignonette* for autumn and early winter flowering. The same size pots are very suitable, and the same treatment may be given the plants until the approach of cold nights, when they should be placed in a cold frame. A bed may be sown outside at once with the common garden variety, after enriching the soil with a little manure and pressing it moderately firm. When the plants are up they should be liberally thinned, and they will grow strongly instead of being weak and puny, which is the case when crowded. This bed should be covered with a frame before the approach of frost, and the result will be abundance of material for cutting after that growing outside has been destroyed by frost, and while those grown in pots are doing duty in the conservatory or any structure kept gay. Tree varieties to be grown into standards, if sown and treated as previously directed, should be placed into 9-inch pots and secured to the trellis upon which they are to be trained. It is a mistake to allow the young plants to become root-bound in their 5 and

6-inch pots before giving them their final shift. If once they become root-bound in small pots they become woody and fail afterwards to do satisfactorily.

THE FLOWER GARDEN AND PLEASURE GROUND.

Mulching Flower Beds.—Owing to the long spell of very hot and very dry weather a considerable amount of watering will have been done, and in many cases very probably much more water will have been given than is good for the plants. A nightly watering, perhaps with very cold hard water, generally has the effect of impoverishing and making the borders cold and unkindly, the plants not making good progress under such treatment. Our plan of preserving sufficient moisture at the roots without frequent waterings is to give the beds a good soaking of water over-night, followed in the morning with a surface hoeing and a mulching of some kind. Leaf soil and cocoa-nut fibre are the best materials for mulching, and these not being available fine dry soil will be found an excellent substitute. The latter effectually checks rapid evaporation, and is not so liable to be scratched about by the birds. The Zonal Pelargoniums do best during a hot dry season, and after a heavy rain or watering followed by mulching will require little or no further assistance in the way of watering. Verbenas, Violas, Calceolarias, Lobelias, Begonias, Plox Drummondii, and other moisture-loving plants will be benefited by occasional watering, varied during showery weather with weak liquid manure. Pyrethrums, Petunias, Marguerites, Ageratums, Tropæolums, Perilla, and Marigolds stand the drought fairly well, and ours when once established receive no further waterings.

Pegging Down and Stopping.—In order to fill the beds evenly and neatly, both pegging down and stopping has in many cases to be resorted to. When in anticipation of this the plants are put in in a sloping direction, pegging down is a comparatively easy matter, but if they are planted uprightly then they are liable to snap off, this being especially the case with Pelargoniums and Calceolarias. Prior to pegging down the plants the beds should be stirred with the Dutch hoe, and firmed down with the rake if need be, and the mulching following watering applied, as this cannot be properly done later on. For the stronger-growing plants strong pegs are required or they will spring up again, and such pegs may be cut from the shrubberies. Fagot wood or the old prunings of Apple or Pear trees properly dried and stored may be used, these being merely shortened, bent nearly double over the shoot to be fastened down, and the two ends be firmly thrust into the soil. For Iresines, Petunias, Verbenas, Ageratums, and other plants of moderate growth, pegs may be cut from common bracken, old birch brooms, &c. The plants being evenly distributed over the soil, taking care to confine them to their proper lines, should have all straggling shoots stopped, and this will tend to make them more compact. Many of the single Dahlias, notably alba or White Queen, are very effective when pegged down, but it is useless to attempt it unless they were planted in a sloping direction.

Carpet Beds.—These now require weekly attention, or otherwise the requisite neatness of the panels and accuracy of the lines cannot be maintained. Golden Pyrethrum is one of the worst offenders, and the sooner this is dispensed with in favour of the slower-growing if less bright sorts the better. When the flower stem of the Pyrethrum commences to form this must be pinched hard back, while all the side leaves require to be plucked with the hand in such a manner as not to expose the stalks, and also to preserve the fine line of yellow. The Alternantheras require little or no attention, as these seldom grow strongly; and all that is necessary is to pinch back any irregular shoots. Mesembryanthemum cordifolium variegatum grows strongly in nearly all summer weathers, and must be freely stopped, regulated, and frequently thinned out where very thick, or it will spoil the design. Iresine Herbstii to be pegged down, stopped if necessary, and receive but little water, or it may grow too strongly. Any of the very dwarf Ageratums, and which are very effective and durable carpet bedding plants, that may be inclined to lose their character and grow rankly, should at once be removed, their places being filled with plants held in reserve. Lobelias are particularly bright at this time and during August, but later on they become weedy; there is no possibility of preventing this. The groundwork plants, such as Herniaria glabra and its golden variety, Sedum glaucum, Sedum Lydium, Veronica repens, Mentha Pulegium gibraltarica, and Antennaria tomentosa when once they are established are apt to grow too strongly and require to be regulated very frequently, or otherwise they will smother their less vigorous neighbours. Any that are too thick, and perhaps too high, can be regulated by plucking, followed by a pressing or patting down with the hand. All can be kept within bounds with the aid of hand-shears or old knife, and blanks may be made good by taking up some of the strongest pieces, dividing these, and replanting. They may be also encouraged to spread by occasional pressing down with the hand, this inducing the side shoots to strike root and grow more strongly. The flower stems of Echeverias spoil the neat appearance of the beds, and should therefore be removed, neither should any of the stronger succulents be allowed to flower.

Annuals.—These now require attention, especially in the way of thinning, where at all crowded. If such kinds as Poppies, Love-lies-bleeding, Candytufts, Convolvulus, Eschscholtzias, Sweet Peas, Mignonette, Cornflowers, Corn Marigolds, and various other strong growers are not freely thinned out they only spoil each other; whereas if given plenty of room each reserved plant will grow strongly, branch freely, and continue to flower till long after those left in a crowded state have collapsed. The seed pods on Sweet Peas if left on the plant quickly stop further growth, but if kept closely picked off, the plants, provided they have good soil to root into, will continue to flower till cut down by frosts. Ornamental Grasses generally germinate freely, and these to be good must also be freely thinned out.

THE BEE-KEEPER.

NOTES ON BEES.

SPREADING BROOD—OUTSIDE CASES.

OWING to the most untoward weather in May and June, which caused the death of so many bees in some localities, the hives were as strong then as they are now. They have, however, gathered and stored more honey at this date than they have done for many years, and should the weather continue fine for but eight or ten days there will be an abundant harvest, especially from hives of the Stewarton type.

I have previously given my experience on the superiority of the Stewarton hive over ordinary frame hives, showing that no single-frame hive is so suitable for bees as is the Stewarton. A frame hive to be large enough for the internal economy of the hive is too broad, therefore badly adapted for keeping up a uniform temperature. My apiary is open for inspection to all who have a desire, and many visit me, but for the benefit of bee-keeping readers I may state how my hives stand at this time.

As is well known, I do not advise manipulating hives unless in cases of necessity. Last autumn, as is my custom, I arranged my hives and covered for the winter, making sure that they had sufficient stores to last till there was a likelihood of the bees getting honey from the flowers. The result is all my Stewarton hives are rapidly finishing their second super, while my frame ones are only at their first one. There is, however, one exception—that is, those crossed Cyprians, both the stock and swarm of this hive are very heavy, and rapidly, more than any others, filling supers. Surely after this no other proof need be sought for to establish the superiority of the Stewarton hive. But this is not all. Just over the hedge are twenty hives, and the Stewarton hives are ahead as they are in my own case. I am also in possession of several letters from a distance saying their Stewarton hives are occupying six supers, the difference in our cases being that their locality is more favourable for bee-keeping than ours, and is a substantial proof that the superiority of any hive can only be established by a fair test in the same place.

It will perhaps please the advocates of spreading brood to learn that the superiority of our Stewarton hives is due to this process, not by the hands of man, but by a natural process, because the only manipulation I have made since October was putting on supers, and an examination lately to see the progress.

The advanced state of our Stewarton hives came about in this way, and is what I have long taught. During the very cold weather in May and June, for upon the 25th morning of June the thermometer stood at 30°, and we had colder mornings, but on the 27th day it rose to 81°, variable enough. During these cold times the bees in the narrow Stewarton hives with sufficient stores could keep up a proper degree of heat for hatching brood, and continued to spread the brood downwards, and increased accordingly, without attempting to destroy eggs and larvæ as did those in frame hives. So it seems after all that spreading brood is right if well done, but it is quite apparent that the downward or vertical course is the proper one.

I think I stated in a previous article that as the most of my stocks were full in early May that brood-spreading then was impossible; but though it had, would it not have been very injudicious to spread brood at so early a date? The result could not have been other than failure, as has been fully exemplified in the following cases. It is surprising how bees with a queen can be tided safely over winter. I kept three nuclei with but a few bees; one filled the place of a deposed queen, and the other two progressed steadily, and now they are strong stocks. They covered in the beginning of June eight combs only, while all the others were crowded. At that date, 8th of June, ten really fine days were all the bees had got this season, and at this date they had three of them, which set many supered hives swarming, and caused the hives not full to extend or spread their brood. I kept a careful watch on the weather and movements of the bees, not for the purpose of getting information, but to be able to give evidence from a reliable source. On the 6th day of June I examined the two nuclei, and found them covering seven combs only. A second examination on the 8th, they had extended or spread their brood to the ninth comb. Surely if brood-spreading is an advantage, and can be performed with safety at any time, the 8th of June should be the time. In this case the queen spread the brood herself, expecting the bees to take care of it, which no doubt they might have done had the weather continued

mild, and more so when it was done naturally than by the hands of man. The next examination I made on the 26th June, and instead of the brood being cared for and hatched, it was reduced to six combs in both cases, thus establishing the fact that spreading brood under any circumstances is a great mistake, and proves the theory of spreading brood to be entirely wrong. Had these bees been located in a Stewarton hive the change of temperature would have been less felt inside, and the progress would have been much greater. I have been engaged in the "battle" of the hives for the last thirty years, and had much opposition while defending the Stewarton type, but as my opponents are now one after another adopting the system, it is a proof I have been on the right side, and I know the same will follow with the spreading of brood.

A very great amount of information, which enables me to speak positively on some things, is brought through the post. One of these letters reminds me that I have a promise to fulfil about outside cases, but before doing so will give here verbatim quotations from three that came by the same post. The first is, "Please send me 3 lbs. of your comb foundation for a super." Second, "Please to forward me one of your six-sided octagon boxes for breeding purposes." The third letter says, "I have forwarded by parcels post a hive with a ventilating floor which I made for it." This hive is for the purpose of receiving a second swarm of Carniolian bees, directions follow, and is a practical letter. The ventilating floor is made after my style. It is a rim of wood $2\frac{1}{2}$ inches broad by 1 inch thick, covered with tinned wirecloth, and has a tunnel closed at one end for the mouth. A swarm of bees might travel in it several days at this season in perfect safety. The rim is made in one piece, which is objectionable, being a waste of timber and liable to warp. A better way is to cut it into segments from half-inch wood the number required to complete the circle twice, then nailed together, breaking the joints one with the other; now nail the zinc on one side, and fillets with sliding shutter on the other. Then take four pieces of hoop about 5 inches long, punching holes at the proper distances, so that one shall be opposite the floor after the lower end has been turned at right angles to go beneath. The next hole should be opposite the centre of one of the rolls of straw so that a wire nail may pass into it and hold the floor rigid to the hive; at a little distance from the upper end another hole to rivet a little hook for the purpose of attaching strings to hold the supers rigid. A hive so rigged out is easily completed to travel with safety to the moors, both as regards non-escape of bees and ventilation.

We are very often told to invert hives when taking them to the Heather, what I have done for nearly forty years with hives in spring or autumn, and when placed in a hamper with wirecloth on the crown and cheesecloth on the mouth, skewer down, and a lid over all. There is no better plan for some days' journey when the hive is in charge of steamboat and railway officials, and often under cover, but it is a very different thing when removing bees to the Heather. Hives capable of being inverted are not worth the trouble; besides, the bees of an inverted hive run the risk of being drowned if heavy rain is falling, or if the sun is very hot the combs may be melted. For safety keep the hive in its original position, fitted with a ventilating floor, also ventilated at top. All outside coverings of metal are bad unless ribbed to allow a free circulation of air around the hive; the same applies to all non-porous coverings. These few hints may be of advantage to those who for the first time are thinking of moving their bees to the Heather, and I may chime in with your excellent correspondent "Felix," and advise everyone to count all cost, and as time is money, purchase the most useful and at same time the cheapest appliances. If some hives bring bees to the highest strength without manipulation, and earlier than some that require it choose these hives.

The demand for Stewarton hives and of their type has been greater this year than has ever been. One reason of this is, bee-keepers find some hives are too unwieldy and expensive to travel. The only drawback is the cost of outside cases. In many instances these cost more money than the hive, and the variety is so great that makers do not know well what is likely to please their customers. Then covering with straw makes the apiary untidy, and to those who do not grow it expensive. I have numerous inquiries, What is the best covering for hives? A cheap yet neat and effective outside case for any hive can be had for 6s., or thereabout. Either octagon or square can be made; the former takes much more labour and is more expensive, but for a square case from 2s. to 3s. will purchase material to make one 2 feet high by 1 foot 6 inches inside, four posts 2 feet long by 2 inches broad by $1\frac{1}{4}$ thick, and four fillets half-inch square for the outside angles of the case, and closes the ends of the lining, which is in length 1 foot 6 inches by 4 by $\frac{1}{4}$. These

thin boards overlap each other about half an inch, the under edge is bevelled inwards to form a drip. As the boards do not lie quite close, it is a great advantage in allowing a free circulation of air on the packing, keeping it and hive always perfectly dry. The rim of the roof, which is a span, is five-eighths thick, and has a rebate in the inner edge to give a lap, same as lining, and prevent wet entering; the lining is of some material, and when covered with zinc and painted will last a lifetime, while the lightness must recommend itself to many.—A LANARKSHIRE BEE-KEEPER.

TAKING OFF SECTIONS.

"A LANARKSHIRE BEE-KEEPER" is always so obliging in helping his brother bee-keepers that I take the liberty of asking for a little information.

In taking off sections some people say take off each as finished without disturbing the crate or hive; but I find it impossible to do this, so wait until I think the crate is finished and take it off, and take sections out after a distance from the hive. When I take off the crate, and before I have time to replace another, the bees crowd the top bars, so that it is almost impossible to put on the crate without crushing a lot of bees, and what I wish to know is how I can prevent this. A few days ago, on taking off the crate, I at once put a quilt over the hive, on which I sprinkled some carbolic acid. This kept the bees down completely, but when I put on the crate again it was two or three days before the bees entered the sections, and I fancy it was the smell of the acid left after the quilt that caused this. Is it so? Perhaps I used too much. Kindly say how to manage in such a case to keep the bees out of the way, do you use the acid pure, or mixed with water?—if the latter, in what proportion? Also say when you want to add a second or third crate, do you put it on the top or underneath those already on the hive?—F. J.

[In using carbolic acid care should be taken neither to smear the bees nor in such a quantity as to make the hive disagreeable to them. I use the crude carbolic acid sold for sanitary purposes, and never dilute it. I think the way "F. J." used the acid on the quilt was quite right, especially as the quilt would be removed before another crate of sections was put on. To carbolicise brown paper and slip these between the sections will effectually clear out every bee in a few seconds. There are different sorts of crates and racks for holding sections. The best I ever used, and which I exhibited at Edinburgh in 1877, consisted of an outer case containing frames, minus the top bar; but then it did not meet the approval of the judges, but is now generally recommended. Sections in such a crate and frames can be examined and removed with ease, but those who teach the removal of sections as they are finished and replace with empty ones have a great deal to learn. I have always practised giving one super as the previous one has been well begun, and the last-put-on one always on the top, otherwise, should the weather become unsettled, comb-building ceases, and not unfrequently the bees carry the honey down, causing waste and disappointment. Instead of bees finishing a few sections for the accommodation of the bee-keeper to remove, not unfrequently they have from 100 lbs. to 200 lbs. in a progressive state, and the honey season is often at a close before a single super is really well sealed and ready for removal; therefore, those who attempt to get sections finished "piece-meal" fashion lose the abundant harvest they would otherwise have.]

The reason the bees did not take immediately to the new crate of sections may have arisen through the discontinuance of the flow of honey in the flowers, or what is more likely, and what I have frequently explained is, bees seems to dislike entering sections by the obstructionable under broad rail. If this is the case, as I believe, then it is apparent that a great loss is caused by their use, as I have often observed. Why, then, not discontinue their use and adopt supers, which are as cheap as sections in the first place, and require neither racks, crates, packing cases, or the greatest invention out—a second section to envelope the first one? I do not know a single practical bee-keeper nor a honey merchant who approves of sections, while in a commercial point of view supers are preferable and more profitable to the bee-keeper.—A LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

J. Carter & Co.—Seed List of Florists' Flowers, Fruit, and Vegetables.
W. & J. Birkenhead, Sale, Manchester.—List of Hardy North American Ferns.
W. Lovel & Son, Driffield, Yorks.—List of Strawberry Runners.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We

request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (Vectis).—The address you require is the Thames Bank Iron Company, Upper Ground Street, London, S.E.

Strawberries (W. Lovel & Son).—The fruits were of good size, but had suffered so much in transit, being much bruised, that we cannot speak favourably as to their condition or flavour.

Imported Orchids (W., Reading).—The book you mention does not include the culture of Orchids; you will find ample instruction in Mr. B. S. Williams' "Orchid Manual." The treatment you are adopting is correct and we can advise nothing better, but when the roots are growing you can place the plants in well-drained pots or baskets with moss and a small quantity of fibrous peat, growing them in a temperature which does not fall below 55° nor rise above 65°, until it can be decided what the plants are.

Exhibiting Stocks (R. S., Balmoral).—If the prize was offered for the best "blooms" of Stocks the award was, strictly speaking, right; but it is the duty of persons who offer prizes or prepare schedules to take care that the conditions are so clear that they cannot be mistaken. The flowers of Stocks taken from spikes are "blooms" just as individual Roses are that are cut from a stem bearing many flowers.

Strawberry Depredators (Uxbridge).—Your Strawberries are "taken," we suspect, by either rats or mice, and not by either toads, frogs, or birds, and you should destroy the vermin by traps or poison, but the latter should be used with care, as domestic animals or birds may be destroyed also.

What is an Herbaceous Plant? (Joseph Law).—We consider that all plants are herbaceous that lose their stems annually and spring up again from the roots. According to this definition your plants would be eligible for competition. The wording of the class is, however, very loose, and the judges might either understand that hardy plants were meant, or that the word "distinct" meant distinct kinds. Your plants were not distinct kinds. Still if we had been judging such a class we should not have disqualified you if the varieties were distinct, on the ground that an exhibitor should not be punished for any mistake in the published conditions.

Aphides on Gardenias (Subscriber).—If all the shoots are infested like the one you have sent there is only one method of restoring the plants, and that is to cut them down, wash the stems with an insecticide, keep the plants in a very warm moist house to break, then repot, removing much of the old soil from their roots—in fact all that is loose, and encourage fresh growth in brisk heat, and keep the plants clean by daily syringings. The specimen is in a deplorable state, and nothing can possibly make such a shoot healthy. Aphides can be destroyed with Gishurst compound, Fir tree oil, nicotine soap, or soft soap and petroleum; but it is of no use wasting time and material on shoots in the state of the one before us, which should be cut off and burned.

Apple Bess Pool (A.E.).—Your Apple is a good example of the above well-known late-keeping variety. Its origin is thus described in the "Fruit Manual." "This is a Nottinghamshire Apple. Mr. Pearson of Chilwell says, 'My father became so in love with the Bess Pool that he planted it largely. He used to tell how a girl named Bess Pool found in a wood the seedling tree full of ripe fruit; how, showing the Apples in her father's house—he kept a village inn—the tree became known, and my grandfather procured grafts. He would then show the seven first-planted trees of the kind in one of our nurseries, tell how Loudon had been to see them and given an account of them in his *Gardener's Magazine*, make his visitors try to clasp round their boles, and measure the space covered by their branches. He would then boast how, one season, when Apples were very scarce, the fruit of these trees was sold at 7s. 6d. a peck, and made £70, or an average of £10 a tree. So far from thinking the Bess Pool a regular bearer, I believe it to be a very uncertain one, and anything but a profitable one to plant.'"

Chrysanthemums for Exhibition (Wordsworth).—Successful exhibitors o blooms grow several plants each of what they consider reliable varieties, and they do not treat them all alike as to "taking" the buds, because they do not know what the weather will be in October and early November. What you term a "summer" bud (crown bud) develops a larger flower as a rule than a terminal bud does, and a side bud on a terminal growth produces a smaller flower than the end or central bud of the cluster. For your district we should set at least a number of summer or crown buds if they showed towards the end of the first week in August. That would probably be right for all except the early varieties, and the blooms even of some of these might keep if the season were late. As you cannot make buds form when you like you cannot do better than remove promptly all buds that form towards the end of the present month, and rely on the first buds that show afterwards, removing very carefully all growths and buds surrounding the most prominent at the end of each shoot as soon as this can be done with the point of a penknife; but remember the buds retained must not be touched, as the smallest possible injury inflicted on them is certain to grow and spoil the blooms. Nearly all the largest blooms that are exhibited are from "crown" buds, and amongst the varieties likely to be too early if "set" during the first week in August are what are known as the Rundle trio, Prince Alfred, Lord Wolseley, Prince of Wales, Mr. Bunn, the Beverleys, White Globe, Lord Derby, St. Patrick, and Beethoven, and these would be safer taken a week or so later. But do not put all your eggs in one basket—that is, treat all the plants of a variety exactly alike.

Pruning Roses in Summer (Kittie).—Climbing Roses that are permitted to extend to a great length when young, the shoots 6 feet long or more, and not shortened in winter, are almost certain to get naked at the base

as the lower buds will either not start at all or grow weakly. It is better in the end to proceed rather slowly at the beginning by shortening at least some of the shoots to within 2 feet of the ground. It is by adopting a similar practice with Vines that they are furnished with growths quite as low down as is desired. In the case of the Gloire de Dijon, with a bare stem of 4 feet and a spreading growth above that height, with a luxuriant growth starting from near the ground to near 6 feet high; there are two methods of dealing with the latter: top it now, and in winter shorten it to within 18 inches of the base, and in the spring it will push four or five growths that may be distributed over the lower part of the wall. 2, Let it extend through the season, and in winter bend it under the present branches and train it down the other side of the stem to the ground. By this plan you would have flowers next year on the lower part of the wall. We cannot say what the growth would be afterwards, as this depends entirely on the vigour of the tree. We may say that if the tree were ours we should have cut 6 inches off the young shoot when it was 2 feet in height, and should now have young shoots—second growths—growing up the wall. This is, in fact, exactly the result in the case of a rampant shoot of Gloire de Dijon that we topped a month ago. We take off the tops now of strong sucker-like growths of dwarf Roses with the object of distributing the sap through others that are weaker, and thus secure a uniformity of growth. If the top part of the Rose is rather weak, we should not allow the strong shoot to proceed further. Your Clematis Flammula will not flower this year if you prune it now; we cannot say whether it will do so if left alone, but as a rule the more it is pruned the more sparsely it will flower; still the lower part of the wall has to be considered, and if persons were willing to wait for flowers a little longer the lower parts of Roses, Clematises, and other climbers would be better furnished.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (D. C.).—1, *Cynosurus cristatus*; 2, *Festuca pratensis*; 4, *Poa pratensis*; 6, *Festuca duriuscula*; 7, *Medicago maculata*; 3 and 5 are unrecognisable. (G. R. B.).—*Sollya heterophylla*, a New Holland plant generally grown in a greenhouse in England. (Young Beginner).—*Jasminum Sambac flore-pleno*. (A. B. C.).—1, *Asclepias tuberosa*; 2, *Achillea Ptarmica flore-pleno*; 3, *Hypericum perforatum*; 4, *H. calycinum*.

COVENT GARDEN MARKET.—JULY 22ND.

HEAVY supplies of soft fruit to hand, and prices lower with a brisk trade Vegetables unaltered.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples ½ sieve	0 0	to 0 0	Lemons case	15 0	to 21 0
Cherries ½ sieve	4 0	10 0	Oranges 100	8 0	12 0
Cobs, Kent .. per 100 lbs.	0 0	0 0	Peaches per doz.	1 6	8 0
Currants, Red .. ½ sieve	3 6	4 0	Pears, kitchen .. dozen	0 0	0 0
Black .. ½ sieve	4 0	4 6	„ dessert .. dozen	0 0	0 0
Figs dozen	2 0	4 0	Pine Apples English .. lb.	2 0	3 0
Gooseberries .. ½ sieve	1 6	2 0	Strawberries lb.	0 3	0 9
Grapes lb.	1 0	2 6	St. Michael Pines .. each	3 0	7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes dozen	1 0	to 0 0	Lettuce dozen	1 0	to 2 0
Asparagus bundle	2 0	5 0	Mushrooms punnet	0 6	1 0
Beans, Kidney .. lb.	1 0	0 0	Mustard and Cress punnet	0 2	0 0
Beet, Red dozen	1 0	2 0	Onions bunch	0 3	0 0
Broccoli bundle	0 9	1 0	Parsley .. dozen bunches	2 0	3 6
Brussels Sprouts .. ½ sieve	0 0	0 0	Parsnips dozen	1 0	2 0
Cabbage dozen	0 0	1 0	Potatoes cwt.	4 0	5 0
Capsicums 100	1 6	2 0	„ Kidney .. cwt.	4 0	5 8
Carrots bunch	0 3	0 4	Rhubarb bundle	0 4	0 0
Cauliflowers dozen	2 0	3 0	Salsafy bundle	1 0	0 0
Celery bundle	1 6	2 0	Scorzoneria bundle	1 6	0 0
Coleworts .. doz. bunches	2 0	4 0	Seakale per basket	0 0	0 0
Cucumbers each	0 3	0 6	Shallots lb.	0 3	0 0
Endive dozen	1 0	2 0	Spinach bushel	2 0	4 0
Herbs bunch	0 2	0 0	Tomatoes lb.	0 4	0 5
Leeks bunch	0 3	0 4	Turnips bunch	0 6	0 0



THE CLERGYMAN'S FARM.

"No spiritual person licensed to perform the duties of any ecclesiastical office whatever shall take to farm, for occupation by himself, any lands exceeding eighty acres in the whole for the purpose of cultivation." So runs the Act 1 and 2 Vict., with the obvious intention of keeping our spiritual pastors from becoming too much absorbed in things temporal; but we think an allowance of eighty acres by no means despicable, for it affords ample scope for the cultivation of a bountiful supply of farm produce that should more than suffice for the requirements of a clergyman's household.

What to do with the glebe land is frequently so great a puzzle that the difficulty is often got over by letting the land to a farmer. Yet with a taste for rural pursuits there should be no great difficulty in the acquirement of a sufficient knowledge of farming to enable one to derive both profit and pleasure from it—profit in the primary sense of obtaining as much home produce as possible for home consumption, and pleasure in the cultivation of really useful crops in the best way. We know at least one country rector whose boast it is that he has an ample supply of home-grown corn, roots, fodder, fruit, vegetables, as well as poultry of all kinds, eggs, home-cured bacon and hams, and dairy produce from his farm. The clergyman's farm is, therefore, a home farm in the full sense of the term.

Of corn crops there should be a due proportion of Wheat for grinding for flour for the household, the bran always being useful for animals, cows being especially fond of it. With Wheat at the present low rate it is not desirable to have any considerable surplus of it, but it must not be forgotten that ground and mixed as whole meal with other corn it is admirable food for animals, a mixed corn diet being wholesome, and, if given in sufficient quantity, fattening, so that bills for oil-cake may be avoided. This is an important point to keep in view. Let the farm be self-supporting, and avoid the purchase of any cattle food, and of manure too, so far as is possible. Square-head Red Wheat is the best sort for general culture; the straw is sturdy, stout, and strong, well calculated to bear erect the somewhat heavy head of corn till it is ripe. The grain is large, the yield good—an average of from 5 to 6 quarters per acre being quite possible under high cultivation—and the quality of the flour excellent. In southern counties preference may well be given to Velvet Chaff or Champion White Wheat, both for the actual superiority of the flour and for the comparatively high price which the grain invariably commands, and with a surplus the home farmer is as eager as anybody "to pick up a little money." Do not sow Champion White Wheat in a bleak wind-swept situation, for the straw is slender, and it grows so tall as to be easily beaten down in a heavy storm. We may again here mention our trial plots of Wheat, now fast approaching maturity. Of these Golden Drop is still inferior in length of straw and size both of ear and grain. Champion White is upwards of 6 feet high, with very long but somewhat slender ears; yet the crop on the whole is so full of promise that this sort will probably have a trial on a much larger scale next season. Velvet Chaff, though not so tall, is very satisfactory, its compact ears borne on stout straw giving promise of a yield of heavy grain. Square-head for straw, for ears, and for size of grain continues to hold first place, and it may always be mentioned as a safe sort to grow either upon a large or small scale.

A sack of wheat yields slightly over 3 bushels of flour, so that if we reckon our land to yield 5 quarters or 10 sacks per acre, our computation for the requirements of a year becomes an easy matter. It must not be forgotten that for a crop of Wheat to afford this high average the land must be well drained, free from foul weeds, and thoroughly fertile. Good seed must be sown either in September or October, an autumn and spring dressing of genuine home-mixed artificial manures must be applied, the crop must be harvested in as nearly a perfect condition as possible, and the threshing not be done till the grain is firm and hard. We state thus much generally now, and when seed time once more comes round full cultural details will be given again. We may now add that applying our teaching to practice we have bought no beasts this year, and all calves not kept for the dairy herd were fattened and disposed of to butchers, our intention being to trust solely to artificial manures for the Wheat, to avoid a heavy outlay for litter, the expense of a stockman, the making of mixens, and the carting and spreading of farmyard manure upon the land—all heavy items of expenditure that help to exhaust the farmer's means, and to defeat his efforts to overcome the

difficulties of low prices for his produce and hard times. Wheat, as the staff of life, has been given the first place here. Its culture, though quite indispensable upon the home farm, must be kept within reasonable limits, an undue preponderance of it or any other crop being calculated to defeat our aim of having a full supply of home-grown farm produce, so that its culture and that of all other crops must be well considered beforehand, and as we are fast approaching the end of the farming year—Michaelmas—there is ample time to do this and to arrange our plans for another season's work. In doing this we must allow a safe margin for failures arising from unkind seasons, by which results are influenced in some degree, however careful we may be; and to have a surplus quantity over household requirements by no means leads to waste, poultry, pigs, sheep, and cows all coming in with advantage for some of it.

(To be continued.)

WORK ON THE HOME FARM.

On land specially reserved for haymaking that important operation has been done well and cheaply, for though the hay crop was heavy yet sun and wind both helped us on, and there was no rain to hinder the work. There has, however, been so much late work upon pastures where stock had been kept late in spring that hay and corn harvests will, in many instances, form a continuous operation. It is certainly a moot point if it answers to so retard the haymaking; for ourselves, we certainly consider that it does not answer. We never turn beasts upon grass laid in for hay till the aftermath is ready for them, and then they continue there till the end of September. Sheep follow during winter till we apply the artificial manure in February, and thenceforward the growth is left unchecked in view of obtaining a full crop of hay. No doubt, many a farmer is driven by dire necessity to keep stock upon the hay meadows late in spring, but it would in the end prove more profitable only to keep enough animals to consume the store of winter fodder by the time a full supply of green food is forthcoming in spring from crops devoted specially to that purpose. Let our calculations in this matter be based upon the assumption that every spring may prove as late as it was this year, and then we shall be safe. A bountiful aftermath is far more profitable than a scanty spring growth, and its effect upon the dairy cows is highly beneficial. It is now that we get our best butter, high in colour and of delicious flavour, and an ample store is potted for winter use. Winter Oats are changing so fast that harvest will have begun before this note is in print. We hear many complaints of shortness of straw in Spring Oats, but there is no cause of complaint upon that score in the Winter Oats, which, as usual, are excellent both in straw and grain. Root crops are, upon the whole, satisfactory, White Turnips are sown, singling is finished among Swedes, and the horse-hoes have been in full use till the spreading foliage stopped them. It is with regret that we have seen much land left unploughed after a green crop was cleared in June or early in July. Rather than leave it in that condition we always sow another green crop either of Tares or Mustard, or a late crop of White Turnips. Green crops, be it remembered, may always be ploughed in advantageously; so, too, may Turnips if not wanted for stock. A surplus supply of Winter Tares has been used daily for the dairy cows, our plan being to throw as much as they can eat at once upon any pasture becoming somewhat bare, as is often the case just before the aftermath is ready for them. They also had some in the cribs during the milking. Young pigs held in reserve for the corn stubbles have also had a daily supply of Tares.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				Rain
	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tempe- rature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min	In sun.	On grass	
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
July.										
Sunday 12	30.069	60.8	59.3	N.E.	64.8	71.3	58.0	108.8	55.4	
Monday 13	30.061	57.8	54.6	S.E.	63.4	73.3	56.0	120.6	51.9	
Tuesday 14	30.214	61.6	55.3	N.	63.4	73.8	50.7	117.8	44.8	
Wednesday .. 15	30.233	65.6	55.5	W.	62.6	75.7	50.1	112.8	43.7	
Thursday 16	30.051	61.4	57.7	W.	63.2	71.8	54.2	119.2	48.3	
Friday 17	30.029	61.7	54.8	W.	63.2	71.2	54.4	117.4	48.1	
Saturday 18	29.985	61.3	57.1	S.E.	63.2	71.9	53.2	99.8	47.9	
	30.092	61.5	56.3		63.4	72.7	53.8	113.8	48.6	

REMARKS.

12th.—Heavy rain early, then fine throughout.
 13th.—Dull and sultry early, bright and fresh later; thunder and lightning and rain about 9 P.M. Heavy rain in the City, very little here.
 14th.—Fine and bright.
 15th.—Fine.
 16th.—Wet in morning; fine afternoon.
 17th.—Cloudy morning; fine and bright afterwards.
 18th.—Cloudy, with a little sun about noon.
 Rather a dull week, cooler than the previous one, but very near the average temperature, and extremely equable, the maxima all agreeing within 4° degrees, and the minima within 7°.—G. J. SYMONS.



COMING EVENTS

80	TH	Oxford.
81	F	
1	S	Liverpool (two days). Southampton (two days).
2	SUN	NINTH SUNDAY AFTER TRINITY.
3	M	Northampton.
4	TU	Royal Horticultural Society (Plants and Flowers).
5	W	

FLAVOURLESS MELONS.

IHAVE been among Melons of late, and have had to cut and taste a few dozens with the object of finding out the best, or worst, at some exhibitions. As it is not customary to stage the worst fruit at shows, the character of that to which prizes are awarded may be regarded as fairly representative of the produce of the districts in which exhibitions are held. Grapes have been very good indeed; Peaches fine, Nectarines good, Strawberries fair, but Melons bad—decidedly and unmistakably bad.

As men who can grow Grapes, Peaches, and the other fruits indicated well cannot be bad cultivators, it appears passing strange to find so many flavourless Melons staged for adjudication. The most approved varieties are grown, and the fruits good in appearance, but not one in ten has been found of even fairly good quality. Prizes have been given to fruits that certainly did not deserve them, and they were simply awarded because they were the best out of bad lots. It seems, therefore, pretty clear that the season has not been good for Melons, at least in some localities, and it may be worth while endeavouring to ascertain the cause of their general inferiority.

In the "olden time," before garden structures were heated by hot water, Melons were almost exclusively grown in frames on beds of fermenting materials. To cut Cucumbers in March and Melons in May was considered good work in those days, and if gardeners of the present, with no other aids than those mentioned, succeed in doing the same, they will not find it very bad work now, provided the Melons are of first-rate quality.

It was customary in those days to lessen somewhat the water supply to the Melons when the fruit was approaching the ripening stage; and there was reason for this, for the roots of the plants often took possession of the manure, and the growths were supplied with all the support they needed, and as much moisture as the foliage could assimilate; in other words, water could be reduced without the leaves of the plants flagging in the slightest degree, and they were kept stout and fresh throughout the ripening process. Had the foliage "given way," the drying would have been overdone, and the fruit most certainly inferior in quality.

Under the old method of culture, and the great pains that were taken in maintaining the requisite heat by linings, and the atmosphere suitable for the plants by ventilation, it was not common to find either red spider or any other insects on the foliage. The moisture and ammonia were natural deterrents of those enemies which have a disastrous effect on the flavour of fruit. At the time of fruit ripening the foliage should be in the best possible condition for performing its functions, and must not be obstructed in its important work by insects, as, if enfeebled, the supply of sap is checked, and the quantity is altogether insufficient for adequately supporting the fruit, and at the same time the sap which is supplied remains crude, as it must of necessity

do in the absence of leaf power for its purification and the secretion of that which alone can result in well-fed fruit of superior quality. It is useless to expect high flavour in fruit that is "nourished" by crude or imperfectly elaborated sap; and it is not possible for a sufficient supply to be provided nor what there is to be prepared in the laboratory of Nature when that laboratory, the foliage, is inoperative, either by the devastation of insects or an insufficient supply of water to meet the great evaporation that is in constant operation under a powerful sun. Whether the juices of the plants are extracted by insects from the leaves or escape into the atmosphere, the effect is the same—insipid or unpleasantly flavoured fruit.

It is surprising how old customs that are handed down traditionally from generation to generation cling to individuals who have inherited them without considering their applicability to the changed circumstances of modern practice. It does not follow that because it was desirable to "dry off" Melons—which, in the old days, had 4 feet of rich moist manure to root in—it is desirable to withhold water similarly at a critical time when the roots are warmed by the dry heat from hot-water pipes. On the contrary, a practice that may be right in one case may be utterly wrong in the other; and it is wrong, absolutely wrong, to withhold water from Melons when the fruit is approaching the ripening stage to the extent of causing first the flagging and eventually the total collapse of the foliage. Yet this is what is done in hundreds of gardens, and then surprise is expressed at the ill condition of the fruit. It would be surprising if it were otherwise. Without good, stout, clean, well-developed and, consequently, well-supported foliage, there can be no well-nourished and highly flavoured fruit, whether of Melons, Grapes, or anything else that grows; but the evils arising from enfeebled leaves by lack of moisture for their sustenance is in no fruit more manifest than in Melons. The fruits are, in fact, bad or good as the foliage is bad or good. The one is the correlative of the other, the natural effect of a visible cause. Still, cultivators—not all, but by far too many of them—go on "drying off," just because their fathers did so before them, but who worked under essentially different conditions, and even then took care never to allow the leaves of the plants to shrivel until the crops were ripe.

I have noticed, as others must have observed, that Melons staged at exhibitions are not, as a rule, good in very hot and dry seasons. A few fruits may be found of great excellence, but the majority are defective in flavour. I have further noticed that in such summers as this that the average quality of the fruit is higher in the north and western than in the south and eastern districts of the kingdom; but in dull and wet summers the reverse is the case. This shows that sun is essential and—do not forget it—moisture too. With adequate support ensuring first-class foliage and maintaining it by adequate support and judicious ventilation, the hotter the summers are the better Melons should be.

In the South-western States of America they are grown in fields where the subsoil is moist and the water level not many feet below the surface. The seed is sown in the open, where the plants grow and fruit, and the hotter the summers are the richer is the fruit, the sun there being much more powerful than it ever is in Britain; but it just draws up the moisture in great quantities from the reservoirs of Nature, and the plants and crops are benefited accordingly.

A few years ago Mr. Taylor, then of Longleat, sent a fruit of the Cashmere Melon to one of the meetings of the Fruit Committee of the Royal Horticultural Society at South Kensington, and it was unanimously considered one of the best that had ever been tasted there. I know that it was good because I was one of the "tasters." The summer was hot, and the plants at Longleat were, I believe, watered like Cucumbers. There was no drying of the soil to "develop flavour" and destroy foliage. That year the Melons at the Crystal Palace Show were, as a rule, wanting in flavour. I

tasted between five and six dozen of them—an unenviable duty—and only very few were good, the majority ranging from moderate to bad. That same season an American Melon grower was in England—a grower of tons of fruit. He purchased several, with the object of finding some superior variety and saving the seed, but without avail: and the only fruit that he considered really good, and the seed from it worth taking home, was grown at Longleat on what may be termed the Cucumber system—that is, supplying the plants with all the water that was requisite for keeping them growing throughout the whole process of ripening the crops.

Overcropping is fatal to high flavour. If the plants cease growing before the fruits attain half the size they should do, it is practically impossible to retain the foliage, and in that event it is hopeless to expect high-class fruit. The crops should be so regulated that the plants can do something more than support it—namely, make at least some fresh growth; then if the leaves are fully exposed to the sun, not overcrowded nor injured, and the roots are “kept moving,” first-class Melons may be relied on if the variety is good. There is yet time to avert the collapse of the foliage of many plants, and consequently to improve the fruits they are bearing; hence these notes by—A JUDGE.

SOME NEW ROSES.

Now that the Rose shows are nearly over the question begins to be asked, Are there any new Roses worth having? and the following notes made during the recent flowering season may be relied on, at least as having been made from growing plants that I have flowered. Perhaps the simplest plan will be to begin with the most recent introductions, and start with the most widely known, “the yellow Hybrid Perpetual.”

GLOIRE LYONNAISE (Guillot).—This Rose is of considerable horticultural interest, as being the first Hybrid Tea which, with a habit of growth that would suggest its being classed as a Hybrid Perpetual, still retains in its flowers the yellow colour of a Tea Rose. The colour may be more exactly described as white shaded with sulphur. Both habit of growth and form of flower are of the Captain Christy type; wood very close-jointed, flowers solitary. It is a good grower and free-flowering, and even if hardly large enough for exhibition, will probably make a very pretty bedding Rose.

SOUVENIR DE GABRIELLE DREVET (Guillot), is a Tea Rose which promises to be a very distinct addition. The plant, of sturdy upright habit, produces a deep-petalled flower, of good size, in colour something between Grace Darling and Madame de Watteville, having a whitish petal shading to coppery yellow at the base and tinted with rose at the margin.

MRS. CAROLINE SWAILES (Swales).—A sport from Eugénie Verdier of a very delicate shade of flesh-tinted rose, appears very free-flowering and invaluable for cut flower work.

Of the Roses distributed in England in the spring of 1884, taking them in alphabetical order—

ALPHONSE SOUPERT (Lacharme), is an H.P. which has already proved itself a fine exhibition Rose. The plant is vigorous and truly perpetual, its large deep-petalled flowers of a bright rose colour being very freely produced both in summer and autumn.

ANTOINE MERMET (Guillot), is yet another red Hybrid Tea of no very distinctive character.

BENOIT COMTE (Schwartz), seems a good vigorous red H.P. of the type of Alfred Colomb, but distinct in colour.

COLONEL FELIX BRETON (Schwartz), is another promising dark H.P.

ECLAIR (Lacharme), promises to be a fine and distinct addition to the dark H.P.'s, having a deep built-up flower large, and of a most brilliant fiery crimson colour shaded darker; in fact, a well-shaped Duc de Montpensier.

ELLA GORDON (Wm. Paul), is a pure crimson lake self-coloured H.P., becoming cherry colour on fully expanding; of good habit and promising.

ETENDARD DE JEANNE D'ARC (J. Margottin fils), is a pure white Tea of the Gloire de Dijon race, but without the rambling habit of its parent; rather rough and coarse in early summer, but better in autumn, as with Souvenir de la Malmaison. In fact the plants of this Tea now in full bloom look, at a distance, very like Souvenir de la Malmaison without the blush tint, offering an additional indication perhaps of the Bourbon origin of Gloire de Dijon.

GRACE DARLING (Bennett).—Whether regarded as a pure Tea (as which it was sent out), or whether eventually classed as the Hybrid Tea that some have asserted it to be, this Rose is sure to become popular; it is among the first to begin flowering and the last to leave off, of vigorous handsome habit, with full-sized highly finished flowers really distinct in colour, the petals shading to coppery yellow at the base and rose colour at the margin. It has qualities that will make it appreciated by every class of Rose-growers.

JOSEPH METRAL (Liabaud), is a very good flat H.P. to avoid.

LADY OF THE LAKE (Wm. Paul), is a flower of a very pleasing peach colour, but the plant though exceedingly vigorous is unfortunately not perpetual flowering.

LOUISE CHRETIEN (Liabaud), is a circular cupped H.P. of a bright rose colour and of good habit.

MADAME DE WATTEVILLE (Guillot), is a beautiful and distinct Tea of vigorous erect habit, and very free-flowering. The blooms are of good size, with pointed centre, white, margined and washed with delicate rose colour. A real acquisition.

MARSHALL P. WILDER (Ellwanger & Barry), is a bright red H.P. of the Alfred Colomb type, which, if distinct, will prove a valuable addition. The flower is large and very bright, the habit vigorous, and the variety is really perpetual flowering.

MARY BENNETT (Bennett), is a very beautifully finished rose-coloured H.P., with splendid petal of great substance, of rather dwarf habit, but quite distinct, and of a pure shade of colour that is wanted.

MRS. GEORGE DICKSON (Bennett), is a very vigorous H.P. of a distinct and pleasing shade of pale rose, which successfully resists mildew, but my plants were cut by spring frosts and many of the first blooms spoilt, while the second blooms are not yet expanded, so that I have not yet grown flowers of this variety so fine as I have seen of it elsewhere.

PERLE D'OR (Dubreuil), is a very pretty coppery-yellow Polyantha, ever-flowering and most useful for bouquets, and with “Mignonette” and “Ma Paquerette” makes a charming trio for the garden.

PRESIDENT SENELAR (Schwartz), is a dark H.P., very pretty in the bud, in which state, being free-flowering, it is very good for bouquets, but it is hardly large enough for exhibition, and also has a tendency to open fat.

PROSPER LAUGIER (E. Verdier), has, so far, been one of the best H.P.'s of the year, being of vigorous habit, with handsome foliage, and having large flowers of bright deep maroon colour without shading.

SECRETAIRE NICHOLAS (Schwartz), is a fairly good dark H.P. with purple shading, of good size and form.

SUNSET (Henderson, New York), is a Tea Rose whose praises have been much sung. At any rate it is most free-flowering, every growth bringing bloom, while the colour is a pleasing shade of deep tawny yellow. The buds have been charming, but here the expanded flowers have not been quite so satisfactory. That, however, is probably owing to my want of skill, and I hope next year to find this sport from Perle des Jardins established in the front rank of Teas, as the Rose has evidently plenty of substance.

Although not quite *apropos* of a new Rose, I cannot help expressing surprise at the strictures passed by Mr. J. Muir of Margam upon A. K. Williams. Here it has this year been the most dependable and perfect of all the red Roses, upwards of thirty blooms having been staged in winning stands, and from the constant and unfailing service that this variety always renders me all through the season, I should not have the least hesitation in selecting it as the best and most beautiful of the red Roses. At the same time it cannot reasonably be expected that Roses of the imbricated type should stand so well after a journey in a baking summer like the present as in cooler seasons, since the great heat causes the outer petals to recurve, the flower thereby losing size as well as texture.—T. W. GIRDLESTONE.

LILIES AMONGST ROSES.

FORM and colour are charmingly contrasted when the stately stems of *Lilium candidum* rise amongst the glowing colours exhibited by the standard Roses. Then the flower and plant of light stands like a pure sentinel beside the celestial rosy red of the rival queen, both are peerless. *Lilium candidum* delights in rich soil, and profits by the liberal support accorded to the Rose, which it does not appear to shade or injure in the least. Slugs and snails feed greedily on Lily leaves, and must be searched for and destroyed in early spring and summer.

I wish I had seen sooner your correspondent's information, on page 75 of the current number, about the removal of the anthers. I had noticed a Lily sold in London without anthers, and certainly for transit such a

practice is advantageous. Sending a day or two ago a quantity of these Lilies to adorn the last resting place of our loved and learned Bishop Wordsworth, I was disappointed that the golden dust shook about all over the petals.—A. M. B.

MUSHROOMS ON RIDGES.

I FELT flattered by your kind mention in the Journal of our Mushroom ridges. It is my first attempt at this method of culture. My employers were anxious to give the plan a fair trial, but I had great reluctance about spending so much money at the first start. However, I studied Wright's book and acted on it to the best of my limited intelligence, only departing from it by making one-half of our beds 3 feet wide and 3 feet high. The larger beds did the best. Three beds entirely failed with me, the cause of failure I have not yet found out. The beds made before and after all did well. I will now submit to you the financial statement.

We made 164 yards of beds, of which 42 yards failed.

	£	s.	d.
164 yards cost in manure	18	13	1
Labour, including carting manure, gathering, and packing the crop	22	6	6
Spawn	10	18	0
Rent of land	1	0	0
	£52	17	7

Mushrooms gathered from 122 yards of beds.
The quantities sold with prices annexed.

	£	s.	d.
15½ lbs. at 1s. 6d.	1	3	3
45 " at 1s. 3d.	2	16	3
192½ " at 1s. 0d.	9	12	6
439 " at 0s. 10d.	18	6	3
676 " at 0s. 9d.	25	7	0
1081 " at 0s. 8d.	34	7	4
567 " at 0s. 6d.	14	13	6
28 " at 0s. 4d.	0	9	4
	£108	15	5
Deduct cost	52	17	7

Value of manure in spent beds at 1s. 3d. per yard £53 17 10

Leaving us a profit of £61 2 10

Had the whole of our beds succeeded we would have had a much larger profit. Col. and Mrs. Gascoigne have been testing the matter for the benefit of their tenantry, and to show that it can be made a profitable undertaking.—JAMES DUNN, *The Gardens, Parlington.*

[As a first attempt at growing Mushrooms on ridges in the open air, and entirely from printed instructions, Mr. Dunn must be congratulated on the results notwithstanding the failure of the three beds, and he evidently under-estimates his intelligence. His experience in the work appears to have been "limited," but the intelligence he has displayed cannot be so described. As is stated on page 33 of "Mushrooms for the Million," larger beds than made by Mr. Barter are under certain circumstances and in northerly districts advisable, and Mr. Dunn's experience on this point should not be overlooked, but the cost is necessarily increased. The cost of 164 yards of ridges 2½ feet wide and high, including all other expenses of culture and marketing, would be £49 4s., as against £52 17s. 7d. with larger beds in Yorkshire. The value of the produce from 122 yards of productive ridges is £3 2s. 10d. greater than that recorded as obtained by Mr. Barter, so that the difference between the expert cultivator and the "beginner" only amounts to 10s. 9d. This is sufficient testimony that the profits arising from a well-conducted system of Mushroom culture have not been over-estimated. Colonel and Mrs. Gascoigne are thanked for having fairly tested the system, and Mr. Dunn for carrying out their instructions so well.—J. W.]

BORDER CARNATIONS AND PICOTEEES.

THE annual displays of special groups of plants in Messrs. J. Veitch and Sons' Nursery, King's Road, Chelsea, at different seasons of the year attract numerous visitors, but one of the best of the summer shows is that constituted by the extensive collection of Carnations and Picotees in beds, and which is now in admirable condition. It is indeed only from such exhibitions as this that an accurate idea can be formed of the charms these plants possess; and though the conventional shows of blooms are beautiful and represent the finer properties of the flowers, much is lost in the unavoidable formality of their arrangement in stands. In beds, if the plants are neatly but not too rigidly staked, their natural grace is seen to the best advantage, and what a wealth of blooms they yield, varied in tint, and delightfully fragrant! There is another point in favour of this mode—namely, that numbers of useful and handsome varieties can be so grown that would not be admissible for exhibition purposes owing perhaps to some slight roughness that a strict florist would regard as an imperfection, but which a lover of flowers with less technical knowledge would not notice. Some of the most refined of the exhibition varieties are of delicate habit and increase very slowly, being in consequence unfitted for beds, where healthy masses and flowers by scores are required.

Carnations and Picotees are also distinguished by a quality which renders them of especial value to dwellers in towns or their suburbs, and this is their smoke-resisting power, which enables them to thrive luxuriantly where comparatively few other plants of equal attractions can exist. This recommendation cannot be over-estimated, and in no respect

has the popularity of the plants increased so rapidly of late years as for this purpose. There is, however, still abundant room for advance, and hundreds of persons with small gardens who are doubtful what to grow could not make a better investment than in a collection of Carnations and Picotees to form a bed that will yield them great pleasure during several weeks of midsummer. For small collections a dozen or twenty varieties will be sufficient, and if a bright effect is chiefly desired preference should be given to the selfs or flake varieties amongst the Carnations and the heavy edged or yellow ground Picotees. Where a larger and more generally representative collection is required some of all sections should be included, and an astonishing range of coloration can be thus obtained.

In the following list a selection is given of the best in each section, especial attention being paid to the suitability of the varieties for borders, the strongest growers and the most profuse flowers having the preference. They are named as nearly as possible in the order of their merit, and those who only require a small collection can select one or two of each class.

CARNATIONS.

Scarlet Bizarres.

Guardsman
Charles Turner
Titian
George
Gorgeous
Ben Simonite

Crimson Bizarres.

Harrison Weir
Alderman
Thomas Moore
John Harland
H. D. Southgate
Albion's Pride

Pink and Purple Bizarres.

William Skirving
Unexpected
Squire Llewelyn
Princess Beatrice
James Taylor
Sarah Payne

Scarlet Flakes.

Jupiter
Scarlet Keet
Dan Godfrey
Flirt
John Ball
Friar Tuck

Purple Flakes.

Mayor of Nottingham
James Douglas
Florence Nightingale
Purple Prince
Ajax
Mrs. Mills

Rose Flakes.

Mr. Matthews
James Merryweather
Jessica
Sybil
Lord Chelmsford
Rose of Stapleford.

Scarlet Selfs.

Magnum Bonum

Scarlet Selfs (continued).

Brigadier
Field Marshal
Vivid
Eclipse
Standard

Rose Selfs.

John Barnett
Celia
Mary Morris
Fair Imogene
Constance
Gertrude Teiguer

Purple Selfs.

Royal Purple
Lady Manners
Auctioneer
Improvement
Walter Ware
Evelyn

Crimson Selfs.

Crimson Clove
Amethyst
Ouida

Yellow Selfs.

Miss Mary Anderson
Belle Halliday
Florence
Cupid
Lord Tennyson
Drap d'Or.

White Selfs.

W. P. Milner
Duchess of Connaught
Ossian
Vigil
The Bride
Miss Marianne North

Fancy Varieties.

Sir Beauchamp Seymour
Grandiflora
Janira
Charles I.

PICOTEEES.

Heavy Crimson-edged.

Jewess
Lothair
Picturata
Dr. Epps
J. B. Bryant
John Smith

Light Crimson-edged.

J. D. Horner
Mrs. Bower
Thomas Williams
Grosteen
Emily
Mrs. Keynes

Heavy Rose-edged.

Rev. H. Matthew
Edith Dombrain
Lucy
Royal Visit
Louisa
Mrs. Payne

Heavy Purple-edged.

Admiration
Mrs. A. Chancellor
Rev. J. B. M. Camm
Beauty of Cheltenham
Medina
Novelty

Light Purple-edged.

Princess Dagmar
Minnie
Mary
Her Majesty
Clara Penson
Baroness Burdett Coutts

Yellow Ground Picotees.

Goldfinder
Princess of Teck
Solfaterre
Stanstead Beauty
Juliette
Prince of Orange

ROSE BARON DE BONSTETTEN OR MONS. BONCENNE.—I should like to ask, Is it an admitted fact that these lovely Roses are duplicates? As supplied to me from Swanley they are different in foliage, and somewhat in

blooms, colour, and size of petal. Passing this questionable point, which I find different in different Rose lists, I would like to ask you, Why is the former so seldom found on exhibition lists and winning stands? In shape it is faultless, and the deep dark crimson of the thick velvety petals is unrivalled by any other Rose I know, even by the much-abused A. K. Williams or Charles Lefebvre, which it resembles in shape and vigour. A point worth remembering just now with the temperature 82° in the shade is that those magnificent Roses should be cut in the early morning, when they last four times as long.—W. J. MURPHY, *Clonmel*.

STANDS FOR EXHIBITING GRAPES.

Will you give a drawing of an exhibition stand for Grapes at your earliest convenience in your Journal? Mr. Barron in his "Book on Vines" recommends one used by Mr. McIndoe. I would like to see it illustrated.—A. SUBSCRIBER, *Co. Dublin*.

[We have not an engraving of Mr. McIndoe's stands, but the following were supplied by Mr. Inglis two years ago, and as the number containing them is out of print they are reproduced with the notes pertaining to them.]

"It is much to be regretted that promoters of fruit shows do not name the size and shape of boards or boxes upon which Grapes are exhibited. Nothing that we can place on exhibition tables creates so much interest

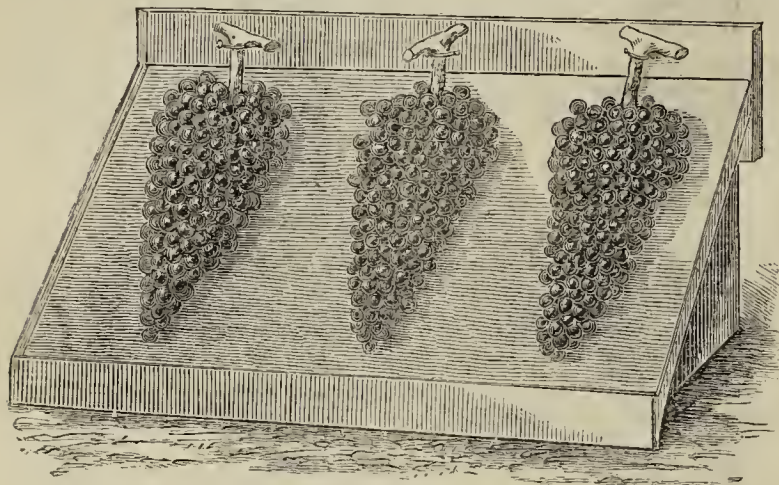


Fig. 12.

as Grapes, yet how often do we see them indifferently staged? Boxes and boards of all shapes and sizes, and of many angles, presenting when placed in a row a grotesque appearance when compared with uniform rows of Dahlias and other boxes which have been reduced to some sort of a standard.

"Some time ago I was much interested in watching the unpacking and staging of Grapes at a local show where they were well represented. The Grapes were a very good lot, and the majority of them were well staged, but owing to the different angles of the boards, some of which could not well be altered, they did not look so well as they might have done.

"I think the best and simplest form of box is that represented at fig. 12. The angle is 45° , and anyone can make one by the following directions. Get a piece of three-quarter-inch deal 10 inches wide by 12 inches long, cut it perfectly square at both ends, draw a pencil mark to correspond with the dotted lines in fig. 13, each 1 inch from the ends and parallel with them. This leaves the spaces, A B C D, a square 10 inches each way, and if cut through with the saw from B to D, and each set on its square, they will be of the desired angle. Upon these fix the board (three-eighths of an inch thick) for the Grapes to rest upon, which for this size will have to be about 14 inches wide. Another piece

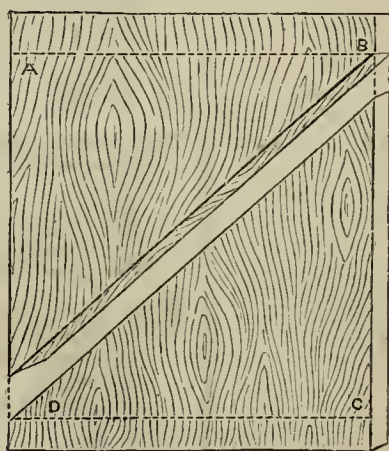


Fig. 13.

of deal (half inch thick) 6 inches wide is fixed at the back of the stand, and rising $2\frac{1}{2}$ or 3 inches above it, pierced with two holes opposite where each bunch is to be placed, by which means they are secured to the board

with twine or tape. A very thin lath about 2 inches wide is fixed along the front, its upper edge rounded off and standing a little above the board, and similar pieces at each end forming a narrow beading all round, makes the stand look neat. As to length, each bunch should have 8 or 9 inches of board; thus a box for three bunches should be 27 inches.

"Fig. 14 shows the Grape stand in a box ready for travelling. It should be just large enough to hold the stand, should be light, and have a handle fixed in the centre of the top to carry it by.

"Fig. 15 is a simple form of board, supported behind by two legs, connected by a lath and generally held in position by a piece of twine, but instead of that it would be preferable to have short spikes as at A A, so that when on the table it can be placed at any desired angle, the spikes

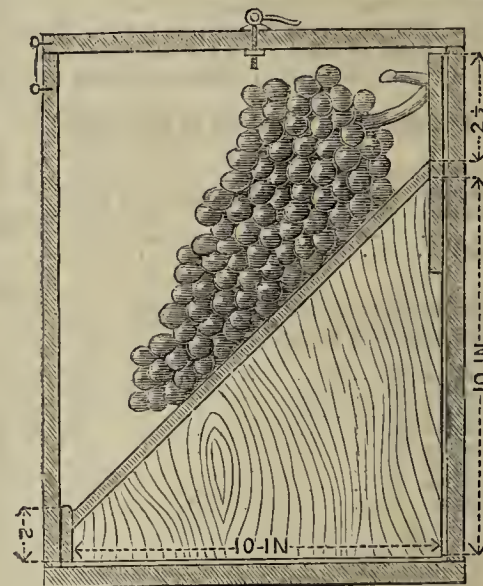


Fig. 14.

keeping it from slipping about. This can be placed in a box the same as at fig. 14, the legs of the stand being laid parallel with the board.

"Some exhibitors place their Grapes on the bare boards. A better plan, I think, is to place a covering of cotton wool all over the board, leaving about an inch clear all round the outside. With a small brush apply some gum or paste just inside the beading, and have a sheet of white tissue paper ready to cover the whole of the cotton wool, and adhere to the stand round the edges. Examine each bunch before laying it on the board and place it on its flattest side, and secure it by means of string or tape, as shown at fig. 12; or if the bunches are large the tape may be placed round the junction of the shoulders of the bunch, placing the bunch higher on the stand than is here shown, at the same time twisting the stems of the bunches along the face of the upright board, so that they do not come in the way when placed in a box. When large bunches have to travel some distance it is desirable to have them secured to the board

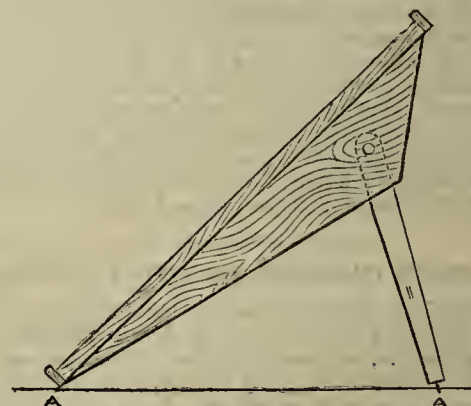


Fig. 15.

about the middle of the bunch. Two small holes should be made in the board under each bunch, and by means of a small packing needle carefully pass a piece of narrow tape up from below through the bunch and down again on the opposite side of the main stem of the bunch, using a pencil to guide the needle amongst the berries, which must not be touched with the hands. This should be tied just tight enough to steady the bunch. The figures added to fig. 14 are the measurements of stand fig. 12 in section. If some such standard were given in our fruit schedules it would be better than leaving everyone to make their own standards."

LILIUM CANDIDUM IN WINTER AND SUMMER.

SOME years ago I pointed out in these pages the value of this Lily for pot culture, and was pleased to observe Mr. Young's communication on the subject. When this variety is grown in pots and forced into flower early in the season and kept for a time indoors, afterwards carefully treated, it will commence throwing up again in autumn, and frequently

flower about Christmas if kept in a growing temperature. Those desirous of cultivating this Lily to flower early should obtain bulbs and pot them directly they arrive in this country, which is generally about the middle of July. This season they were offered me about a fortnight ago. When the bulbs are to be lifted from outside borders it should be done about a fortnight after they cease flowering, for directly this Lily has done flowering it commences to grow, and therefore the sooner lifting is done the better. It is unnecessary to plant them out after retaining them for two years in pots. I have the same bulbs in pots now for flowering next year that have flowered for the past seven years. They have never been out of their pots except when repotting them. The plants alluded to have done quite as well this year as they did the first or second they were placed in pots, many of the flower stems attaining a height of from 5 to 6 feet, some of them carrying as many as sixteen flowers.

Many persons have no idea of the large number of flowers this grand old Lily is capable of bearing upon one stem. I have to be seen by any one at the present time flower stems over 6 feet high with twenty-seven flowers and buds upon them, all of which will open. These bulbs (imported ones) were planted in light sandy well-manured soil in August, 1883, and bore one spike of flowers each the following season. They have this year thrown up from two to four spikes, the majority having three. On one just counted there will be seventy-one flowers—twenty-seven on the strongest, twenty-four on another, and twenty on the weakest of the three, some others probably having more flowers on their four spikes. I have several hundred bulbs, and I think not one has failed. This I consider the most valuable Lily in cultivation for grouping in masses or for mixing in herbaceous or shrubby borders, to say nothing of its value for cultivation in pots. I have never known it fail, whether planted in light or heavy soil. It thrives here admirably, and equally well in the heavy wet land of the Lincolnshire fens, as well as in various other parts of the country in which it has been my lot to practise from time to time.—WM. BARDNEY.

DOCTORING PLANTS—AMMONIA.

IN cold bleak spring weather, such as characterised the present year, many crops—e.g., French Beans, come up yellow, weak, and miserable. It is usual to root them up and re-sow. I prefer another course. I wait until the weather becomes warm and settled and then give them a dose of the "doctor," which is prepared as follows. Take 1 lb. of the strongest spirits of ammonia, price 9d., and mix it in a quart bottle with a pint of rain water. To eight gallons of ordinary water add two fluid ounces of the solution of ammonia, and then well water the plants with this weak solution. The result is surprising. Two waterings will restore the plants to an exuberant vigour with dark emerald leathery foliage.—W. M.



At a meeting of the ROYAL HORTICULTURAL SOCIETY, held last Tuesday, E. G. Loder, Esq., in the chair, the following candidates were unanimously elected Fellows—viz., Richard Cane, Henry Ellis, John S. Mather. In addition to the above the following were elected Foreign and Corresponding Members—viz., H.M. the King of the Hellenes, K.G.; His Majesty the King of the Belgians, K.G.; H.S.H. the Duke of Saxe-Coburg Gotha, K.G.; H.S.H. the Grand Duke Nicholas of Russia; Rev. M. J. Berkeley, F.R.S.; Edmond Boissier, Alphonse de Candolle, Professor Asa Gray, Lieut.-Gen. II. E. de Greig, Sir J. D. Hooker, K.C.S.I., C.B., F.R.S.; George King, M.B., F.L.S., Sir Ferdinand von Mueller, K.C.M.G.; Charles Naudin, Sc.D.; Professor J. E. Planchon, Dr. E. de Regel, Professor H. G. Reichenbach, Dr. Richard Schomburgk, Lewis A. Bernays, Professor Maxime Cornu, Casimir de Candolle, Count Oswald de Kerchove de Denterghem, A. De la Devansaye, Professor Du Breuil, Dr. A. W. Eichler, O. Fenzl, Count Francis von Hohenstein, Fr. de Caninaert d'Hamale, Dr. A. J. Keiner, Professor Peter Macowan, B.A.; Max Leichtlin, Charles Moore, F.L.S.; Dr. Edouard Morren, Baron Edward Oppenheim, Professor C. S. Sargent, Henry L. de Vilmorin, Sereno Watson, H. Wendland.

— SUTTON'S EARLY SNOWBALL TURNIP is recommended to us by "Navet," who says "it is the finest type of the much-valued Snowball I have had in my garden. It is perfect in form, grows to a large size before becoming hot, and is most delicate in flesh and fine in flavour. For exhibition or in the kitchen it would be difficult to name a better."

— WE may remind our readers that an important HORTICULTURAL EXHIBITION will be held in ANTWERP, August 2nd to 6th, in conjunction with the HORTICULTURAL AND BOTANICAL CONGRESS from the 1st to the

10th of August, which will undoubtedly attract numerous visitors from England. No less than 132 classes are provided, the prizes consisting of two medals in each, gold, silver-gilt, and silver according to the importance of the exhibits. The classes are grouped as follows:—New plants, introductions or seedlings, eleven classes, the principal prize being a gold medal offered by the King of the Belgians for a collection of twenty-five plants introduced to Belgium since 1882; plants remarkable for their culture or flowers, nine classes; general collections of flowering or foliage plants, eleven classes. Special collections, which will form the bulk of the Exhibition, have classes devoted to Ferns, Cycads, and Conifers, Palms, Aroids, Marantaceous and Liliaceous plants, Bromeliaceous plants, Orchids, carnivorous plants, Euphorbias, Protias, Aralias, Begonias, and many others. Classes are also provided for baskets of flowers, bouquets, garlands, and table decorations. At the Congress a variety of subjects will be discussed, and an excellent plan has been adopted of printing and distributing the principal papers to be read, so as to give those who intend taking part in the discussion an opportunity of considering the subjects. Many horticulturists will no doubt avail themselves of this opportunity to visit Belgium, and the new day service of the Great Eastern Company, *via* Harwich, on Wednesday and Saturday, will be welcomed by numbers of those who do not enjoy night travelling.

— A CORRESPONDENT writes:—"Those who require CABBAGE OF MEDIUM SIZE EARLY IN THE SPRING should sow at once Ellam's Early Dwarf, for it is undoubtedly the best of all small early varieties either for spring or autumn. Ever since it was sent out I have been testing it by the side of two or three other varieties each season, and in every instance it has turned in first, while scarcely one has run in a large batch. It is a grand Cabbage, and those requiring moderate-sized, firm compact heads early or all the season will not be disappointed with it. It only needs to be planted 1 foot apart each way.

— A LARGE exhibitor of plants states that the CROTONS in Messrs. R. P. Ker & Sons' Nursery, Aigburth, Liverpool, are now really magnificent. The secret of their success with these plants is striking large strong healthy cuttings and then growing them rapidly. The plants being young are very luxuriant, consequently they develop wonderfully large bold foliage. The house in which the plants are grown is admirably suited for them. It is a long narrow rather flat-roofed structure, and the plants are arranged down the centre close to the glass and exposed to full light, which is essential to colour them so perfectly as Mr. Ranger succeeds in doing.

— MR. T. W. SANDERS, The Gardens, The Firs, Lee, writes:—"Herewith I send you blooms of a very useful sweet-scented annual—the Sweet Sultan. I have sent three varieties, which, in my opinion, rank among the most useful and most beautiful of annuals for affording a supply of cut flowers. It is a pity such charming flowers should not be more generally grown." The flowers sent are both fragrant and attractive, and will last as long in a cut state as any other annual, and much larger than the majority.

— AMONG the NEW FUCHSIAS in the collection of Messrs. Veitch and Sons at Chelsea are two that appear highly promising for decorative purposes—namely, General Roberts and Edith Todman. The latter is a light variety—that is, having a white tube and sepals, and half-reflexed cerise-coloured corolla of great substance. The plant, a free yet sturdy grower and profuse bloomer, in these respects resembling the favourite market Fuchsia, Lady Heytesbury, and will be acceptable for various decorative purposes. General Roberts is a dark Fuchsia, remarkable for its freedom of growth and long racemes of pendent flowers. It may be quickly grown into a large specimen, while for pillars or roofs it has no superior and few equals. The corolla, pistil, and peduncle are of unusual length, these together, in a flower before us, measuring 9 inches. The tube and sepals are scarlet, and the corolla a reddish plum colour. It is very graceful and effective.

— IN the same nursery is an imposing display of LILIUM AURATUM, hundreds of plants flowering with great freedom in 4½ and 5-inch pots; but more particularly striking are wonderfully strong examples of the varieties virginale and platyphyllum. These bear some resemblance to the type, yet are quite dissimilar both in foliage and flowers—one, virginale, having pure white segments of great substance, with a bright golden bar, and is very beautiful; the other has dark broken lines on a white ground, not spots like L. auratum, and the character of the plants is distinct. They are strong growers, and fine both for conservatory and garden decoration.

— RESPECTING EARTHING UP CELERY, "An Old Grower" recommends that unless it is required very early in the autumn, earthing up should be deferred until it is almost full grown. It is then cleaner and firmer than when earth is put to it from the first and at different times throughout its growth. From three to four weeks is sufficient to blanch it, and his December Celery is not earthed up until early in November. Worms are not plentiful then, and they rarely injure it, while loss from damp is trifling, as the stems are so hardy before the soil is put against them.

— "A KITCHEN GARDENER" says that his best SUMMER CABBAGE LETTUCES this season are Veitch's Perfect Gem and Webbs' Summerhill. The former is close-growing, very compact, dark green, and good in flavour; the latter, the largest of all, remarkably tender and deliciously crisp. Those who grow these two fine Lettuces from April until October will never be without material for first-rate salads.

— WATERING WINTER-FLOWERING PLANTS.—Owing to the incessant demand for water at the roots of rows of Peas, Beans, Califlowers, Lettuce, and Celery plants, pot Strawberries, &c., consequent upon the long spell of tropical heat, winter-flowering plants which had been planted out in a suitable situation and soil early in June are likely to get overlooked in the matter of applying water to their roots. Where this has been the case no time should be lost in giving them all a good soaking. Plants of the Calla (*Richardia æthiopica*), which is a particularly moisture-loving plant, are more likely to suffer from an insufficiency of water at the roots than are any of the other plants which are subject to the same treatment as they are. Therefore, in the absence of rain the plants should have frequent and liberal supplies of water to encourage growth, which is unusually backward in these plants this year.

— AN AMERICAN HAILSTORM.—A despatch from Poughkeepsie, New York, dated 6th inst., says:—At Chatham, Columbia County, hailstones fell last night measuring from 1 to 4 inches in diameter. People were knocked down and severely wounded; horses ran away in fright; dogs went yelping up the street bleeding from cuts; tin roofs were perforated; corn was cut away entirely, leaving only the stalks standing, and robins, sparrows, and other birds were found either dead at the foot of trees or with broken wings or legs. The storm was apparently about four miles in width, and did not last over ten minutes. Hardly any wind accompanied it, and but little thunder and lightning.

— STEPHANOTIS FLORIBUNDA.—Two plants of this popular stove climber, popular by reason of the chastity and sweetness of its pure white flowers, which are growing in 14-inch pots, resting on two hot water pipes, as they have for years past, in the central pit of a small stove not far from where we write, yield annually a profusion of large trusses of finely developed flowers. The shoots, which at the present time are showing trusses of flowers from the axil of every leaf to the tips of the young growths, are trained to a trellis fixed underneath the roof, and over the sides of which well-flowered shoots depend gracefully and effectively when contrasted with a variety of other flowering plants—Ferns and Palms, with which they intermix. These plants were somewhat reduced at the roots last spring prior to potting them in well-drained pots in a mixture of two parts peat and one of loam, with sufficient sharp sand added to keep the whole open, and after the roots had pushed well into the new soil they had a surface dressing of Beeson's manure once or twice a week, the virtues of which repeated waterings wash down to the roots with considerable advantage to the plants.

— IN the same house is a well-flowered plant of ALLAMANDA HENDERSONI growing in a 10-inch pot, the shoots being trained up to a trellis underneath a portion of the back part of the roof. The large handsome trumpet-shaped flowers, of a beautiful soft yellow in colour, of this easily managed and very showy stove climber, command nearly, if not quite, as much admiration from lady visitors as the more chaste and sweetly scented Stephanotis does. The treatment accorded to the latter, as regards potting and watering, is found equally suitable for the Allamanda, as well as for a similarly grown plant of *Clerodendron Balfourianum* at the other end of the house.

— NATIONAL PEAR CONFERENCE, 1885.—The crop of Pears this present season being generally abundant and good, an extremely favourable opportunity is presented for the examination of the numerous varieties cultivated throughout the country. The Council of the Royal Horticultural Society has therefore decided to hold a conference on Pears (of a similar character to that so successfully adopted in regard to Apples

in 1883), in the great conservatory at Chiswick, commencing on the 21st October next. This conference will not assume the form of an ordinary exhibition—there will be no competition and no prizes—the objects being the dissemination of useful knowledge on the varieties most suitable for cultivation, to compare their merits and to correct their nomenclature, and generally to render the meeting instructive to fruit-growers. The collection of Pears grown in the Gardens, which contains many typical varieties, will be available for comparison. Growers of fruit will have in this Exhibition an opportunity of correcting or verifying the nomenclature of their own fruits, by bringing specimens with them and making a personal examination. Every possible assistance will be given by members of the Committee to such inquirers. All fruit-growers are invited to contribute, and the more widely the collections are procured the greater will be the interest created. No limit will be placed on the number of varieties anyone may see fit to send, and it is not necessary that they should be the products of his own grounds. The Council desires that an effort be made to procure representatives of all the varieties that are grown in the various districts, and that all should be distinctly labelled with the name or names under which they may be grown in their respective localities. It is very desirable that every collection should be accompanied with as much information as can be furnished with regard to soil, stocks, exposure, and physical conditions of the districts from which they are gathered, &c., to aid the Committee, if necessary, in drawing up their report. Cards and forms for this purpose will be supplied by the Secretary to all exhibitors on application. The specimens being strictly for examination, they must necessarily be at the disposal of the Committee where required. As the early varieties of Pears will be over before the time fixed for the conference, it is desirable that specimens of these be sent to any of the meetings of the Fruit Committee preceding the conference. These should be addressed to the Secretary, Fruit Committee, Royal Horticultural Society, South Kensington. Exhibitors are requested to send not less than two or more than six fruits of a kind for the purposes of comparison. Notice of intention to exhibit must be given to the Secretary, Mr. Barron, not later than Wednesday, the 14th October, stating the number of varieties to be exhibited and the amount of space that will be required. Consignments of fruit—to be staged by the Committee—should be addressed to the Secretary for delivery on or before Monday, the 19th October. The carriage will be paid by the Society. Heavy packages to be sent per goods train. Exhibitors staging their own fruit may do so on Tuesday, the 20th, or on the morning of the 21st, so as to be ready for the inspection of the Committee at 1 P.M., when the Exhibition will be opened. All exhibitors will be admitted to the Gardens free, and will receive tickets in proportion to the extent of their exhibits for the admission of friends.

GRAPES CRACKING.

It appears by "A Thinker's" last letter that he is highly pleased with the progress he has made in converting his opponents in this discussion to his own view of the manner in which he thinks endosmotic action takes place in Grapes, causing some varieties to crack. He makes it appear that in my first letters on this subject I totally denied the existence of the principle of endosmose. He is entirely mistaken. What I have all along said, and still maintain, is that vapour does not pass through the skins of Grapes and in this way cause them to crack.

"A Thinker" argued that because the Grapes shown at Manchester by Mr. McIndoe cracked in the tent there, being separate from the Vine, the excessive moisture which caused them to burst must necessarily have found its way into the berries through the skins, as it could not be supplied by the Vine then so many miles away. To illustrate that vapour might find another channel to get into the berries, I pointed out that cut flowers and vegetables after separation from the roots drew their supply of moisture through the cut stem, but I did not for a moment think that this could be construed to imply a denial of the action of endosmose through the leaves and petals of flowers and vegetables.

I believe also in endosmotic action in all kinds of fruits, but in quite a different way from that upheld by "A Thinker." It acts through the roots and stems, and even when the former are absent it takes place through the stem alone for a time when circumstances are favourable. But to excite this action to a strength sufficient to burst the berries of thin-skinned varieties of Grapes or Cherries either, the temperature must be high, accompanied with sufficient moisture.

To my mind, if the skins of Grapes were porous and favourable to the actions of endosmose and exosmose, Mr. McIndoe's Grapes at Manchester would have cracked on the second or third day of the Show, as it rained on these days, and, consequently, the atmosphere would be loaded with moisture; but, instead of that, it apparently took place on the fourth and sunny day. Would vegetables and flowers which freely admitted the action of endosmose direct through their leaves and petals not have been most charged with moisture on the wet and sunless days, while on the hot day

they would show signs of suffering for want of moisture? On the contrary, the Grapes, which I maintain are not possessed of porous skins, got charged through the stem to such a degree on the hot and sunny day that the skins burst. Does this show a similar endosmotic action in both cases? The degree of temperature may not be of much importance in cases where endosmose acts direct through animal or vegetable membranes, so long as the denser and thinner fluids are present; but where it acts (as I believe it does) differently, as in the case of fruits, a high degree of temperature is indispensable; but if it be not as I take it to be, but simply a question of the quantity of moisture acting on the skins of fruit, as "A Thinker" maintains, why were the Frontignans mentioned by him in his last letter placed in a damp box and kept close in a warm house to cause them to split? "A Thinker" says that Mr. McIndoe's Grapes at home on the Vines had ten times more moisture supplied by the roots, and remained sound. It would be interesting to know how he has arrived at this conclusion. How has he found out the quantity of moisture supplied by the roots to these Grapes? I have no doubt that if the Grapes at home had been treated with the same atmospheric conditions the result would most likely have been the same in both cases, as those at home would have imbibed through the roots what the others had done through the stem.

I gather by "A Thinker's" letter that he is under the impression that he has brought to light a principle of whose existence gardeners had been quite unaware. He is, in my opinion, mistaken; it is his application of this long-known principle that is denied by—HUGH HENDERSON.

SOME ROSE SHOW NOTES.

CRYSTAL PALACE.—Of the chief Rose shows at which it was my good fortune to be present, the Crystal Palace, to my mind, was by far the best as regards the quality of the blooms, which were for the most part well built and of good colour; moreover, they stood well. Whether this Exhibition happens to be an early or late fixture, it generally carries off the palm as the best, not perhaps as to quantity but quality. There was a fair show of Teas, but, on the whole, not, I think, equal to the Teas staged here last year.

NATIONAL, SOUTH KENSINGTON.—This was, of course, numerically the largest show, but the heat of the place severely tried the blooms. Exhibitors set up Roses with good plump centres, and half an hour before the judging many of them were wide awake, gazing at you with their yellow eyes, and I for one don't like to be looked at by a Rose. Few fully developed flowers could stand the heat of the conservatory, small young blooms being the safest to stage. Besides, I saw several boxes awaiting the Judges with the sun shining full upon them. In my opinion, but it is not worth much, the conservatory of the R.H.S. is not sufficiently large, cool, or shaded for the great exhibition of the National Rose Society. But for the heat and its effect, the Show was one of the best the Society has held. I was glad to welcome the presence of "Her Majesty" once again, with "Mrs. Laing" in attendance. Is it treason to say of the two, I prefer the latter? Mr. Bennett is to be congratulated.

BEDFORD.—Of provincial shows there were two that struck me as being most successful—viz., Bedford and Norwich. Of the former, since it has been noticed in your columns, I will only say how much I agree with the remarks of your reporter, and, judging from the competition that took place, thanks to the ladies of Bedford, amongst eight or nine well-known growers for sale, and that amateurs were attracted from Brighton and Bath, if the Committee will adhere to the present date, and enlarge their schedule as suggested, I think that next year we may expect to see at Bedford a first-class Rose show. Mr. Burrell had the finest Tea I have seen this season, *Boule d'Or*. Why was there no medal for it?

NORWICH.—No report has as yet appeared in your pages of the Norwich Show, which Society is affiliated with the National Rose Society. It deserves a better one than I can give it, writing, not from notes, but from memory. The Exhibition was held in the Bishop's garden, not in a field, but on the lawn, and very charming it was with the tents arranged under the trees and in close proximity to the walls of the fine cathedral. The order was good, and the judging true to time. The trade was not so strongly represented as at Bedford, but the amateurs made up for it, for in this section there were staged eight stands of thirty-six, ten of twenty-four, four of twelve trebles, twelve of twelve of one sort, and a very fine exhibition of Teas, just what one would expect from such a Tea-growing county as Norfolk. If the ladies of Norwich would follow the lead given them by their sisters of Bedford, the eastern counties would possess a first-rate Rose Society. Poor Caroline Kuster to be jilted so cruelly!—JOHN HOPPER.

STAMFORD HORTICULTURAL SOCIETY.

The second annual Show of this revived Society was held on the 21st inst. under much more favourable circumstances than last year's exhibition. The day opened dull and hazy, but with a rising barometer, and eventually the sun appeared and brought a good attendance of visitors, which was doubtless considerably augmented owing to the kind appeal of the Mayor to the tradesmen of the town to support the Show by closing their shops earlier than usual.

In the class open to all England the competition was very good considering the amount offered in prizes, the funds unfortunately not permitting a very long prize list. The chief prize offered was for a group of plants arranged for effect, and was secured by Mr. Wilson, gardener to the Earl of Lindsey, for a fair group of miscellaneous plants, the second prize going to

Messrs. W. & F. Brown for a very close stiff clump of plants with a fine spike of *Yucca gloriosa* in the centre. The compact nature of this group would have disqualified it at a larger show. Mr. Winn, gardener to J. R. Lowe, Esq., was placed third. Another group was arranged by Mr. Divers, gardener to J. T. Hopwood, Esq., much lighter and more natural in appearance, but deficient in flowering plants. For six stove and greenhouse Ferns Mr. Divers was awarded first prize, Mr. Winn second. The prizes for Coleus only brought two competitors—Mr. Wilson first, Mr. Winn second, the plants of the latter being the better for health and colour, although rather flat in shape. Pelargoniums, Fuchsias, and table plants were represented by neat specimens. The show of Roses was remarkably good considering the dry weather lately in this locality. Mr. House of Peterborough was awarded first for thirty-six trusses, and was the only exhibitor of that quantity. For twenty-four trusses Messrs. W. & J. Brown of Stamford were first, Mr. Wilson second. Cut flowers of stove and hardy border plants were much better shown than last year, the latter class containing some very good things. The prizes in most instances fell to Messrs. Brown and Mr. Wilson. Messrs. Brown were also deservedly placed first in five different classes for arrangement of cut flowers—viz., buttonhole bouquets, ladies' sprays, bride's bouquet, hand bouquet, and vase of flowers for dinner table; their exhibits displayed great taste and lightness of arrangement, and were very much admired. Mr. Divers was second for buttonholes, Mr. Gilbert for brides' and hand bouquets, and D. J. Evans, Esq., for vase for table.

The principal prize offered for fruit was for a collection of eight varieties, and was awarded to Mr. Divers, who showed a good Charlotte Rothschild Pine, Black Hamburg Grapes, Early Albert Peaches, Elrue Nectarines, Early Rivers and Governor Wood Cherries, Sir J. Paxton Strawberries, and Lord Suffield Apples: this was the only collection shown. For Grapes Mr. R. Gilbert was as usual a capital first, having three fine bunches of Black Hamburg and three of Muscat of Alexandria. The same exhibitor also took first honours for six Peaches; second Mr. Divers. For six Nectarines Mr. Wilson was first with Lord Napier; Mr. Divers second with Early Newington. Melons were poor in flavour and very scarce, only one green and scarlet flesh being shown.

In Strawberries the competition was very small. Mr. Wilson took first prize for four dishes; Mr. Divers second; and for a single dish Mr. Wilson was again first with Dr. Hogg; Mr. Gilbert second with Oxonian; Mr. Divers third, also with Oxonian.

As usual the premier prize for a collection of ten varieties of vegetables fell to Mr. R. Gilbert, the fresh healthy appearance of his collection showing forcibly the advantage of a deep and good soil in a dry season. Particularly noticeable were his White Elephant Onions, which would have been very difficult to beat anywhere, one of them measuring 17 inches in circumference. He also showed Radstock Beauty Potatoes; Globe Artichokes, very good; Mushrooms, Canadian Wonder Beans, Intermediate Carrots, Utrecht Market Cauliflowers, very solid and good; Telegraph Peas, Tomatoes, &c. Mr. Winn was placed second, showing good Onions and Turnips. Mr. Divers third, having good Celery, Onions, Mushrooms, &c. For twelve Tomatoes Mr. Divers was easily first with good specimens of Hathaway's Excelsior. Mr. Winn second. For one dish of Peas Mr. Divers was first with President Garfield, Mr. R. Gilbert second; and for four dishes the same exhibitors were *vice versa*.

In Class B, for persons not employing more than one gardener, the four Ferns shown by Mr. Pridmore, gardener to Miss Thompson, Stamford, deserve especial mention for their fresh and healthy appearance, also the Roses shown by Mr. Duncomb and Mr. Canner.

The cottagers were very good in the vegetable classes, especially Tripoli Onions and Potatoes, the former being so good that the eleven collections shown were all awarded a prize each. The Grasses and wild flowers were very good also in this tent. Some good honey, &c., was shown, and a fine plant of *Disa grandiflora* grown by D. J. Evans, Esq., not for competition. Mr. Redshaw of Bourn also exhibited a good collection of rustic garden furniture very tastefully made.

ORCHIDS IN VINERIES.

The best and most general combination of Orchid plants and Grape Vines I have yet seen are under Mr. Hill's care in the garden of H. Little, Esq., Hillingdon Place, Uxbridge. The vineries are of the usual lean-to type, with the Vines planted in front, and the rods and branches trained overhead. There is a shelf all round the front, and a stage in the centre, going up step by step on the same incline as the roof. It is these shelves which are filled as full as they can be with Orchids.

The front shelves contained about 200 plants of *Cattleya Trianae*, some of them being grand masses 4 feet through, and showing eighteen and twenty young growths. They were exceedingly healthy, and fibrous peat and sphagnum moss was their rooting mixture. *Dendrobium Dearei* was in full flower on the back stage. It was bearing nineteen spikes of its handsome white flowers, there being from twelve to fifteen blossoms on each spike, and it was a very beautiful object. Some plants of *Dendrobium Falconeri* were 4 feet through and exceedingly healthy.

A plant of *D. Devonianum* had produced 400 blooms, and had some dozens of healthy growths. *D. Dalhousianum* had produced seventeen spikes. This was a fine plant. Closely packed together on one part of the stage there were 150 plants of *Lycaste Skinneri*. They had capital fresh well-developed pseudo-bulbs, and many young growths. I counted the old flowering spikes attached to one growth, and they numbered ten. These were all open at one time early in the summer. *Cypripedium barbatum* superbum at one end of the vinery was bearing twenty-three blooms, some of them 4 inches across. *C. Lawrenceanum* had eighteen spikes of fine blooms; one twin purse was curious on this plant. *Masdevallias* were very luxuriant. *Laelia purpurata* was flowering freely, one plant in a basket 3 feet square was a superb specimen. A plant of *Cattleya Skinneri* had thirty leading growths. There were other kinds not specified here doing equally well, and Mr. Hill is to be complimented on the excellent success he has secured with the Orchids in vineries.

The majority of the plants remain there all the year round, and prove

very conclusively how much may be accomplished with them under conditions of the same kind when their cultivation is guided with skill and energy. "What about the Grapes?" Well, they were in good health, with plenty of clean foliage, and bearing an average crop. Many of your readers will be familiar with Mr. Little's productions in the way of Cyclamens, Pelargoniums, &c., which figure so conspicuously at the London spring shows; and if I was an Orchid competitor I would feel rather uneasy with the idea of what is likely soon to be seen from Hillingdon. Other Orchids merit notice, but as they were not under the Vines my notes on them are held over.—M. M.

NOTES FROM HANDSWORTH.

GOING through the glass department of the famed Handsworth nurseries we cannot help admiring the healthy character of the general stock, and of the hybrid greenhouse Rhododendrons in particular. House after house is filled with magnificent plants of all the newer varieties now in commerce, and scores of fine specimens are placed out of doors in nursery quarters, and protected from inclement weather by screens of tiffany. Handsworth is also famous for Lapagerias, which are there propagated in thousands annually, and hundreds of plants in 12-inch pots and trained up strings to a height of 10 feet, strong and vigorous, are to be seen out of doors and on the north side of a high hedge. These are sure to make rapid progress when planted out in their permanent positions. In passing from one house we saw two large tubs filled with water, and containing vigorous young plants of the common, but chaste and beautiful, white Water Lily (*Nymphaea alba*), which is within the reach of everyone; the roots are in 6-inch pots, and consequently can be removed without injury.

Amongst the beautiful Orchids in flower was particularly noticeable a fine plant of *Brassavola Digbyana*, bearing a large flower with very pale green sepals and petals, and a large lip most beautifully fringed, and rich creamy white in colour—altogether a very striking flower. *Phalaenopsis* are well grown at Handsworth, and produce leaves of great length, breadth, and substance. In the same house are some good plants of the charming *Bertolonia Van Houttei*, a plant worthy of more general cultivation, and close by are some good plants of the noble-looking *Sphærogyne latifolia*—a fitting companion for the rightly named *Cyanophyllum magnificum*. In an adjoining house are some good plants of the exceedingly beautiful *Dracæna Lindenii*, a variety that should be in every garden where *Dracænas* are grown. In one of the large cases devoted to Filmy Ferns are some splendid examples of *Todea superba* and *T. pellucida*, *Hymenophyllum demissum*, and *Trichomanes radicans*. *Camellias* are there in thousands, healthy, clean, and luxuriant; and *Azaleas*, *Roses* in pots, *Pelargoniums*, and miscellaneous Orchids are all that could be desired, and indicate the ability and indefatigableness of Mr. Williams, the foreman and manager of the glass department.—J. U. S.

NEWCASTLE AND DURHAM INCORPORATED HORTICULTURAL AND BOTANICAL SOCIETY.

THE summer Show of the Society was held on Wednesday, Thursday, and Friday last in Leazes Park, Newcastle. The park was originated by Mr. Alderman Charles Hammond, now chairman of the Parks' Committee, and is in close proximity to the business centre of the westend. Till within thirteen or fourteen years ago Newcastle was without any parks except the town moor. Now it embraces four parks, all in excellent condition, and of easy access from every part of the town. The Committee of the Flower Show are therefore favoured with a suitable *locale* for their exhibition. The staging committee (Messrs. Balfour and E. Wilson), the tent committee (Messrs. Dunning, Gascoigne, and Nesbit) were indefatigable in doing everything that thoughtful care could suggest in bringing the Show to a successful issue.

Referring to the exhibitions the grouped plants were excellent. The eight and six stove and greenhouse plants were certainly such as had never been surpassed or equalled in a previous exhibition, while the entries in all classes were numerous. For eight plants in bloom Mr. H. Johnson, gardener to J. B. Hodgson, Esq., Elmridge, Darlington, was first. The *Ixoras Williamsii* and *Dixiana* were both fine plants, large in truss, and firm. *Allamanda Wardleyana*, *Clerodendron Balfourianum*, *Ericas amula*, *retorta*, and *Turnbull's Shannoni* were excellent and told well. A fine plant of *Statice profusa* completed the eight. Mr. J. Cypher, Cheltenham, was second with good *Ixoras regina* and *amabilis*, *Bougainvillea glabra*, *Phænocoma prolifera*, and the charming *Erica Parmenteriana rosea*. For the eight foliage plants the Society offered £26. For eight foliage plants Mr. J. Hammond, gardener to Sir Wilfrid Lawson, Bart, Brayton Hall, was first. In this stand were four *Crotons*, averaging 6 or 7 feet high. Mr. Hammond evidently makes a speciality of *Crotons*, and is a successful grower. The names were *inter-ruptus aurea* (with its striking characters well brought out), *majesticus*, and *Queen Victoria*. There were, in addition, *Kentia Fosteriana*, *Dicksonia antarctica*, *Dasylirocn glaucum*, and *Phoenix reclinata*. Mr. A. Methven, gardener to E. Lange, Esq., Heathfield House, Low Fell, Gateshead, was second. His plants were *Cycas revoluta*, *Crotons pictus* and *Victoria*, *Encephalartos natalense*, and *Kentia Fosteriana*. Mr. J. Cypher was third. For three *Crotons* Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington, was first with *Warreana*, *Queen Victoria*, and *majesticus*. Mr. J. Hammond was second with *Mortii*, a seedling, and *Hammondi*. The latter is Mr. Hammond's own raising. It is in the way of *majesticus*, but shorter in the leaf, good in colour, and excellent in habit.

The group of miscellaneous plants 20 feet by 10 feet was certainly the admiration of every critic. Mr. Hammond well won the chief position. In the background were tall Palms relieved by three finely coloured *Crotons*, all healthy, and contrasting effectively with some *Dracænas*. The ground-work was composed of *Adiantums*, from which were springing *Acalyphas*,

Hydrangeas, *Eulalia japonica*, and various flowering plants, including *Oncidium sphacelatum*, and *Odontoglossum Alexandræ*. This group was edged with *Panicum variegatum*. Mr. J. McIntyre was second with a creditable group. White Lilies, *Acalyphas*, *Dracæna Goldiana*, *Kalosanthes coccinea*, with its agreeable perfume, were used effectively.

For six exotic Ferns Mr. H. Johnson was successful in securing the first place with fine examples of *Adiantum farleyense*, *Gleichenias rupestris* and *Mendelli*, *Davallia Mooreana*, and *Microlepia hirta cristata*. Mr. J. Hammond was second, his best plants being *Gleichenia rupestris*, *Davallia Mooreana*, and *Platynerium alaicorne*. Mr. J. Noble was third. For four *Ericas* Mr. J. Cypher was first; also for six Orchids. For twelve bedding plants Mr. A. Methven was first with plants in excellent condition. Alpine plants, *Sempervivums*, and *Sedums* in a collection of twelve plants were also shown; Mr. Richardson was first in each class, followed by Mr. J. McIntyre. For tuberous-rooted *Begonias* and *Dracænas* Mr. Noble and Mr. Hammond were first respectively.

CUT FLOWERS AND TABLE DECORATIONS.—These were as usual much admired. *Roses* in the north are very good this year. Although Mr. Whitwell was second to Messrs. Harkness in both forty-eights and thirty-sixes it was very close, and must have caused the Judges to weigh carefully to find the best stands. Messrs. Harkness's best flowers were Duke of Edinburgh (good), Alfred Colomb, Abel Carrière, Constantin Tretiakoff, Exposition de Brie. Mr. E. R. Whitwell's consisted of Madame Lacharme, Madame Lambard, Innocente Pirola, Marie Baumann, Sultan of Zanzibar. Messrs. Mack & Son were third for forty-eight. Mr. William Boston was first for twelve yellow *Roses*, and for any colour Messrs. Cranston were first with Alfred Colomb. The number of *Roses* exhibited was over 1300. Although there are not many classes the interest in their extensive culture is evident.

Herbaceous plants are always exceptionally good at this successful Show. Mr. F. Battensby, Hagg Hill, Blaydon, was first with a beautiful stand. Second Mr. J. Short. Third Mr. J. Oliver, Elington Park. These four lots attracted much attention, as not one bad lot was shown. For twenty-four Fancy Pansies, twelve varieties, Messrs. A. Bailey & Son, Ashcroft Hall, Sunderland, were first with a fine lot. For twenty-four Show Pansies Mr. J. Bohn was first.

The first prize for a drawing-room epergne was won by Mr. J. Cypher with a chaste and beautiful combination of colour. The top tier consisted of *Pancratiums*, *Odontoglossum vexillarium*, *Cyanus major*, the blue of which was most effective. The base was also equally effective, being composed of *Dipladenias*, *Gloriosa superba* in a pendent position, and *Masdevallias*. Mr. J. Lamb, gardener to Lady M. Thompson, The Hermitage, Chester-le-Street, was second with an excellent arrangement where *Francoa ramosa*, *Water Lilies*, *Tacsonia Van Volxemi*, and *Dipladenias* were employed neatly draped with *Lygodium scandens*. This is only a young exhibitor, and it is to be hoped we shall see his work again. Mr. J. Cypher also scored first prize for the hand bouquet, which was very beautiful. It contained *Pancratiums*, white *Lapageria*, *Eucharis*, *Agapanthus umbellatus*, and *Cattleya intermedia*, every flower being seen to advantage, with *Adiantums*—neither too much nor too little. Mr. Cypher was also first for a bridal bouquet with similar white flowers as above. Mr. Atkinson followed Mr. Cypher in each class of nine competitors. For the buttonhole there were over twelve competitors. Mr. J. Douglass, 14, Durham Street, Newcastle, was first. It contained a *Tuberosa*, *Hoya bella*, *Oncidium flexuosum*, and *Forget-me-nots* on a back of *Adiantum gracillimum*. Mr. Thomas Battensby was second.

In Class B nurserymen are not allowed to exhibit. For six plants the Society offered £12 and a Veitch Memorial medal. Mr. E. H. Letts, gardener to the Earl of Zetland, was first with superb examples of culture, the *Ericas Shannoni*, *obobata*, and *Anthurium Schertzerianum* 6 feet through, with spathes 5 inches long, being of remarkable excellence, with *Azalea Brilliant* over 8 feet high as fresh and as brilliant as if it had been April instead of July. Mr. Bartle Thompson, gardener to E. Hope, Esq., Morpeth, was second with a good *Stephanotis*, *Erica speciosa*, *Dracophyllum gracile*. Mr. E. Adams, Swallow, third. For six foliage plants Mr. E. H. Letts was first with *Cycas revoluta*, *Kentia Fosteriana*, *Crotons Johannis* and *majesticus*, and *Dasylirocn acrotrichum*. Mr. J. Hammond was second. For six Ferns Mr. H. Johnston was first and Mr. J. Noble second, both exhibiting well. For hardy Ferns and Orchids Mr. J. Noble was first, and Mr. E. H. Letts for three *Ericas*. For table plants Mr. McIntyre was first. *Coleuses* and *Fuchsias* were also shown.

CUT FLOWERS AND EPERGNE.—For twenty-four *Roses* the Society offered £6 and the Knightian medal. Mr. G. Finlay was first, Mr. Laws second; and for twelve *Roses* Mr. G. Finlay was likewise first. In each case he showed excellent stands. Mr. T. Smith was first for Pinks, and Mr. Flowdy first for both Carnations and Picotees. For six bunches of cut flowers Mr. J. Noble was first and Mr. H. Johnston was second. For a drawing-room epergne Mr. T. Rutherford, Layes House, Durham, was first with an arrangement that was faultless; Mr. T. Battensby second. For a hand bouquet Mr. T. Rutherford was also first, in which *Lælia purpurata* and *Ixora* were used with effect. For a basket of cut flowers Mr. T. Rutherford was first, and Mr. Geo. Corbett second. The bridal bouquet prize was won by Mr. J. Battensby, Swallow.

FRUIT.—Grapes were excellent, but perhaps some of them, such as *Muscats* and *Madresfield Court*, were scarcely ripe enough. For eight dishes Mr. J. Edmonds, gardener to the Duke of St. Albans, was first with a *Queen Pine* (3 lbs. weight), *Black Hamburg Grapes* (excellent), *Muscats* of *Alexandria*, *Elruge Nectarines*, *Chancellor Peaches*, and *May Duke Cherries*. Mr. A. Methven was second. Only two collections were staged. For four dishes, *Pines* excluded, Mr. E. Edmonds was first also. The *Grapes* were excellent, *Bellegarde Peaches* and *Best of All Melons* being good. Mr. Wm. Jenkins, Aldin Grange, Durham, was an excellent second, *Black Hamburg Grapes*, *Hales' Early Peaches*, *Hunt's Tawny Nectarine*, and *Blenheim Orange Nectarine* all being very good. Mr. R. Dawes, gardener to the Hon. Mrs. M. Ingram, Temple Newsam, Leeds, was third. There were seven competitors. For one *Pine Apple* Mr. R. Parkes, gardener to J. Corbett, Esq., Impney, Worcester, received the chief prize. For four bunches of *Grapes* Mr. F. Douglass, gardener to J. Harris, Esq., Derwent Lodge, Cumberland, was first, *Black Hamburg*, *Madresfield Court*, and *Muscats* *Alexandria* being excellently staged. Mr. J. Thompson, gardener to T

Boyd, Esq., Dumfries, was second, and Mr. Methven third. The same exhibitor was also first for two white bunches with Muscat of Alexandria, which were in every respect good; and for two bunches of black Grapes Mr. J. Thompson was first with Black Hamburg, large in berry, and finely finished. For a scarlet-fleshed Melon Mr. J. Parkes was first. Strawberries in every case were excellent, Mr. R. Dawes being first with James Veitch.

Not for competition.—Messrs. William Fell & Co., Wentworth Nurseries, Hexham, exhibited a greatly admired mixed collection of plants, consisting of *Acer Negundo* variegata, *Hedera maderiense* variegata, *Pyrethrum* White Queen, &c. Messrs. J. Robson, nurserymen, Hexham, exhibited a similar stand to the above. He had his crested Moss Rose (*Rosa cristata nova*). Messrs. Thompson & Whittaker, South Shields, as agents for the Norwegian Fish Guano Company for the north of England, exhibited their new manure, which is called "Fish and Fish Potash Guano," and is useful for all gross-feeding plants.

The day was fine, and the receipts were never so large before. The Committee, Judges, and friends partook of luncheon, which was presided over by the Treasurer, Thomas Gray, Esq., who was supported by several influential gentlemen of the district.

EARLY PEACHES—LORD NAPIER NECTARINE.

Mr. Muir may well be pleased with Hale's Early, for it is undoubtedly very pleasing to the eye when well grown. The large size of the fruit and the high colour it attains when exposed fully to the sun renders it as striking as that well-known variety Bellegarde, which is generally accorded such prominence at exhibitions. Appearance goes a very long way nowadays, but the fact cannot be overlooked that Hale's Early cannot be compared to the old Royal George for flavour. The last may be considered excellent, but this cannot be said of the American, for all I have tasted have been slightly woolly. I have grown good examples of this variety and tasted very fine fruit grown by others, but in every instance the same fault was apparent, and this is the only defect known to me that this otherwise fine Peach possesses. It is well worth growing on account of its earliness where earlier kinds have not been introduced.

Early Beatrice ripens freely a fortnight before it and colours remarkably well, even the fruits on the under or shady side of the tree, but it is rather small. Where Peaches are required as early in the season as possible I consider it worth a place in a small early house, and if the tree is not cropped heavily it will produce very fair sized fruits. The fruit, however, is soft and packs badly if allowed to remain upon the trees until it is fully ripe; in fact, I am inclined to believe it improves in flavour by being gathered a few days before it is ripe.

Probably the best of all early Peaches is Alexander, an American variety, which ripens before the last named. This variety grows larger than Early Beatrice, colours well, and is very juicy, and, I should say, possesses a good flavour. But on the last point I can scarcely speak positively, for my tree has not had one of the most favourable positions, only having 9 inches depth of soil to grow in and the border not more than 1 foot wide. Its behaviour this season has determined me to give it a better position in the course of a few weeks.

Lord Napier Nectarine is really an excellent variety for an early house. It is very fruitful, colours well—that is, fully exposed fruits—ripens ten days before Royal George, and attains a larger size than any other Nectarine with which I am acquainted. In flavour it is very juicy, and superior, in my estimation, to the whole of the type of which Elruge may be taken as an example. The whole of the Pine Apple section are certainly superior in flavour, but they are totally distinct in this respect, and therefore can scarcely be placed in comparison with Lord Napier.—WM. BARDNEY.

NOTES FROM CARDIFF CASTLE.

My first and rather too brief visit to this place was fortunately early enough in the season for the early vinery to be seen at its best, and although I have inspected some of the best houses of Grapes in this country at various times, I was never before so much impressed with the general appearance of a house. Later on, the crops on the late Vines will be equally as imposing, and in both cases the perfection of culture displayed by Mr. Pettigrew, the well known gardener in charge, plainly indicates that he has largely profited by his Thomsonian training. Nearly all the houses, including the vineries, at Cardiff Castle, are commodious span-roofed structures, and as the superior value and utility of these are fast dawning on the minds of the gardening community, a future reference, with measurements, will, I venture to think, prove instructive to the readers of the *Journal of Horticulture*, and I will therefore merely allude to the crops as I saw them. The sunniest side of the early vinery is entirely occupied with Foster's Seedling, the other side being filled with Black Hamburg, and both of these reliable sorts were carrying an extraordinarily heavy crop of very handsome bunches. Any number of show bunches might easily be cut from the first-named, while the Black Hamburgs were also very fine in every respect. In the late house a remarkably even crop of Alicante, Lady Downe's, Alnwick Seedling, and Mrs. Pince were to be seen, and many of the bunches of these again give promise of being "fit for any society."

Mr. Pettigrew has long been a believer in the extension system of growing Vines, and the results of his practice fully bear out all that has been advanced in favour of that plan. The Vines are planted on each side of the house, the stems being trained along the fronts of the house, and the fruiting rods, one to each rafter, meeting at the apex of the roof. This gives each rod a length of about 16 feet, and on one of these fruiting rods, selected at random by one of our party, there were twenty-four to twenty-seven heavy and perfectly formed bunches. There is no crowding

of growth or foliage, but every inch of space is occupied. One object for leaving such a heavy crop was to prevent grossness of growth, and in inexperienced hands this would certainly effect this only too ineffectually, but Mr. Pettigrew is confident of being able to finish the crops without unduly weakening the Vines. The borders being inside and full of roots, the most liberal treatment can be (and must be in such a case) resorted to, Thomson's manure playing an important part in the process.

Melons and Cucumbers have long been a specialty at Cardiff Castle, and these again I was fortunate in seeing at their best. A span-roofed house, 72 feet long, 20 feet wide, and 15 feet high, is principally devoted to them, nearly the whole of the roof on one side being occupied with Melons, and the other with Cucumbers, a narrow pit for fruiting Pine Apples running through the centre. Mr. Pettigrew's Cardiff Castle is the only Cucumber grown, and the crop of this extremely useful sort was quite sensational, especially as there were hundreds of fruit perfecting a crop of seeds, besides innumerable others of all sizes. The fruit runs from 12 to 15 inches in length, are very even in size, perfectly straight, no neck, and the colour is good. The great demand for seeds is a proof of the fast-growing popularity of the variety, and from my own experience with it I can safely assert that it is the best all-the-year-round variety in commerce. Several varieties of Melons are grown, and nearly the whole of them were carrying heavy crops in various stages of growth. Nowhere else, perhaps, could there be seen such a length and width of roof so perfectly hung with fine Melons. The Peach house is a lean-to structure, this being about 12 feet high, 72 feet long, and 15 feet wide, four trees occupying the whole of the roof, and these perfect examples of the extension system of training had, or were, ripening off very heavy crops of fruit.

In the large plant stove the row of immense plants of *Eucharis amazonica* attracted attention, especially seeing how many cultivators have lost their stock of plants, or if they are not dead are become deplorably weak. There are no signs of the dreaded disease among the Cardiff Castle plants, neither will there be, I firmly believe, so long as the treatment is rational. Mr. Pettigrew does not indulge in the high-pressure system, nor boast of the number of times he has flowered them in a year, but he can point to a grand row of plants in 12-inch pots, and measuring from 5 feet to 6 feet through, the foliage, as may be imagined, being large, stout, and healthy. Many of them have not been repotted for eight years, and those that were recently divided first split their pots, this rendering repotting unavoidable. They are never taken into a cool house, dried off, and so-called rested, but receive abundance of liquid manure, especially at the growing periods. As a consequence of this intelligent treatment, and which also accords with that most successfully practised by Mr. Taylor when at Longleat, two heavy crops of flowers are annually produced, while a few flowers are developed at odd times, which maintains a supply nearly or quite all the year round. It is the frequent shaking-out and repotting, the restings, drying off, and restarting the plants in a violent heat in order to make them produce flowers in and out of season that gradually but surely impair the constitution of the bulb, and a collapse, attributed to disease or insect agency, is the result. There were plenty other well grown stove plants to be seen in company with the *Eucharis*, but we all happened to be well acquainted with the great value of the latter for affording cut flowers, and must confess to having nearly overlooked everything else.

An equally fine span-roofed house is devoted to greenhouse flowering plants, and here again there was much to admire. The centre bed was filled with Fuchsias in full bloom, such a display in fact being very rarely to be met with in a private place. The majority of them were 9 feet high, and either in 10-inch or 12-inch pots, some being pyramidal and others free-branching standards, the latter for decorating the Castle when the family is in residence. It ought to be added that they are all only twelve months old, being struck in the summer and kept growing in heat throughout the winter. Among the plants occupying the side staging of this house a batch of the handsome sweetly flowered *Lilium eximium* was very conspicuous, the noble ivory white blooms of this variety rendering it singularly effective when in mixture with other plants or blooms. Another striking and uncommon feature was the grandly flowered batch of the lovely *Gladiolus Colvillei*, The Bride. There were about 120 pots of bulbs, each on an average carrying twelve strong spikes of nearly pure white bloom, and, as may be imagined, the effect was unique in its way. The bulbs are usually repotted when ripe or about November, good loamy soil and 7-inch pots being used. They are wintered in frames, turned out in the open in March, and brought into flower as required, those we saw being at their best late in June. It must not be thought that I have exhausted the material for furnishing notes, as at present I have only really touched upon the subject.—VISITOR.

MUSCAT OF ALEXANDRIA GRAPE.

NOTHING is more disheartening to a good gardener, whose experience and success in other branches entitle him to respect, than to fail in producing satisfactory crops of Grapes, and yet see others without any seeming trouble have them as it were at their bidding. There is nothing for it but for those who are successful to continue recording their experience for the benefit of their less fortunate brethren, for however firmly cultivators may be attached to established notions, there will occasionally crop up new observations which set them thinking as to whether some old notions may not be given up and their practice reformed. Such an idea, based upon certain facts and practice, carried on

for the last ten years with two houses of Muscat of Alexandria, has occurred to me in relation to the successful cultivation of this magnificent Grape.

The two vineries mentioned are half span, each 50 feet long, with inside and outside borders. The Vines have been planted about twenty years. Both are heated with hot water, but a flue runs along the bottom of the back wall the full length of both houses. They are situated on the top of a limestone hill some distance away from our other houses, and as we are solely dependant upon rain for our water supply, the following practice at first was followed more from necessity than choice; but that the results are satisfactory, all who see them will readily admit. The fact I wish to call attention to is the small amount of atmospheric moisture maintained, as the syringe and evaporating troughs are not used after the Vines are well started, with the exception of one good washing the bunches receive to facilitate the process of thinning. The shoots are all stopped two or three leaves beyond the bunch when they are first tied down; afterwards they are allowed to grow at their own will until the Grapes begin to ripen, when we remove a portion of the lateral growths to admit sunlight to the bunches, as I find they will not colour well in too much shade. The borders receive a good covering of half-decayed stable manure before the Vines are started, and twice through the season they are sprinkled with guano or sulphate of ammonia. We give the inside borders a good watering about once every ten days. No damping or sprinkling of paths and borders takes place between the regular waterings, as we consider such a waste of water.

I am of opinion that Muscats require more water at the roots and less moisture in the atmosphere than the majority of Grapes, and that at no season of the year should their roots be allowed to be dry. Some growers never water their Vine borders from the time the Grapes are ripe until they start again in the spring, which I think is one of the most likely causes of shanking. We should not ignore the teachings of Nature; she is a good guide, and it is well known that soil is much heavier and carries more moisture in winter than at any other season of the year, and I can see no reason why Vines should be starved and the roots shrivelled by a deficiency of water at any time. The soil may contain all necessary ingredients, but water must be present to prepare and liberate them for appropriation by the Vines.

Muscats do not require so much heat as is generally supposed, as this season, during the time the Vines were in flower, the temperature was often for hours as low as 55°, and yet with attention to the ventilation in the morning as soon as the sun touches the house, Muscats have set as freely as Black Hamburgs. In my opinion many of the ill Vines are subject to are caused by a close and moist atmosphere combined with high night temperatures, which cause the foliage to be soft and flabby, with watery badly ripened wood, which contains an excessive amount of pith.

Enclosed is a photograph of this season's crop in the earliest house. The Vines were started the first week in January. The photograph was taken by Mr. Gilbert Wilson of Grange-over-Sands on July 1st.—SAMUEL HALLMARK, gardener to E. Mucklow, Esq., Castlehead, Grange-over-Sands, North Lancashire.

[The photograph shows an excellent crop of large well-set bunches, and fully proves the success of Mr. Hallmark's method of treatment.]

BAPTISIA AUSTRALIS.

GENERALLY called False Indigo, a name derived, it is supposed, from the economical use of *B. tinctoria*, which yields a coarse indigo dye, not now extracted.

Five species, all showy garden plants, are enumerated in Dr. Gray's "Flora of North America," to which a few have been added, and most of which are in cultivation, though, unfortunately, not to that extent which their superior merit entitles them to be. They may be classed amongst hardy ornamental herbaceous plants, as they are extremely useful for shrubberies, mixed borders, and rockeries.

B. australis, represented in the accompanying illustration, is an extremely free-flowering species, perhaps the most generally known in gardens, having been cultivated as far back as 1758. For a back place on the rockery few plants are more desirable, and few give such a satisfactory return under all circumstances. In sun or in shade, in damp soil or dry, *B. australis* seldom fails to produce an abundance of indigo blue flowers, almost as large as well-grown Sweet Peas. The whole plant seldom exceeds 2 or 2½ feet in height; the stems are branched, producing the flowers in racemes often halfway down; leaflets blunt, wedge-shaped, and having stipules as long as the leafstalks. It flowers June and July.

Others may be mentioned, such as *B. tinctoria*, *B. leucophaea*, *B. alba*, *B. exaltata*, *B. versicolor*, and *B. perfoliata*. The specimens figured were grown by Mr. Ware at Tottenham.—S.

WOOLTON WOOD,

THE residence of H. Gaskell, Esq., is situated at Woolton, about six miles from Liverpool, and is easily reached by train from the central station to Hunts Cross, being only about ten minutes' walk from the latter. The mansion and gardens are approached by a drive that winds through a large wood of stately trees, composed principally of Beech, Elm, and Sycamores, with an abundant undergrowth of *Rhododendron ponticum* and hardy Ferns. The former in some instances skirt the margins of the drive and various walks that abound in the wood, while large patches of the latter give to the whole a cool, effective, yet natural appearance. Wood Hyacinths exist in quantity, and at the time of my visit large patches with Ferns and *Rhododendrons* in the background were just past their best, but displayed at a glance the effective beauty of such simple sweet flowers when mass'd together and planted in suitable positions. Earlier in the season a similar display is obtained by the old double yellow Daffodil, which has been freely established.

The mansion is a commodious and substantial structure, and in appearance it is rendered very ornamental by the mass of foliage and flowering plants that clothe the walls from the base to the roof. The climbers used for this purpose consist principally of Ivy, Virginian Creeper (*Ampelopsis hederacea*), *Wistaria sinensis*, and Roses. The well-kept lawn in front was beautifully green in spite of the dry weather; it stretches for some distance, and from it is obtained a most beautiful view. The river Mersey can be seen along its winding course in the valley below, and visible beyond as far as the eye can reach is the beautiful landscape of Cheshire. In the background stands out prominently a range of Welsh mountains, which add wonderfully to the beauty of the picture. Shrubberies flank the lawn on each side, and are freely dotted with herbaceous plants, which impart change and variety, as well as supply, if needed, useful material for cutting.

We returned to the wood by what is known as the Heather Walk, from the large clumps and patches of Heath that have years ago been freely planted, and which must be very effective during the time they are in bloom. During last year fresh objects of interest have been added to this portion of the grounds in the form of large mounds or portions of rockwork for the accommodation of alpine plants. Large provision has also been made in various parts of the garden, especially against the fernery and Orchid houses, for the cultivation of these lowly plants. Limestone has been brought from Derbyshire and mounds formed with it, while smaller portions have been freely intermixed in the soil, in which Gentians and many other species have been planted that inhabit naturally limestone hills. The provision made for these highly interesting and charming gems has been one of thought and study. The luxuriant growth of many of the plants testify that the position and home accorded them is a genial one. *Gentiana verna*, a plant very rarely seen thriving satisfactorily in gardens, is doing well there, and this is only one of many that will in a very short time fill the nooks in which they are planted. Time and space forbid me to particularise these plants further, and the same may be said of the herbaceous border that surrounds this compact and neat rock garden. The walk leads to an old quarry, which is entered by a number of rugged stone steps. Last winter beds were here formed and planted with a collection of Lilies, Irises, hardy Heaths, and a few Orchids. The sides are planted with Ivy, Heaths, Foxgloves, and many other hardy plants. Many of the Lilies and other plants have started away strongly and well, and it will be interesting to watch them in the future, for vertical light only can reach the plants, and this through the large forest trees above alluded to, which surround the quarry.

The vineries, Peach house, Cucumber and Melon houses, sundry small plant houses, and what we may term a show house or conservatory, are arranged in the kitchen garden. The fruit houses were looking very well and promised to supply good crops. The ordinary decorative flowering plants were grown in the small houses and arranged in the conservatory or show house while in bloom, which was gay with a miscellaneous collection of plants. The kitchen garden was neat and well filled with all vegetables that are required for the supply of the establishment.

The above are referred to but briefly, because the Orchid houses and the large collection they contain of well-grown plants are the main attraction of these gardens and must next receive attention. For some years Mr. Gaskell has been enthusiastic in his endeavour to form a good collection of these plants, and during the past two or three years very large numbers have been added. This is the finest collection of Orchids in the neighbourhood of Liverpool. The greater number of the plants have been obtained as they have been imported, and in addition very high prices have been paid for rare and choice varieties that are established when offered for sale. There are in all six large houses solely devoted to Orchids, and the first entered was filled with *Odontoglossums*, nearly all of which have been established within three years. The plants are strong, and they have made wonderful progress. The whole of the centre of the house was filled with plants in flower, principally *Odontoglossum crispum*, and *O. vexillarium*, some of the latter having flowers of an enormous size, while nearly every one of the former were superior varieties, the majority of them having large broad sepals and petals, some of the purest white, others beautifully spotted and shaded with rosy pink. Dark forms were abundant, and two or three were decidedly the most highly coloured varieties I have seen, one of these having nearly a round flower, while the sepals and petals were much cut and fringed exactly the same as the lip of many of fine forms of this lovely Orchid, the lip being well fringed also. This is the first time this plant has flowered; it was imported in 1882, and it will be of interest to watch whether it retains this distinct form. *O. polyanthum* and *O. pretextum* were also in flower in this house. *Oncidium crispum* was most conspicuous with two spikes of showy flowers fully 5 feet long and much branched, each branch being nearly as large as the spike generally seen on this variety. Before passing from this house some idea may be formed of the health and vigour of the plants when it is stated that the majority bearing large flower

spikes had started vigorously into growth, in several instances two growths having issued from one pseudo-bulb. Plants less healthy and luxuriant often have their growths retarded for a long time by the strain of a large spike of flowers.

A hint in relation to these plants may be turned to useful account by Orchid growers, and that is the system of spring potting has not been practised with them. Mr. W. Davies, the able gardener at Woolton Wood, believes in repotting *Odontoglossums* that need it in autumn instead of the spring. I am scarcely in a position to pass an opinion at the present time on this subject, but have watched the plants in question for some time, and their general condition leaves nothing to be desired. The plants flowering so profusely and growing so vigorously were all repotted early last autumn.

The second house in this range is devoted to *Lycastes*, *Maxillarias*,

The *Masdevallia* house is a lean-to structure with a north-eastern aspect, and is filled with large healthy plants of all the leading species in cultivation. New and rare forms are also well represented. The old flower stems indicate the wealth of beauty that these plants must have presented a short time ago. The plants in this department were somewhat spotted a few years ago, but by the admission of more light and air and a little higher temperature Mr. Davies has succeeded in growing the plants out of it, and all the new foliage for a few years past has been clean, healthy, and luxuriant. The condition of the plants is excellent, and we can form but little conception of what size and strength these plants are capable of attaining, for there they appear to grow with greater vigour and produce annually finer and bolder foliage. Mr. Gaskell may well feel proud of them, for many are 18 inches or more in diameter and growing in 10 and 12-inch pots. Those who have visited the leading Orchid establishments in this country say they



Fig. 16.—BAPTISTA AUSTRALIS.

Zygopetalums, and *Odontoglossums*, that require a little higher temperature than the cool house. It was filled with a great variety of these plants in the most perfect health. Conspicuous in this department hung suspended from the roof two remarkably fine plants of *Masdevallia bella*, one of the two being probably the finest plant in the country. It was not one of those small insignificant pieces frequently seen, but a large plant in an 8 or 9-inch pot with a perfect ring of its curious flowers. A large plant of *M. Chimæra* was equally fine, and as well flowered as *M. bella* that hung by its side. Other plants in flower in this house were *M. radiosa* and *Mamodes Medusæ*, a very rare and truly extraordinary plant, the flower having light green sepals and petals tinged with brown, while the lip is maroon in colour with green towards the base. The third house in this range comprised amongst others large well-grown masses of *Lælia anceps* and its white variety *alba*. *L. anceps Dawsoni* is also represented. *Lælia autumnalis* is largely grown, and a fine plant of the rare *L. amanda* doing well. *L. monophyllum*, a healthy little plant, which is also very rare, is throwing up its first flower spike. Several other varieties of *Lælia* exist, and grand masses of *Cattleya Gaskelliana* are growing luxuriantly.

have seen nothing to surpass this houseful of *Masdevallias*. *M. Veitch* was in flower and is one of the finest, while I noticed an exceptionally good plant of *M. Davisii* that had borne a good number of its showy yellow flowers.

The *Cattleya* house is a large span-roofed structure and crowded with large masses in pots and pans, while the roof is almost covered with a great variety of plants on blocks, rafts, and in baskets. Especially noteworthy is *Cattleya exoniensis*, a fine plant with five strong breaks, two smaller plants also doing well. The autumn-flowering *C. labiata* was making excellent growths that if well ripened will be sure to produce large finely developed flowers of great substance. The new and unique *C. Whitei* was also at home and doing well. *C. Skinneri alba* is a superb healthy plant, and it is questionable if any larger plant is to be found in any Orchid-growing establishment. *C. Dodsoni* and *C. Wagneri* were also good plants and making capital progress. Suspended from the roof just over the door was a truly magnificent plant of *C. Warneri* that had carried nine spikes of flowers, with two and three flowers on each spike. Several large plants of *C. Percivaliana* were conspicuous, and which I saw profusely flowered on a previous occasion,

but which are now growing and rooting very freely. This *Cattleya* house is also rich in *C. Trianae* and its varieties, many very large plants. The same may be said of *C. Mossiae*, *C. Mendeli*, and other well-known popular Orchids. *C. gigas* and *C. Dowiana* had been removed to what is known as the stove, where they and several other varieties are suspended from the roof to enjoy more light, which Mr. Davies has found of importance. Several plants of *Thunia Marshalli* were in full beauty, while those that had previously flowered were stood outside, after having been well prepared for the remainder of the season to ripen and mature their growths. *Lælia purpurata*, fine healthy plants, were also outside with them in a shady position. I am not aware that the last-named plants have been subjected to this treatment in previous years, but it has been discovered that a lengthened and complete season of rest is essential in retaining them in perfect health.

The East Indian house is a long span-roofed structure, and built of teak. Several plants of *Aerides Dayanum* were in flower, *Aerides expansum leoniae*, *Aerides crassifolium*, *Aerides Lobbi* were also in bloom, several plants of each as well as two or three distinct forms that had been recently imported with *Aerides crassifolium*. *Aerides affine superbum* (Manley Hall variety), a sturdy, healthy plant producing two large flower spikes. *Saccolabium guttatum Holfordianum*, two beautifully developed spikes, while the display of *S. Blumei majus* will be very fine in a short time, for the flower spikes are visible on several dozens of plants, from those growing in 6 and 7-inch pots to large masses in baskets 2 feet across. The whole of the *Aerides* and *Saccolabiums* have been imported during the past two years; they have made remarkable progress and are now well established and perfectly healthy. No attempt is made to cram the roots of these or any similar plants into the material in which they are potted, but they are allowed to throw out their roots naturally into the moist atmosphere of the house, and the admirable condition of the plants proves that they enjoy the treatment they receive. Along the middle of the house on the centre stage are some healthy *Vandas*, while a number of *Anectochilus* occupy a close frame in one corner. The *Phalænopsis* noted in these pages a year or two ago occupy a position in this house, and are now being established on the top of long narrow Orchid pots—if they may be so termed, for minus the numerous holes they resemble drain pipes (these, I believe, are a form of the new Orchid pots supplied from the Liverpool Horticultural Company). Others very similar are made of teak, to which the roots are commencing to cling freely; the centres are filled with charcoal in lumps, very little moss or peat fibre being used. In this house a large batch of *Odontoglossum Roezlii* is doing splendidly and showing numerous spikes of their large lovely flowers. A large collection of *Cypripediums* are also making their growths in this structure. *C. Spicerianum* is represented by a score or more of plants, the largest being in about 10-inch pots; *C. barbatum nigrum*, a large painful about 4 feet through, fine plants of *C. caudatum*, *C. Parishii*, *C. Stonei*, *C. Lowii*, and many others might be named.

The *Calanthes* are grown in the stove, in which a general collection of stove-flowering and foliage plants are also grown. The number of *Calanthes* grown would of themselves fill an ordinary sized structure; they are very strong and luxuriant, most of them being grown in 8-inch pots, with about half a dozen pseudo-bulbs in each pot. This might also be considered an Orchid house from the enormous quantity of *Dendrobiums* and others that are suspended from the roof all over the house, one end being entirely filled with *Dendrobium Jamesianum* and *D. formosum giganteum* making their growth and established on blocks and in baskets. The *Coelogynes* occupy this house in which to make their growth, and many of the plants are more than 3 feet through. They are making very strong growths, especially *C. Lemoniana*, which is about the same size, and always flowers twice in the season, in the autumn from the top of the pseudo-bulbs made, and in spring from the base the same as *C. cristata*. Is this natural to this variety, or in any way due to superior cultivation? Several stove plants are worthy of mention, but I merely name the two large and well-grown plants of *Anthurium Andreanum* and a collection of fine plants of *Nepenthes* and pass to the fernery.

The fernery is close to the Orchid houses and rock garden, the interior presenting a natural and picturesque appearance. The rockwork is well and tastefully arranged with red sandstone, which in time will become naturally green and the Ferns increase freely upon it. The rocks and interior of the house is well furnished already, for *Dicksonias*, *Cyatheas*, and *Alsophilas* with stems varying from 5 to 8 feet have been freely planted, and are spreading their gigantic fronds and already filling the roof portion of the house. The dwarf-growing Ferns are thriving amazingly beneath them. Upon entering a fine plant of *Asparagus plumosus nanus* planted out and trained to a few thin wires stretched from the ground to the roof has already reached the top of the house. This is a grand plant for such a position and evidently grows luxuriantly in the temperature of the fernery. Behind this *Asparagus* and hid from view by it when entering is a small pool of water surrounded with *Todea superba*, and remarkably well they look, it is just the position for them. A small stream crosses the walk, in fact issues from the rocks and enters the pool, and here again *Todea pellucida* is doing well, and *Trichomanes radicans*. Many other Filmy Ferns were at first planted out, but it has been necessary to lift them and place them in a close case in the house, where they can be kept constantly moist, the atmosphere of the fernery proving too dry for them; they are now established and growing well.

It only remains for me to say that the condition of the Orchids, considering what has been done in so short a time, and the gardens generally, reflect the greatest possible credit upon Mr. W. Davies, who is evidently a thoroughly good general gardener, for all he takes in hand does well. I wish to thank him for the courtesy he has shown to me on several occasions, and I regret to learn that he has resigned the charge he has had for the past nine years, but hope he will soon be in harness again where he will be able to display his superior knowledge and ability.—W. BARDNEY.

GRAPES IN THE NORTH.

Now that another exceptional season is getting well advanced, perhaps the following notes regarding Grape culture north of the Tweed will interest many readers of the Journal. Being privileged lately to visit a few fruit-growing establishments, it was gratifying to note the marked

improvement generally apparent this season, doubtless arising from the fine season we had last year.

NORWOOD HOUSE.

This, the residence of John Paton, Esq., is distant about one mile from the town of Alloa, and seven from the ancient town of Stirling. Beautifully situated on a rising eminence on the north bank of the river Forth, it commands a fine view of the rich tract of country watered by that river. The glass houses are not extensive, and the accommodation for Vioc-growing rather limited, there being but two vineries; nevertheless, the Grapes they annually produce but proves the fact that, when in the hands of a skilful cultivator, large and separate houses for different varieties are not always necessary for the production of first-class Grapes. Here we found as many as sixteen varieties growing in one lean-to house not more than 30 feet long, and all receiving the same treatment. They include Muscat of Alexandria, Duke of Buccleuch, Buckland Sweetwater, Rasin de Calabria, Black Hamburg, Alnwick Seedling, Lady Downe's, Alicante, Gros Colman, Madresfield Court, and many others, and, what is most remarkable, scarcely any are on their own roots, but are grafted, some with as many as four and five varieties on the same rod. Although it was too early at the time of our visit to speak of their finish, still their appearance was satisfactory. The most striking Grape is undoubtedly the Duke of Buccleuch, and in few places is this noble though troublesome Grape grown to such perfection as it is at Norwood. This season it is looking as good, if not better, than is usual, large bunches with magnificent berries. What a robust grower this variety is even when grafted! The stalks of some bunches were almost as thick as one's finger, with wood and leaves of a corresponding grossness; indeed, this is a striking feature of all the Norwood Vines. Some Gros Colmans especially were very large in leaf and strong in wood, and were swelling off bunches with very large berries. Madresfield Court was also very fine in berry, and just changing colour. We noticed some rather large bunches of that highly flavoured, though insignificant-looking Grape, Duchess of Buccleuch. We were sorry we did not take note of the stocks the different varieties were grafted upon, and which seemed to be doing so well; but perhaps Mr. Kirk will kindly make good the omission at some future time. He informed us by putting in an eye in spring he can cut a bunch fit for exhibition from the same eye by autumn.

Plants are not numerous, but are extremely healthy and well grown. A plant stove contained a good collection of the best varieties of Crotons and *Dracenas* suitable for table work. A large circular conservatory adjoining the mansion was well filled with the usual greenhouse plants, well grown and flowered, and included a very fine strain of herbaceous *Calceolarias*. Out of doors everything was extremely neat and tidy, carpet bedding especially being very effective. The lawns and shrubberies were thickly studded with the finer varieties of Conifers, which, although small, were remarkable for their health and vigour. Altogether this is indeed as pretty a little garden as we could really wish to see, and highly creditable to Mr. Kirk.

CALENDAR PARK.

This grand old place, the seat of William Forbes, Esq., is situated midway between Edinburgh and Glasgow on the Main North British line, and is reached in forty minutes' ride from either place. Fruit is extensively grown both outside and in. The forcing department is situated in the kitchen garden, and is a very fine range of large lean-to houses separated in the middle by a large three-roofed ridge-and-furrow greenhouse, and comprises six vineries and two Peach houses. The first house we enter is a late vinery and filled with Lady Downe's. It was carrying a fine even crop with rather large bunches for this variety, although we failed to observe any so large as the two sensational bunches exhibited from this place last year at the Dundee International Show. They were indeed exceptional bunches, being 16 inches in length, well filled and shouldered, and perfect in finish. The next house we entered was truly a magnificent sight. All Black Hamburgs, and they truly deserved the title. As a houseful of better bloomed, finer finished Grapes it has not been our good fortune to see. From top to bottom, back wall included, dense clusters of fruit hung in rich profusion. From this house were cut the two grand bunches which were so much admired, and which carried off first honours at the recent Show of the Royal Caledonian Horticultural Society, Edinburgh. The next house was also filled with Black Hamburgs for late use, and were looking well. Next is a mixed house, comprising Alicante, Gros Guillaume, Muscat Hamburg, West's St. Peter's, Muscat of Alexandria, Madresfield Court, &c., the latter very fine; also Muscat Hamburg, large in bunch and berry. This variety is exceptionally well grown there, and few have been so successful as Mr. Boyd in getting it coloured. He is the holder of two Veitch Memorial medals, both gained with this variety. Of the remaining two vineries one contained a good crop of useful late varieties; the other, young Vines, from which we may expect something good, judging from their robust health and the wonderfully strong short-jointed canes they had made. They were carrying a few good bunches on each rod, the most notable of which were Gros Colman, Alnwick Seedling, Champion Muscat, Muscat Hamburg, Golden Queen, and Golden Hamburg. Two Peach houses finish this fine range of glass, both filled with healthy trees and bearing an even crop. In one house we noticed some good Plum trees in pots, ripening a fine crop, principally Blue Orleans, Prince Engelbert, and Green Gage.

If I have not already trespassed too far upon your space I should like to say a word upon the Melons, the culture of which deserves more than passing notice. Leaving the vineries, we passed a large span-roofed plant stove, in the centre of which, planted out, were some wonderful clusters of Bananas remarkable for their size. We were shown the photograph

of a cluster grown here several years ago, which measured 4 feet 6 inches in circumference and 26½ inches long. Unfortunately its weight was not ascertained at the time, but was calculated to be not less than 100 lbs. The Melons occupy four spacious pits in different stages, and are wonderful examples of cultivation. In one house a little over 20 feet long we counted over forty fruits that would average 5 and 6 lbs. each, finely shaped and beautifully netted. They included, besides some of the best varieties, a few very promising seedlings raised in the place, William Tillery, Eastnor Castle, Best of All, and Blenheim Orange being particularly fine. The system adopted in their cultivation is one of close stopping and planting 18 inches between each plant, and but one leaf to each lateral. Three fruits are taken from each plant, and are ready for cutting in five weeks from the date of planting. Figs are grown on the north half of the span, and were bearing a good second crop of fruits. Two other pits are filled with healthy well-grown Pines swelling off fruits of Queens and Smooth Cayennes, the two varieties principally grown.

Mr. Boyd, the gardener in charge of this establishment, has for many years been a very successful exhibitor at most of the principal shows both in England and Scotland, and everything under his charge fully bears out the high reputation he has gained as a fruit-grower, and to his courtesy and kindness we are indebted for much of the pleasure we derived from our first visit to Callendar Park.—DUNCAN BUCHANAN.

ROYAL HORTICULTURAL SOCIETY.

JULY 28TH.

VARIED tastes might be gratified in the conservatory on this occasion. The central tables at the east end were occupied by as fine exhibits of Carnations and Picotees as have ever been seen at the National Society's shows of these beautiful flowers, and in contrast on the side tables were banks of gorgeous Begonias, diversified groups of flowers of hardy herbaceous plants, extensive assortments of Gloxinias, a fine display of Pine Apples, and, considering the season, a wonderfully fine exhibition of vegetables in competition for the prizes offered by Messrs. Sutton & Sons, Reading.

In the Begonia competition Messrs. J. Laing & Co. had a grand field day, securing the first prizes in every class in the easiest possible manner. In the group not exceeding fifty plants they had in fact no competitors, yet nevertheless won the first prize of £5 with admirably grown and brilliantly flowered examples.

In the class for nine plants they were far away ahead, staging beautifully grown examples from 2 to 4 feet high and the same in diameter; second Mr. Bealby with very small plants.

In the class for six double-flowered varieties the same well known firm secured the first prize with plants ranging from 18 inches to 2 feet high and the same in diameter, laden with massive flowers. The varieties were—Lady Hulse, white, free; The Czar, scarlet, dazzling; Mr. Brissenden, orange scarlet; Mr. Howe, buff; Goliath, cerise; and Mrs. Brissenden, rosy salmon; Mr. Bealby, The Laurels, Roehampton, securing the second prize with much smaller plants.

In the class for six Tuberous Begonias (nurserymen excluded), W. N. Cheesman, Esq., the Hall, North Dulwich, (gardener, Mr. Monk), secured the first prize with well-flowered examples 2 to 3 feet high and through; second, Mr. Bealby with small plants; third, Mr. W. H. Apthorpe, Cambridge, with vigorously grown yet not large examples.

Gloxinias.—The first prize offered for these was awarded to six plants belonging to Colonel the Hon. W. P. Talbot, Esher (Mr. Waite, gardener). They were not large but healthy, and the exhibitor never won £3 more easily.

In the class for six pots of Liliiums in not less than three varieties we only saw one collection, for which the first prize was awarded to Mr. J. S. Ware, who staged *L. auratum*, *L. pardalinum* Michauxi, *L. Humboldtii* ocellatum (both scarlet with lilac spots), *L. chalcidonicum* maculatum, *L. Browni*, and the elegant *L. philippinensis*.

Carnivorous Plants.—The first prize was adjudged to Mr. James, Castle Nursery, Lower Norwood, for a neat, interesting collection, that attracted much attention from visitors, R. R. Hyatt, Esq., having the second prize for a less varied collection.

Achimenes.—The only plants we observed were those to which the second prize was awarded. They were staged by Mr. Luff, gardener to R. R. Hyatt, Esq., Streatham—well-grown plants, but past their best condition.

Group of twenty-five miscellaneous plants.—In this class Mr. James was placed first with a bright and neat assortment of small plants; R. R. Hyatt, Esq., second, but the display was the reverse of imposing.

Mr. Ware was awarded the first prize for a collection of twelve Pentstemons, also for a collection of cut blooms of herbaceous plants, a truly remarkable exhibit, comprising 180 species and varieties.

VEGETABLES.

Several collections were staged in competition for the prizes offered by Messrs. Sutton & Sons, and all of them were good. Mr. Richards, gardener to the Earl of Normanton, Somerley Park, was first with imposing dishes of Cauliflowers, Onions, Artichokes, Carrots, Tomatoes, Kidney Beans, Potatoes, and Peas. Second, Mr. M. C. Waite, The Gardens, Glenhurst, Esher, Tomatoes and Onions being remarkably fine. Third, Mr. Haines, The Gardens, Coleshill, Berks, his collection including an excellent dish of Mr. Muri's excellent Vegetable Marrow Pen-y-byd, good Peas, Tomatoes, and Cauliflowers. Fourth, Mr. T. N. Beckett, Cole Hatch Farm, Penn, Bucks. Fifth, Mr. James Neighbour, Bickley Gardens, Kent. The prizes offered for Sutton's All Heart Cabbage and Earliest of All Savoys were taken by the following exhibitors—first, Mr. James Neighbour; second, Mr. Osman, Sutton, Surrey; third, Mr. P. Cornish, gardener to J. Downing, Esq., Enfield, all of whom staged good examples of these useful varieties.

FRUIT COMMITTEE.—Harry J. Veitch, Esq., in the chair. Mr. R. Nicholls, The Gardens, Castle Hill, South Molton, sent eighteen Pine Apples of the Smooth Cayenne variety, which weighed in the aggregate 126½ lbs., to which a silver-gilt Banksian medal was awarded. Mr. Stephen Castle, The Vine-

yard, West Lynn, Norfolk, sent two varieties of seedling Tomatoes, which were passed. Mr. T. C. Worsley, Linslade Nursery, Leighton Buzzard, sent a seedling Melon which was not quite ripe. Mr. James Bolton, The Gardens, Coombe Bank, Sevenoaks, sent a Gooseberry called Bolton's Prolific, which has been exhibited twice before the Committee. Its chief recommendation is its good bearing properties, but it is not particularly early. Mr. Isaac Harrison, of Leicester, sent a seedling Apple, which had also been exhibited in November last, but it has now passed its season. Mr. J. Merryfield, The Gardens, Waldershare Park, Dover, sent a seedling Raspberry called "Superlative," but it was considered to be too near others already in cultivation. Mr. Charles Ross, The Gardens, Welford Park, Newbury, sent a seedling Grape from Black Monukka, called "Mrs. Eyre," which was not ripe, and without flavour. He also sent two Melons that were not approved of.

FLORAL COMMITTEE.—G. F. Wilson, Esq., in the chair.

A silver-gilt Banksian medal was worthily granted to Messrs. Sutton and Sons, Reading, for a great and in every way admirable collection of 160 Gloxinias, characterised by free growth, large flowers, and clear and decided colours. The same firm also staged an effective assortment of double Stocks and Hollyhocks.

A silver Banksian medal was awarded to Messrs. Hooper & Co., Covent Garden, for a beautiful collection of seedling Gloxinias, the majority of them spotted and of great merit. They had a pretty effect amongst Adiantums margined with *Isolepis*.

Messrs. Veitch & Sons staged amongst other plants spikes of the distinct and brightly attractive hybrid spotted *Gladiolus Lemoinei*, which has been previously certificated, the clear yellow in the segments rendering it very striking. They also staged *Olearia Haasti*, one of the most floriferous summer-flowering evergreens in cultivation.

The Hon. and Rev. J. T. Boscawen exhibited a wonderfully vigorous plant of *Lælia purpurata*, with six trusses of very large flowers, and leaves 18 inches long and 3 inches wide. This plant well merited the vote of thanks awarded. The New Plant and Bulb Company, Colchester, exhibited fine cut spikes of *Lilium auratum*, and dwarf plants of the variegated *Lilium longiflorum*, for which a vote of thanks was awarded. Mr. Perkins, Leamington, exhibited plants of decorative *Pelargonium Volonté Nationale* album, which has been previously certificated. Mr. Cannell exhibited a group of the extremely valuable double Ivy-leaved *Pelargonium Madame Thibaut*, characterised by sturdiness of growth, floriferousness, and huge trusses of pink flowers. This plant ought to find its way into every greenhouse in the land, and will no doubt do so; also very fine Begonias and stands of Carnations and Picotees. Messrs. Laing & Co. also staged a remarkable collection of cut flowers of Begonias. Mr. Ware exhibited *Gaillardias*, which were commended, and a vote of thanks was awarded to him for *Dianthus Napoleon III.*—good examples of this richly coloured variety.

CERTIFICATED PLANTS.

Begonia Thwaitesii (Veitch).—An ornamental-foliaged species from Ceylon, the leaves 4 or 5 inches in diameter, green, of plush-like texture, blotched with greenish white; habit dwarf, flowers white.

Begonia Prince Henry (Sutton & Sons).—A striking variety with small foliage and a profusion of coral-red flowers, somewhat resembling those of *B. Ingrami*, but larger and in all respects better. It is the result of a cross between a seedling from the Tuberous Begonia *Davisi* and a seedling raised from *Begonia Rex*. Its origin is thus remarkable, and there is no question as to its distinctness and great decorative value for fringes to larger plants. The same firm was also awarded a vote of thanks for a seedling raised from *B. semperflorens* and *B. Schmidtii*. It resembles the former parent more than the latter, but is distinct from both and remarkably free.

Begonia Marchioness of Lothian (Cannell).—With huge, pendent, creamy white Hollyhock-like blooms. Well grown in a basket or suspended, this variety must have a striking effect.

Begonia Picotee (Cannell).—A double variety, rosy pink, the edges of the petals clearly margined with white, like the wire of a Picotee.

Begonia Marquis of Stafford (Laing).—A double variety with cherry crimson flowers; plant dwarf, and very floriferous.

Campanula Hendersonii (Ware).—Dwarf, dense in habit, not exceeding 1 foot high, with large clear blue flowers 1½ inch in diameter, resembling *C. turbinata*.

Clove Carnation The Governor (Cannell).—Large, smooth, broad-petalled pure white flowers, evidently a very fine variety.

Draccephalum virginicum album (Ware), with effective dense spikes of white flowers, resembling at a distance large sprays of *Ericas*.

Helenium pumilum.—Exhibited by Mr. Ware, a valuable old yellow-flowering herbaceous plant, represented by some of the finest flowers we have seen. A figure is given on page 95 which well displays the character of the flower.

Marigold Miniature Orange African (Carter).—A small compact form, bright and attractive.

Pelargonium Josephine de Hohenzollern (Bealby).—A fine free-growing Ivy-leaved variety, with double crimson scarlet flowers.

Pelargonium Paul Charbonnier (Bealby).—Dwarf double scarlet, resembling Wonderful.

Rhododendron incarnatum floribundum (Veitch).—One of the greenhouse varieties, remarkable for its floriferousness, every stem terminating with trusses of miniature trumpet-like flowers; a curious mixture of buff and rose colour, distinct and attractive.

SCIENTIFIC COMMITTEE.—A. Grote, Esq., in the chair.

Fungus Poisonous to Pheasants.—Mr. W. G. Smith reported that he had ascertained that the fungus which had proved poisonous to pheasants, as mentioned at the last meeting, was *Agaricus trachysporus*. Colonel Clarke mentioned having seen squirrels eating *Agaricus*.

Odontoglossum nebulosum with Three Lips.—Dr. Masters reported on the flower from Dr. Duke submitted to him at the last meeting. The segments of the perianth were normal, as also the single perfect stamen. Midway from either side of the column proceeded a lip-like petal wholly detached from the lip. There was no trace of the three inner stamens, nor of the stigma.

Cones of Abies brachyphylla.—Dr. Masters showed cones of this comparatively new Japanese Conifer grown by Messrs. Veitch at their Combe Wood

Nurseries. They were of oblong form, and of a rich purple plum-like colour, similar to those of A. Webbiana, but smaller. The tree in question is one of the handsomest and hardiest of its class, and grows rapidly.

Books Received.—Various donations were acknowledged for the library. The meetings of the Committee were then adjourned till November 10th.

A RECTORY GARDEN.

GARDENS which have become famous, and consequently special objects of attraction, exist in large numbers in all parts of the kingdom. It is not, however, in these alone that noteworthy examples of high-class gardening are to be seen, but oftener in some quiet country garden away from towns, new ideas and methods of culture are quietly being worked out. It is about an interesting garden of the latter class that I now give a few descriptive notes. Kent has been justly termed the Garden of England, and it was to one of its southern points that I received an invitation a few weeks ago to visit Canon Hodgson's charming gardens at Saltwood Rectory near Hythe. The journey by rail from town occupies about a couple of hours, passing through the most interesting and fertile districts of the country, in which Hop gardens and fruit orchards form a special feature. The traveller has to change carriages at Westenhanger station, which is only about three miles from Saltwood, and if he enjoys a walk and can admire beautiful scenery, it is best to perform the journey on foot. If not, then a few minutes by rail through huge cuttings, each side of which is clothed with most charming variety of wild plants, Gorse, and Broom in flower, here an opening revealing the most lovely landscape, and finally a gradual and increasing glimpse of the Channel, with Dungeness Point in the distance, and Hythe is reached, one of the most rural of seaside resorts, with its conspicuous Martello towers along its beach nestling at the foot of an amphitheatre of hills.

The village of Saltwood is within ten minutes' walk of Hythe station, and is one of those quaint rural spots which has escaped the greedy hand of modern builders. Quaint old-fashioned cottages, with their sides and ends covered with Roses and other climbers; forecourt gardens of charming Snapdragons, Lilies, and other good old-fashioned plants; trees laden with promising crops of fruit and large plots of useful vegetables; ruddy faces of the apparently healthy occupiers suggest the happy contentment and condition of a rural life. The Rectory house and the church are situated within close distance of each other. Judging from the outward appearance of the latter it certainly bears the stamp of honoured age, and is a good type of the old village church. The Rectory house is one of the old-fashioned, commodious, and substantially built type usually met with in villages.

FRUIT AND VEGETABLE GARDEN.

Surrounded, then, as Canon Hodgson is by Nature in all her simple beauty, can it be wondered at that he possesses such a passionate love for gardening? But the reverend Canon is, to use a common phrase, a born gardener, having from a youth been an enthusiastic cultivator and exhibitor of Pansies, Gladiolus, and Roses. Nor is he less successful in other branches of gardening; fruit, especially Pears, Strawberries, and Raspberries, and vegetables are well looked after here. The Pear trees, both cordon and pyramid, were fine healthy trees, and the whole of the cordons were carrying fine crops of fruit. Particularly worthy of note were Beurré Rance, Marie Benoist, Beurré Superfin, Olivier de Serres, Pitmas-ton Duchess, usually a shy bearer but succeeds well here, Maréchal de Cour, Princess Marie Louise d'Uccle, Doyenné du Comice, and a number of others. A few good sized bush trees of the serviceable Catillac were carrying heavy crops. Promising trees of such capital sorts of Apples as Stirling Castle, Ecklinville Seedling, Warner's King, Lane's Prince Albert, Golden Noble, Sandringham, The Queen, Worcester Pearmain, and Sturmer's Pippin augured well for a good crop. In the same vegetable garden as the foregoing fruit trees were growing were some capital rows of Harrison's Eclipse Pea, a first-rate early and prolific variety.

HARDY PLANTS.

On each side of the central walk were borders full of such showy herbaceous plants as *Leucanthemum maximum*, *Campanula persicifolia* alba, snow white masses of the lovely *Iberis gibraltarica*, Pinks, and a large quantity of the best strain of Brompton Stocks we have seen for some time. It is only just to say that the seed of the latter was supplied by Messrs. Veitch & Sons. A good-sized plant of the comparatively rare *Rosa rugosa* alba is worthy of note as being a capital companion to its congener *R. rugosa*, and growing against the south wall were vigorous young trees of Marie Van Houtte and other Tea Roses laden with lovely blooms.

PELARGONIUMS.

At the lower end of this wall stands a substantially built vinery, which, however, has to do duty as a greenhouse too, as the glass erections are not extensive. Notwithstanding the fact that plants are grown largely in this house, the Vines were carrying a first-rate crop of Black Hamburgh Grapes. The Vines were comparatively young, but owing to generous treatment both stems and foliage were remarkably robust and large—a credit to the Canon and his able gardener, Mr. Shoesmith. Among the many specialities grown there so successfully is the Zonal type of Pelargoniums. All the best, newest, and most striking in colours find a home in this garden. The front stage of the vinery just mentioned was filled with such capital sorts as Mrs. Lord, a fine glowing crimson; Aglaia, intense crimson, large pips; Lord Mayo, a well-formed double pink; Lady Reed, white, with salmon eye; Sophie Birkin, a good variety of the oculated type; Sunbeam, brilliant crimson; Queen of the Belgians, a first-rate silver white; Edith Little, a very effective variety,

white, with a shade of plum colour; Metis, rich scarlet, individual blooms very fine and truss large; Paul Charbonnier, a very fine double scarlet; Le Cygne, double white; Constance, single pink; and Golden Glory, a very rich crimson. The foregoing list is only an enumeration of the most striking varieties that were so conspicuously in flower at the time of our visit. Named varieties of Gloxinias are also a feature here, many of which were in flower. The Duchess of Connaught is a beautiful variety, with crimson-and-white blooms. This variety is considered to be identical with another so-called variety, sent out under the name of Duchess of Edinburgh; Mrs. Bause, white and pink; Lord Derby, purplish blue; Lady Brookes, white and violet; Lady Musgrave, red; and Nydia, purple, being also noteworthy varieties.

PANSIES AND ROSES.

Situated within a short distance of the latter garden is another vegetable, fruit, and Rose garden combined. There even the most unpractised eye could discover the trace of a master hand in the cultivation of its contents. This garden is in a capital situation, sloping well to the south with a deep, rich, and alluvial loamy soil. The first thing to arrest attention is a large bed of the best varieties of Pansies. Canon Hodgson is a great admirer of these chaste and lovely flowers. We can only note a few of the most striking varieties in passing, among which Lord Beaconsfield, yellow, with rich velvety centre; Miss Bury, centre white, with an outer band of purple; Danger, a fine rich purple self; James Morgan, popularly called the Wallflower-coloured; Evelyn Bruce, Buttercup, Mrs. Taylor, and Mrs. Llewelyn, one of the new yellow bedding type, are deserving of special note.

Now we come to the plantations of Roses—standard and dwarf Hybrid Perpetuals. About 150 are grown on standards and the same quantity as dwarfs, and on these robust, healthy, and clean trees and bushes are grown the many fine examples of blooms which have been so successfully exhibited at the various horticultural shows. Nearly all the so-called "miffy" varieties succeed well, the excellent soil and deep cultivation practised, and the bracing healthy air, thoroughly indicating by the texture of foliage and robustness of growth that Roses find a congenial home there. We must not forget to mention how well that charming, but usually somewhat difficult to manage Rose, A. K. Williams, succeeds here. Mr. Shoesmith informing us that he experiences no trouble in growing and flowering it successfully under the same treatment as the others. Mr. Shoesmith is a firm believer in close pruning, and the plants certainly testify that his practice is sound. Heavy mulchings of manure are spread over the ground so occupied by the Roses, which is an excellent preventive of excessive evaporation.

Perhaps the most interesting feature of all to those who admire Tea Roses, and can appreciate a feast of their exquisite, sweet, and delicately coloured blossom during the early days of Juno, is the collection growing against a wooden fence, 4 feet high, and upwards of 100 yards long, at the south bottom of this garden. This fence was originally occupied by low-trained Plum trees, but as might have been expected, the latter was unsatisfactory. Canon Hodgson, wishing to grow Tea Roses, consulted his present gardener a year or two ago, and the latter hit upon the idea of utilising this fence. The ground was accordingly heavily manured and deeply trenched to the width of 4 feet, and in this the best varieties of Teas were planted. To guard against the north winds, a simple but efficient protection is used in the shape of wooden sheep hurdles, placed at a distance of 4 feet from the fence, between the bars of which branches of Gorse and Broom are interwoven. Here the young trees found a congenial home, and soon repaid both owner and gardener for the expense and trouble bestowed on them. So well did they succeed last year, that blooms shown at Canterbury won the bronze medal of the National Society. As a guide to others who may wish to adopt a similar plan, I give the names of the sorts that succeed the best here. The following were specially noticeable on account of size, form, depth, and purity of colour—Hon. Edith Giffard, Anna Ollivier, Etoile de Lyon, Catherine Mermet, Marie Van Houtte, J. Ducher, Perles des Jardins, Madame Lambert, Souvenir d'Elise, Souvenir d'un Ami, Innocente Pirola, Comtesse de Nadaillac, Francisca Kruger, a new and but little-known Tea Rose in English gardens, and Princess of Wales, one of Bennett's Pedigree varieties. With such sterling novelties as these, Canon Hodgson will probably be well to the front at the exhibition table this season.

AN EXAMPLE OF TRENCHING.

Much discussion has been going on in the Journal latterly about the value of deep trenching, and if an example of its value were needed I could certainly point to one instance of success, and that in the vegetable gardens here. I was astonished to see such fine plantations of Strawberries, Raspberries, and other vegetable crops. A plantation of President Strawberry, one year old, was marvellously vigorous, each individual plant measuring 2 feet in diameter. Not less worthy of note was another plantation of Dr. Hogg, the fruit last season averaging fourteen to the pound. Nor is this extraordinary vigour maintained at the expense of a good crop of fruit, as the crowns were bristling with buds and young fruit. Strawberries are special favourites with Canon Hodgson, hence one is not surprised to find good examples of such new varieties as Laxton's Captain and King of the Earlies amongst his collection. So much does the Canon enjoy this luscious fruit, that it is no uncommon thing to see him amongst his Strawberry beds at four o'clock in the morning.

A peep into a frame ground close by reveals a capital batch of sturdy Chrysanthemums which promise to yield blooms, which, if slightly in advance of those shown by Mr. Shoesmith at the Aquarium last autumn, will not be far behind others this year. He is only a tyro in growing

for exhibition, but if the plants at all respond to his energetic and persevering treatment, he will not fail to eventually attain success.

THE AMERICAN GARDEN.

But what about the flower garden and pleasure grounds usually described first? some will be inclined to ask. Well, these have no pretensions to special notice, being of the simplest description. A few shrubs, Rose beds, and a little bedding out, together with a fine specimen of Cedar of Lebanon, are the chief characteristics of the grounds surrounding the house. The visitor might turn away disappointed at finding such a meagre illustration of ornamental gardening as surrounds the rectory house, and imagine the owner to be a strict utilitarian, growing only the useful and despising the ornamental in gardening; and then, as if to offer some solace for the temporary disappointment, we are asked to take a stroll across a few meadows to see what in the distance resembles a coppice of Oak and other forest trees. A walk of five minutes brings us to an ancient-looking door. Passing through this and over a foot bridge across the railway which runs into Hythe, we are on the confines of the apparent coppice. We pass through, and between the branches of trees and shrubs, and descend into a valley for a few yards, when a most charming sight is revealed, huge masses of every conceivable colour of Rhododendron and hardy Azaleas blending and harmonising with the vast belting and canopy of foliage afforded by the Oak and other forest trees above. This is known as the American garden for miles around, visitors coming from Folkestone, Deal, Dover, and Hythe to see this charming spot in May and June. Canon Hodgson has hills printed and distributed inviting persons to come, and I need hardly say how readily this invitation is accepted. No restriction is placed on their perambulations, a key being given to every party by the gardener, and thus they go unrestricted, evidently valuing the Canon's generosity, and not one instance is known of their taking advantage of this freedom to pluck a single flower of these choice shrubs. Sixty years ago Archdeacon Croft, a former rector of Saltwood, and a great patron of horticulture, discovering certain natural advantages in this wood for forming an American garden in the shape of a natural bed of peat along the bottom of the valley, with ample shelter on all sides in the form of forest trees, at once resolved to turn them to account. Great taste was shown in the formation of the various walks, and in the selection and disposition of the many lovely varieties and species of Rhododendrons. Up through the centre of the valley is a beautiful green sward of turf, and here and there, towering up to the sky, are grand specimens of *Picea nobilis*, 40 feet high; *Abies Cunninghamii*, 40 feet; a noble specimen of the Redwood Cedar, *Juniperus virginiana*, pronounced by Dr. Hooker to be one of the finest in England; *Wellingtonia gigantea*, *Araucaria imbricata*, *Taxodium distichum*, *Juniperus recurva*, and *Cryptomeria japonica*. Other choice trees, such as the *Paulownia imperialis*, which, on the authority of the late Dr. Lindley, to whom Archdeacon Croft sent blooms at the time, was the first to bloom in England, and which is a truly noble tree; *Magnolia speciosa* and *glauca*; *Kalmia latifolia*, a very fine example over 8 feet high; *Spiraea Fraseri*, a charming shrub, so graceful in habit; and *ariæfolia*, another very large specimen of the genus *Spiraea*, are a few of the interesting and beautiful trees growing in this lovely spot.

RHODODENDRONS.

Interesting and valuable as these noble specimens of trees are, they could not compete in loveliness with the charming floral display of Rhododendrons. Such huge trees (for some were certainly entitled to be designated thus, owing to their great size) of that showy old species *ponticum*, *Blandyanum*, *fastuosum* fl.-pl., and a number of others, with smaller plants of Mrs. John Clutton, Marshal Brooks, rich scarlet; Sigismund Rucker, magenta; Princess Mary, light bluish; Mrs. John Penn, salmon pink; Kate Waterer, rich crimson; Lady Eleanor Cathcart, rose; Baron Schroeder, plum colour; W. E. Gladstone, a lovely pink; The Queen, bluish; and Marchioness of Lansdowne, rose, were a perfect mass of blossom, and rendering it a sight not easily to be forgotten. These are simply a few of the most striking examples; suffice it to say that every variety worth growing will be found here. A few splendid clumps of *Azalea indica alba* were one mass of snowy whiteness. These had been planted with great taste and judgment, for here and there they added life to the picture by brightening up dull places. Wending our way through the many walks we came upon several real treasures and surprises. In one spot we saw two huge specimens of *Camellias* which had grown to an enormous size. *Alba plena* was just going out of flower, as was also another specimen with red flowers. These must have been a grand sight, judging from the immense quantities of fallen petals on the ground. Another curious shrub we found in flower on the side of one of these walks. Sir Joseph Hooker, who had been there a few days previously, states that its name is *Illicium religiosum*, and that it has not flowered out of doors in England before. It is a member of the *Magnolia* family, bearing dingy white flowers and dark green shining foliage. A little higher up the valley is a bog garden, which is in course of formation by Canon Hodgson. This was recently planted with a number of *Iris germanica* and other bog plants, which will in time form an interesting addition to the features of the American garden. A very fine specimen of *Camellia* stands in an isolated position on the turf, also there is a portion remaining of a once large specimen of the Cork Oak (*Quercus suher*), but this is now dying or dead. The *Magnolias* look perfectly at home, as indeed do all of the other trees and shrubs enumerated. Of course there are great natural advantages in the shape of just the soil suitable for this class of plants, shrubs, and trees, and another important gain, a capital shelter from cold winds. Canon Hodgson, certainly deserves to be congratulated for continuing the objects of his predecessor in keeping this

beautiful spot in such excellent form by continual planting of new varieties of Rhododendrons, and his sons in filling up their leisure moments in thinning out dead branches, and the gardener on the general good condition and order of this truly charming American garden.—T. W. S.

NATIONAL CARNATION AND PICOTEE SOCIETY'S SOUTHERN SHOW.

JULY 28TH.

In no previous year has the above Society had a better or more successful show than that held at South Kensington on the date named. In quantity, and more markedly in quality, the exhibits were fully equal to the average. Those redoubtable growers and showers of Carnations, Mr. Turner of Slough, and Mr. Douglas of Ilford, were in grand form, and were responsible for the leading prizes in the principal classes, while other noted exhibitors were also present. Throughout the Show there was praiseworthy evidence of high-class culture, the majority of the blooms being



Fig. 17.—*Helium pumilum* (see page 93).

noticeable for large size and clearness of colours. The following is a list of the prizetakers in the various classes, commencing with

CARNATIONS.

The principal class for these was that for twenty-four blooms, not less than twelve dissimilar varieties. The first prize was taken by Mr. C. Turner, Royal Nurseries, Slough, with superb blooms of the following:—Back row—Master Fred, John Ball, H. K. Mayor, Jas. Douglas, Rob Roy, Jas. Taylor, W. M. Hewitt, and Robt. Lord. Middle row—Robt. Lord, Sir G. Wolseley, E. S. Dodwell, Sarah Payne, John Harland, Sybil, Henry Matthews, and Wm. Skirving. Front row—Sarah Payne, Rob Roy, Arthur Medhurst, Jessica, Wm. Skirving, Hy. Cannell, Sir G. Wolseley, and Fred. Mr. Turner's Carnations have long been famed, but it may be confidently said that no better blooms were ever previously staged than these. Every flower was of considerable size, symmetrical, and remarkably clean. The second prize in this class was awarded to Mr. Jas. Douglas, gardener to F. Whitbourn, Esq., Great Gearies, Ilford, who also showed splendid blooms. They were arranged as follows:—Back row—Jas. Douglas, Hy. Cannell, S. Barlow, Sybil, Jas. Douglas, Matador, Moore's No. 8, and Seedling No. 4. Middle row—Robt.

Lord, Miss Gorton, Miss H. Lidge, Jas. Crossland, a seedling, Rob Roy, F. Nightingale, and Master Stanley. Front row—Rob Roy, Mrs. Barlow, Fred, F. Whitbourn, Maste Fred, Jas. Crossland, a seedling, and Sarah Payne. These were somewhat smaller than the first-prize blooms, but were otherwise admirable. Mr. John Hines, 81, Branford Road, Ipswich, was placed third. The fourth prize was awarded to Mr. F. Hooper, Vine Nursery, Widcombe Hill, Bath; and the fifth to Mr. T. Garratt, South Hill, Bishops Stortford.

There were five exhibitors in Class B for twelve blooms, dissimilar. Mr. Joseph Lakin, Temple Cowley, Oxon, was adjudged the first prize. He showed good blooms of the following varieties:—Back row—Jas. Douglas, Capt. Owen, Ranger Johnson, and Sarah Payne. Middle row—Robt. Lord, Dolly Varden, Thomas Moore, and Fred. Front row—A seedling (rose bizarre), a seedling (purple bizarre), Admiral Curzon, and Thomas Anstiss. Mr. Douglas was again second, but he made an even closer fight in this than in the former class. Good blooms of Sybil, Jas. Crossland, Matador, and Mrs. Gorton were noticeable in his collection. Third, fourth, and fifth prizes were awarded respectively to Messrs. J. Buxton, 27, Manor Street, Clapham; J. Hines, and T. Garratt. Class C, for six dissimilar blooms, saw M. Rowan, Esq., 36, Manor Street, Clapham, to the fore. He showed large, fresh, and symmetrical blooms of George, Wm. Skirving, Jessica, E. S. Dodwell, Florence Nightingale, and Clipper. Mr. Thomas Anstiss, Brill, Bucks, was second with smaller but fresh blooms of Florence Nightingale, Henry Cannell, George, Sarah Payne, Harrison Weir, and Robt. Lord, Mr. G. Wynn, gardener to H. Morris, Esq., The Nest, Hayes, Kent, was placed third, also with excellent blooms, Aubrey Spurling, Esq., The Nest, Blackheath, fourth, and Mr. Glasscock, South Street, Bishops Stortford, fifth. There were ten competitors in all in this class. The classes for single specimens of bizarres and flakes produced, as might have been expected, some grand blooms. Scarlet Bizarres.—The first prize for these was awarded to Mr. Jas. Douglas for Arthur Medhurst, and the same exhibitor and variety were responsible for the second prize. Mr. C. Turner received third and fourth prizes for blooms of Robt. Lord, and Mr. Lakin secured the fifth prize with the same variety. All were good, Crimson Bizarres.—Mr. Turner was awarded first prize for a very fine bloom of John Harland; a seedling from Mr. Douglas took the second prize. Mr. Lakin was third with Master Fred, Mr. Douglas fourth with the same variety, and Mr. Lakin fifth with Thomas Anstiss. Pink Bizarres.—Mr. Charles Turner was again first in this class, a beautifully clear and symmetrical bloom of Sarah Payne winning him the prize. Mr. Douglas was second and third with Wm. Skirving, Mr. Turner fourth with Jas. Taylor, and Mr. Anstiss fifth with Dr. Symonds. Purple Flakes.—Mr. Turner was once more in the van in this class, securing the first prize with a superb bloom of Jas. Douglas, and the second prize with a specimen of the same variety, but little inferior to the former. Mr. Douglas was third and fourth, also with good blooms of Jas. Douglas. Scarlet Flakes.—Mr. C. Turner was first with a very fine bloom of Matador, Mr. Douglas second and third with Hy. Cannell and Sportsman respectively, and Mr. Lakin fourth with Tom Lord. Rose Flakes.—Mr. Turner was first and second with large and very fine blooms of Rob Roy, Mr. Douglas being third and fourth with the same variety, and Mr. Lakin fifth with Sybil. The premier Carnation was the magnificent bloom of Rob Roy in the back row of Mr. Turner's first-prize collection in Class A. It was a large and perfectly symmetrical flower, well deserving the honour it won.

[PICOTEEES.

The position of the leading exhibitors in the principal class for Carnations was reversed in that for Picotees, Mr. Douglas being placed first and Mr. Turner second. The former exhibitor showed remarkably symmetrical flowers very clear in hue. The following composed his collection. Back row—Brunette, Jessie, Liddington's Favourite, Her Majesty, Liddington's Favourite, Brunette, Jessie, and Mrs. Bowers. Middle row—Mrs. Gorton, Muriel, Princess of Wales, Mrs. Payne, Mrs. Chancellor, Her Majesty, Constance Heron, and Royal Visit. Front row—Constance Heron, Baroness B. Coutts, Mrs. Payne, Mrs. Chancellor, Mrs. Gorton, Princess of Wales, Violet Douglas, and Muriel. Mr. Turner was a very close second, his flowers being larger than those of Mr. Douglas but not quite so clean. He showed the following. Back row—Seedling No. 11, Juliette, Robt. Scott, Liddington's Favourite, Favourite, a light-edged seedling, Lucy, and Dr. Epps. Middle row—Dr. Epps, a seedling, Muriel, Constance Heron, Juliette, Seedling No. 11, Mrs. Bower, and Her Majesty. Front row—Mrs. F. Ricardo, Thomas Williams, Brunette, Baroness B. Coutts, Seedling No. 24, Dr. Abercrombie, Muriel, and Brunette. Mr. D. Hooper was awarded third prize for smaller flowers. Five stands of twelve blooms were staged, and Mr. Douglas was again first. His flowers were: Back row—Brunette, Her Majesty, Liddington's Favourite, and Mrs. Chancellor. Middle row—Mrs. Gorton, Constance Heron, Jessie, and Violet Douglas. Front row—Zerlina, Miss Wood, Mrs. Payne, and Princess of Wales. Every bloom was wonderfully fine and of good size. Mr. Lakin was placed second with smaller but good blooms. Mr. John Hines, Mr. J. Buxton, and Mr. T. Garratt received third, fourth, and fifth prizes in the order in which their names are written. Mr. Thos. Anstiss was adjudged first prize in the class for six blooms, showing fresh good specimens of Clara Penson, Favourite, Purple Prince, Jessie, Mary and John Smith. M. Rowan, Esq., was awarded the second prize for attractive blooms. Mr. Glasscock the third, Mr. H. Catley, 16, Claverton Buildings, Bath, the fourth; and Mr. H. Startup, 3, Stanley Road Bromley, the fifth. There was good competition in the class for single specimens. For red heavy-edged varieties, Mr. Douglas was placed first with a good bloom of Brunette, and second with Princess of Wales. Mr. Sanders was third with Dr. Epps, and fourth with J. B. Bryant; Mr. Turner being fifth with Brunette. In the corresponding class for light-edged flowers Mr. Jas. Douglas took the first and second prizes with Thomas Williams, Mr. Turner being third with the same variety, and fifth with Violet Douglas. Mr. Douglas was first and fourth for purple heavy-edged flowers, securing the chief prize with Muriel, and the other with Mrs. Chancellor. Two good blooms of Muriel won the second and third prizes for Mr. Turner, Mr. Sanders being fifth with Zerlina. The same exhibitors took the prizes for light-edged flowers, Mr. Douglas being first and second with Her Majesty, Mr. Turner third and fourth with Juliette, and Mr. Sanders fifth with Her Majesty. The remaining prizes, those for rose or scarlet-edged blooms and yellow grounds, were taken by the exhibitors last

named and Messrs. Hines, Lakin, and Hooper. The premier Picotee was found in Mr. Douglas's first-prize collection of twelve—a beautiful specimen of Liddington's Favourite, very large and pure.

SELFS, FANCIES, OR YELLOW GROUNDS.

The principal class in this section was likewise for twenty-four blooms, and here again Mr. Turner showed magnificently. His flowers were of immense size, symmetrical throughout, and charmingly clear. His stand, which was deservedly admired, consisted of the following:—First row (back)—The Governor, Prince Henry of Battenberg, Lady Stamford, Guardsman, Florence, and Lady Stamford. Second row—Harry Matthews, Grandiflora, Edith, The Governor, Prince Henry of Battenberg, and E. Adams. Third row—Edith, W. Skirving, Rosa Bonheur, Robert Lord, Janira, and Mary Morris. Front row—Jupiter, Colonel Wood, Cinto de Orion, Polly Cheetham, Mrs. Logan, and Chromatella. Mr. Douglas was placed second; he had an excellent stand of flowers, of good size and colour. Mr. F. Hooper was adjudged third prize; Mr. Catley the fourth; and Mr. G. Meddick, 6, Corn Street, Bath, the fifth. For twelve blooms, dissimilar, Mr. Lakin was deservedly awarded first prize, the following varieties being well represented:—Back row—Sir Toby Belch, The Queen, John Soper, and a seedling. Middle row—Mrs. Medhurst, Mrs. Mostyn Owen, Dean Wood, and Ruby May. Front row—a seedling (purple self), a seedling (rose self), Huson Morris and Mrs. Morris. Huson Morris, Esq., secured the second prize with good blooms, one or two of which, however, were somewhat faded. Mr. Thomas Anstiss took the third prize; fourth and fifth places being taken respectively by Messrs. Aubrey Spurling and W. Maddick. Mr. C. Turner was the premier prize-taker in the class for twelve yellow ground Picotees. His blooms were excellent alike in size and contour, the following varieties being represented:—Back row—Prince of Orange, Mrs. Colman, Prince of Orange, and Ne Plus Ultra. Middle row—Dove, Ne Plus Ultra, Princess Beatrice and Mazzini. Front row—Lady Mary Lascelles, Princess Margaret, Bullion, and Princess Margaret. Mr. Douglas received second prize, his collection also being noteworthy for the size and freshness of the blooms. Class M, for nine specimens in pots, saw Mr. Turner again to the fore, the varieties which won him the premier prize being Matador, Miss Small, Favourite, Mrs. F. Ricardo, Jupiter, Jessica, Lady Stamford, Miss Lee, and Guardsman. Mr. Douglas was placed second with good plants and flowers.

MISCELLANEOUS EXHIBITS.

Most prominent of the exhibits not for competition were the eight splendid stands of cut blooms from Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, which were greatly and deservedly admired. A silver Banksian medal was awarded to them. Mr. P. Perry, gardener to W. G. Rowett, Esq., Woodlands, Cheshunt, exhibited stands of the popular Mary Morris; Huson Morris, Esq., sent blooms of a white seedling, named Ella Morris, which will probably become a favourite. From Mr. Toby, 3, St. Mark's Grove, Chelsea, S.W., came a handsome collection of self Carnations. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, exhibited several stands of very fine cut blooms, also twelve blooms of a new white Glove Carnation named M. T. Walker, which evoked considerable admiration. The flowers were large and pure. The same nurseryman also sent stands composed of large bunches of cut blooms. Mr. H. Cannell, The Home for Flowers, Swanley, Kent, sent stands of cut blooms, which were very attractive.

CERTIFICATES.—First-class certificates were awarded to Mr. Douglas for the following seedlings:—Carnation Rosamond, crimson bizarre, good form, regular flakes of crimson and deep purple; it also received a first prize. Carnation Margaret, rose flake, large flower, broad smooth petals, bright rose flakes; this also received a first prize. Carnation Thalia, rose flake, good broad flake, handsome flower; a second prize was awarded to this. Carnation Grace, pink and purple bizarre, good form, clear, well marked flower; a first prize was awarded. Picotee Dr. Horner. This, though exhibited by Mr. Douglas, was raised by the Rev. F. D. Horner. It is a red, light edged flower, of excellent form, and remarkably pure.

A vote of thanks was accorded to Mr. F. W. Sanders, gardener to J. W. Larking, Esq., The Firs, Lee, Kent, for a yellow self Carnation of good form and colour.

DARLINGTON ROSE SHOW.

WITH Darlington ends the long list of Rose shows which commenced just a month ago at Canterbury, on June 27th, and with it, too, my circuit as a Judge. There may be other shows where Roses are exhibited, but all Rose shows are now over, and exhibitors, judges, reporters, may as far as these are concerned rest on their laurels—or their Cabbages; and while I reserve my notes of the season as a whole I concern myself with the latest, and perhaps the pleasantest, Show of the year. Well, other most pleasant ones rise up before me, and I must not quite say that, but at any rate as pleasant and as well managed a Show as any of its predecessors. As I have before said, Mr. Whitwell is not only "two single gentlemen rolled into one," but he is President, Secretary, Treasurer, Committee, and Manager; an autocrat of the purest type, and showing that where a despot is what he ought to be it is the best form of government to live under.

The Show of 1885 was favoured, as all its predecessors have been, with fine weather, and was held in the usual place, Southend Park, which is kindly lent for the occasion by the Misses Pease; in fact, the weather was too fine for the Roses, but not for the company who came, for the intense heat had been too much for the southern growers. Not one nurseryman came from the south. Messrs. Paul & Son, the two Cants, Prince, and Turner were all conspicuous by their absence. Some of the Midland men were there, the Cranston Company and Frettingham; but the northern men, Harkness, Mack, and May were in full force. The only southern amateur who put in an appearance was Mr. Lindsells of Hitchin, and he was happily successful, as he deserved to be, for his courage. It was not to be wondered at that exhibitors could not come. With the thermometer at 82° it may well be imagined what a terrible ordeal Roses had travelling for six or seven hours on a railway, and I think nothing excited the wonder of rosarians more than the condition in which Mr. Hall brought his Roses from Cheshire. Had the weather been such as to enable all who entered to come it would have been one of the fullest shows of the season; but of

course the absence of so many who had entered made many gaps in the long and beautiful tent in which they were displayed.

Although in following the schedule I take the nurserymen first, yet on this, as on most occasions this year, the amateur Roses were superior. This is not to be wondered at. Growers such as Messrs. Whitwell, Hall, Pemberton, Slaughter, and others, who bestow great pains and labour on their plants, and have them well under command, and being thoroughly good rosarians, studying the wants of each variety, must be in a more favourable position for getting exhibition flowers than those who have tens and hundreds of thousands to look after; but some of the stands to-day were of a high order of merit, especially those exhibited by Messrs. Harkness & Son. The highest class was that for sixty, Mr. Whitwell thinking this quite large enough for the north, and in this Messrs. Harkness & Son were well first with an excellent stand of bright and clean flowers, consisting of Alfred Colomb, François Michelin, Horace Vernet, Marie Verdier, Helen Paul, Charles Lefebvre, Comtesse de Serenye, Ulrich Brunner, Baroness Rothschild, Beauty of Waltham, Eugène Verdier, Prince Arthur, Madame Gabriel Luizet, A. K. Williams, Madame Sophie Fropot, E. Y. Teas, Madame Margottin, Madame Hippolyte Jamain, Pierre Notting, Marie Guillot, Exposition de Brie, Lady Mary Fitzwilliam, Marquise de Castellane, Violette Bouyer, Auguste Rigotard, Marie Rady, Reine du Midi, Dr. Andry, Etienne Levett, La France, Baron Hausmann, Paul Neron, Madame Berard, Emilie Hausberg, Le Havre, M. Hippolyte Jamain, Duke of Wellington, Abel Carrière, President, Louis Van Houtte, Antoine Ducher, Duke of Edinburgh, Innocente Pirola, Edouard Morren, Harrison Weir, Queen of Queens, Star of Waltham, Maréchal Niel, Duc de Rohan, Merveille de Lyon, Madame Clémence Joigneaux, Magna Charta, Marie Finger, Victor Verdier, Madame Willermoz, Duke of Connaught, Duchesse de Morny, Camille de Rohan, and Duchesse de Caylus. The Cranston Company were second, Mr. May equal second, and Mr. Frettingham (Beeston) third.

In Class 2, for twenty-four trebles, Messrs. Harkness & Sons were again first with Ulrich Brunner, Emilie Hausberg, Charles Lefebvre, François Michelin, La France, Paul Neron, Pierre Notting, Merveille de Lyon, Louis Van Houtte, Antoine Ducher, Duke of Edinburgh, Madame Victor Verdier, Peach Blossom, Prince Arthur, Comtesse de Serenye, Fisher Holmes, Marie Baumann, Duc de Rohan, Magna Charta, E. Y. Teas, Violette Bouyer, and A. K. Williams. The Cranston Company were second.

In Class 3, for thirty-six, the same firm again headed the list with Charles Lefebvre, Emilie Hausberg, Alfred Colomb, Merveille de Lyon, Paul Neyron, Beauty of Waltham, La France, Marie Baumann, Madame Willermoz, Duchesse de Morny, Marie Finger, Le Havre, Prince Arthur, Maréchal Niel, Exposition de Brie, Miss Hassard, E. Y. Teas, Duc de Rohan, Magna Charta, A. K. Williams, François Michelin, Prince de Portia, Fisher Holmes, Madame Victor Verdier, Louis Van Houtte, Lady Mary Fitzwilliam, Duke of Edinburgh, Duke of Connaught, Violette Bouyer, Duke of Wellington, Marie Verdier, Prince Arthur, and Ambroise Ducher. Mr. H. May was second, and the Cranston Company third.

In Class 4, for thirty-six distinct varieties, Messrs. Burrell & Co. were first with Marie Rady, Mdle. Marie Cointet, Alfred Colomb, Dupuy Jamain, Princess Beatrice, Charles Darwin, Countess of Rosebery, Baron de Bonstetten, Marie Verdier, A. K. Williams, Sultan of Zanzibar, Innocente Pirola, Louis Van Houtte, Emilie Hausberg, Marie Bernardin, Abel Carrière, Etienne Levett, La France, Star of Waltham, Madame Hippolyte Jamain, John Stuart Mill, Queen of Queens, Merveille de Lyon, Earl of Pembroke, Marie Finger, Prince Camille de Rohan, François Michelin, Duchess of Bedford, Duke of Teck, Charles Lefebvre, Marie Baumann, Comtesse de Nadaillac, Sénateur Vaisse, and Madame Gabriel Luizet. Messrs. R. Mack and Co. were an equal first, and Mr. John Boston third.

In Class 5, for eighteen trebles, Messrs. Mack & Son were first with Alfred Colomb, Baroness Rothschild, A. K. Williams, Comtesse de Serenye, E. Y. Teas, Madame Gabriel Luizet, Charles Lefebvre, Duchesse de Vallombrosa, Madame Victor Verdier, Exposition de Brie, Madame Hippolyte Jamain, Duke of Wellington, La France, Duchess of Bedford, Duchesse de Morny, Dr. Andry, and Horace Verdier.

In Class 6, twelve Teas or Noisettes, Messrs. Burrell & Co. were first with Catherine Mermet, Madame Hippolyte Jamain, Comtesse de Nadaillac, Souvenir d'un Ami, Reine de Portugal, Niphetos, Princess of Wales, Innocente Pirola, Caroline Kuster, Madame Angele Jacquier, Jean Ducher, and Rêve d'Or.

In Class 7 for twelve Teas, trebles, Messrs. Harkness & Son were first with Catherine Mermet, Madame Hippolyte Jamain, Maréchal Niel, President, Marie Guillot, Madame Lambard, Marie Van Houtte, Duc de Magenta, Jean Ducher, America, Innocente Pirola, and Madame Berard. Messrs. May & Son second.

We now turn to the amateurs, where Mr. E. R. Whitwell exhibited in grand style, although not in as good form as we have seen him. Having seen his garden I know that late as it was he was not yet fully in bloom; but still his flowers were very grand. In Class P for thirty-six varieties, he was first with La France, Thomas Mills, Captain Christy, Etienne Levett, Merveille de Lyon, Marie Baumann, Marie Rady, Duchesse de Morny, A. K. Williams, Duke of Connaught, Madame Charles Wood, Princess Mary of Cambridge, Eugène Verdier, Louis Van Houtte, Marquise de Castellane, Jean Ducher, Mons. Noman, Camille de Rohan, François Michelin, Alfred Colomb, Charles Lefebvre, Marie Verdier, Madame Victor Verdier, Pride of Waltham, Dr. Andry, Duke of Edinburgh, Baroness Rothschild, John Stuart Mill, Madame Hippolyte Jamain, Le Havre, Comtesse d'Oxford, Madame Lacharme, Lord Macaulay, Belle Lyonnaise, E. Y. Teas, and Victor Verdier. Mr. T. B. Hall of Larchwood, Rockferry, was second with a stand of great excellence, and considering the distance he had come with them they bore proofs of very superior cultivation. In Class 9 for twenty-eight varieties, trebles, the same gentlemen occupied the same position. Mr. Whitwell's Roses were La France, Charles Lefebvre, François Michelin, Alfred Colomb, Madame Hippolyte Jamain, Thomas Mills, Marie Rady, Duchesse de Morny, Pride of Waltham, Mary Baumann, Duke of Connaught, Marie Verdier, Princess Mary of Cambridge, Madame Victor Verdier, Lord Macaulay, Captain Christy, E. Y. Teas, and Merveille de Lyon.

In Class 10, for twenty-four varieties, Mr. Geo. Finlay, gardener, East Layton Hall, and Mr. J. E. Backhouse were equal first. The stand of the former contained, Dr. Andry, François Michelin, Merveille de Lyon, Charles Darwin, Ulrich Brunner, La France, Etienne Levett, Louis Van Houtte,

Black Prince, Marie Baumann, Auguste Rigotard, Marie Finger, A. K. Williams, Sultan of Zanzibar, Baroness Rothschild, Duchesse de Caylus, Gabriel Luizet, E. Y. Teas, Princess Mary of Cambridge, Prince Arthur, Dupuy Jamain, Alfred Colomb, and Marie Rady. In Class 11, for twelve single trusses, Mr. E. B. Lindsell of Hitchin was first with a good stand of Marie Baumann, Victor Verdier, Maréchal Niel, Duchess of Bedford, Prince Arthur, Anna Olivier, Alfred Colomb, Horace Vernet, A. K. Williams, Charles Darwin, Pride of Waltham, and Le Havre. In Class 12, for twelve singles, open to residents within thirty miles of Darlington who have not taken a first prize at a National Rose Society's Exhibition beside Darlington, Mr. Austin Whitton of Bedale was first with François Michelin, Etienne Levett, A. K. Williams, Madame Falcot, John Stuart Mill, La France, Duke of Edinburgh, Captain Christy, Paul Neyron, Souvenir d'Elise, Beauty of Waltham, and Pierre Notting. Mr. F. Myers was second, Mr. John Mitchell third, and Mr. S. Shortt fourth. In Class 13, for nine single blooms, Mr. James Carnegie was first with Camille Bernardin, Madame Berard, Marie Finger, La France, Charles Lefebvre, Alfred Colomb, Duke of Edinburgh, John Hopper, and François Michelin. Mr. James Noble was second, and Miss Fanny Newby, Ouston Hall, Stockton, third. In Class 14, for six distinct, Mr. Jas. Finger was first with Etienne Levett, Captain Christy, Marquise de Castellane, Duc de Wellington, Gabriel Luizet, and La France. In Class 15, for twelve Teas or Noisettes, open to all members, Mr. Eckroyd Claxton was first with a beautiful stand, consisting of Madame Cusin, very lovely, Adrienne Christophle, Catherine Mermet, Alba Rosea, Comtesse de Nadaillac, Marie Van Houtte, Francisca Kruger, Hippolyte Jamain, Madame Lambard, Edith Giffard, President, and Princess of Wales. Mr. T. B. Hall was second. In Class 16, for six Teas, Mr. E. R. Whitwell was first with Catherine Mermet, a fine bloom, a little wanting in colour; Innocente Pirola, Bouquet d'Or, Marie Van Houtte, Belle Lyonnaise, and Madame Lambard. Mr. W. Boyes was second, and Mr. Whitton third. In Class 18, for twelve blooms of best dark Hybrid Perpetuals, Mr. E. R. Whitwell was first with Marie Baumann, Messrs. Mack & Son were second, and Mr. T. B. Hall third. Mr. Whitwell also took first for the best box of light Roses with La France, one of the most perfect boxes of the flower I ever saw exhibited. In Class 19, for the best twelve yellow Teas or Noisettes, Mr. May was first with Maréchal Niel, and in the collection of Moss Roses the Cranston Company was first, and indeed in these two last cases there were no other exhibitors. The silver medal given by the National Rose Society for the best Hybrid Perpetual in the amateur classes was awarded to Mr. Whitwell for a remarkably fine bloom of Etienne Levett, and the silver medal for the best Tea to Mr. Claxton for the bloom of Madame Cusin alluded to above.

I had to leave the Show early, but I find that, as far as attendance is concerned, it is the most successful that the Society has ever held, nearly 6000 persons having been present, and this without any other attraction than a fine day, and the splendid band of the 1st Life Guards, which "discouraged most excellent music." Need I add that all the arrangements, under the practised hands of Mr. Whitwell and Mr. Boyes, were perfect in every respect, and the utmost satisfaction was expressed by all who had the pleasure of being there.—D., Deal.

THE INFLUENCE OF FORESTS ON CLIMATE.

THE third number of *Petermann's Mittheilungen* for this year contains an article by Herr A. Woeikof on the influence of forests on climate. The commencement of a scientific investigation of this subject was made when the Bavarian forest meteorological stations were established, and when Prussia, Alsace-Lorraine, France, Switzerland, and Italy followed the example. As a general rule it may be laid down that in the warm seasons, as between forests and places close at hand which are treeless—1, The temperatures of the earth and air are lower in the former; 2, Their variations are less; 3, The relative humidity is greater. After examining observations as to evaporations, Herr Woeikof states that the influence of forests in diminishing evaporation from water and the soil is so great that it cannot be accounted for alone by the lower temperature of the hot months, the greater humidity, or even by the shade. An important influence, which has hitherto been but little appreciated, is the protection from the wind afforded by the trees, and this the writer regards as more important than all the others together in reducing the degree of evaporation. With regard to the influence of forests on rain and snowfall, there is yet only a single series of observations supplying comparative statistics, and extending over a sufficiently long period. These were taken in the neighbourhood of Nancy, and they show an important influence of forests in increasing the rainfall.

It might appear that the effect of forests on rain in the climate of Central Europe in winter would be small, for the difference between the temperature and humidity of the forest and the open is very little, and the quantity of the moisture in the atmosphere is small. But the observations show that it is at this time of the year that forests get much more rain. This the writer attributes to the clouds being lower, the resistance which the forest offers to the movement of the air, and to the moist west wind. Forests retain rain by the undergrowths of grass, moss, &c., much better than open ground, and let water off superficially only after a heavy rainfall; the remainder filters upwards slowly, and much of it is used for the evaporation of the trees. Although forests, especially thick luxuriant forests, cannot exist without certain supplies of moisture, yet it is the same to them when the supplies come, for they retain what they get and use it over a long period. One example of this is the Lenkoran forest on the west coast of the Caspian, where the vegetation is more luxuriant than in any other part of Europe, yet very little rain falls in summer, but the rainfall in autumn and winter is great. The water is stored up by the forest, and is used in evaporation during the heat of summer. Humidity of the atmosphere, however, is not inconsistent with a high temperature, as the Red Sea shows; but in forests the humidity is due to the evaporation

of the leaves—in other words, to a process by which heat is converted into work, and hence the coolness.

Herr Woeikof then endeavours to ascertain the influence of forests on the climatic conditions of their neighbourhoods in the western parts of the Old World, between the 38th and 52nd degrees N. latitude, the places selected being in all cases in the open. Thus for the 52nd degree eight stations are taken between Valentia in Ireland on the west and the Kirghiz steppes on the east; for the 50th, Guernsey on the west, Semipalatinsk on the east, and thirteen stations, and so on for each two degrees of latitude to 38°. The general result of the observations in fifty stations in six different degrees of latitude is that in Western Europe and Asia large forests have a great influence on the temperature of places near them, and that by their influence the normal increase of temperature as we travel eastward from the Atlantic Ocean to the interior of the continent is not merely interrupted, but they give places far removed from the coast a cooler summer than those actually on the sea. A striking example of this is Bosnia. An examination of the statistics shows—1, That in Bosnia the summer is 2.5° to 4.5° cooler than in Herzegovina; 2, Even on the island of Lissa, in the full influence of the Adriatic Sea, the summer temperature is more than a degree higher than that of Bosnia, which is separated by lofty mountain ranges from the sea. Bosnia owes this comparatively cool summer to its great forests, whilst Herzegovina is almost disafforested. To sum up: forests exercise an influence on climate which does not cease on their borders, but extends over a larger or smaller adjacent region according to the size, kind, and position of forest. Hence man by afforestation and disafforestation can modify the climate around him; but it is an extreme position to hold that by afforestation the waste places of the earth can be made fertile. There are places incapable of being afforested, which would not give the necessary nourishment to trees.—(Nature.)

HORTICULTURAL EXHIBITIONS.

The following list of Shows, with the dates, may possibly be useful for reference.

- August 1.—Liverpool (two days).
 „ 1.—Southampton (two days).
 „ 2.—Antwerp Exhibition of Plants (five days).
 „ 3.—Northampton.
 „ 11.—Royal Horticultural Society (plants and flowers).
 „ 18.—Basingstoke.
 „ 19.—Shrewsbury (two days).
 „ 20.—Salisbury.
 „ 21.—Exeter.
 „ 25.—Royal Horticultural Society (Cottagers' show).
 „ 27.—Ludlow.
 „ 27.—Reading.
 Sept. 2.—Glasgow.
 „ 3.—Abingdon.
 „ 4.—Crystal Palace (Fruit and Dahlias), (two days).
 „ 8.—Royal Horticultural Society (Dahlias and Grapes).
 „ 9.—Edinburgh (two days).
 „ 9.—Northampton (two days).
 „ 27.—Antwerp (fruit and vegetables), (three days).
 „ 29.—Aberdeen.
 „ 30.—Oxford.
 Oct. 7.—Crystal Palace (fruit and Potatoes).
 „ 13.—Royal Horticultural Society (fruit and vegetables).
 „ 27.—Royal Horticultural Society (Chrysanthemums and vegetables).

for days afterwards—spoiling the fruit and wasting the energies of the plants.

MELONS.—The earthing-up of late plants should be completed without much further delay, and in doing so let the soil be trodden down firmly all over the surface of the bed, after which the plants should have their growths re-arranged, the shoots and laterals thinned, and the blossoms impregnated when the pollen is dry, stopping at the same time one joint beyond the fruit. In ordinary seasons artificial impregnation is not necessary, as the bees will do it effectually, but in case of dull weather it will be advisable to resort to it in order to make sure of a good set. Plants swelling their fruit will need the supports put to them in good time. These supports should be suspended in a sloping position to prevent the lodgment of water upon them.

In houses in which plants are swelling their fruits maintain a moderately brisk growing temperature of from 75° to 80° by day from fire heat, increasing 10° to 15° with sun, and 70° at night. In structures where the fruit is approaching maturity let there be a decrease in the atmospheric moisture, which will be readily effected by an increase of ventilation. In pits and frames where the fruits have set too thickly thin them out to four or five to a plant, according to the strength of the plants, as soon as it can be seen which are going to swell. Select the most evenly-shaped fruits, which should be regularly distributed over the plants, thereby causing an equalisation in the flow and concentration of the sap at regular distances from the stem. Examine the soil in every stage of growth at least twice a week, giving a good supply of water when necessary, but be careful not to apply it unless required.

PEACHES AND NECTARINES.—Trees in mid-season and late houses will require frequent and careful attention to thinning and regulating the summer growth, which should be laid in so thin that the foliage has full exposure to light and air. Stop all gross growths, or remove them if likely to interfere with the equalisation of the sap or are likely to overcrowd, endeavouring to maintain an even balance of moderately strong wood that will ripen well, as a well plumped bud, a perfect blossom and a good set of fruit cannot be expected from badly ripened wood. Syringe the trees thoroughly so as to dislodge any spider that may have obtained a footing on the leaves. If this is done effectually twice a day it ought to keep down this and other pests. If not, an insecticide must be brought into requisition promptly. Syringing must of course cease when the fruit begins to ripen, but a good moisture should be maintained by damping available surfaces, and the ventilation should be free, leaving some air on constantly. Inside borders must be well supplied with water passing through a mulching of decayed manure, and outside borders must be well cared for, giving liquid manure if necessary, in any case maintaining a moist condition of the soil, so as to sustain a healthy growth. Early houses that have not been stripped of the roof lights will need all the air possible, and must have the foliage kept clean by syringing or otherwise applying an insecticide. The borders must also be kept in a proper condition as to moisture, and in the case of weakly trees some liquid manure will assist them to form perfect embryo buds and encourage root-action, laying the foundation of a strong bloom and a good set another season. Whatever is contemplated in the matter of renovating the borders, lifting and relaying the roots in fresh material should be made preparation for betimes, so that there may be no delay when the work is taken in hand, as its success depends on its being done carefully, judiciously, and with dispatch.

PLANT HOUSES.

Lilium longiflorum.—This is a charming dwarf-growing Lily, and in many respects is equal to *L. candidum*, if it does not surpass that useful variety for various forms of decoration. It is very cheap, increases rapidly, and can be grown to perfection in much smaller pots than *L. candidum*, which adds much to its value for decoration. Well-developed plants in 4 and 5-inch pots, with from two to four or more of its large pure white trumpet-shaped flowers, are very effective when arranged amongst other plants with its flowers rising well above them. This variety will also flower a second time. Very frequently early-forced plants throw up from the base and commence flowering again in autumn, and will continue to do so more or less during the winter if kept in a temperature not lower than 50°. Our latest batch are just over, and will be plunged outside until the approach of frost, when they will have the protection of a cold frame during the winter. Lilies should never be allowed to become dusty in any state; on the other hand, they must not be saturated with water, or their roots will perish. More Lilies are ruined by drying them off and saturating them with water than from all other causes put together. Those that flowered early may now be repotted if they need it; if not, top-dress with rich material. In any case they should be turned out of their pots and the drainage examined, for good and efficient drainage is one of the principal items in the successful cultivation of these charming bulbs. The variety under notice bears dividing just as it is starting into growth without the slightest injury. The only attention needed after disturbing the roots is to keep the plants close in a frame for a fortnight or three weeks until they commence to root afresh. Those anxious to cultivate this Lily in pots will be able to obtain good bulbs early in the month of October.

Lilium Harrisii.—This is undoubtedly a variety of the preceding, and in some respects slightly superior. It can be readily distinguished from *L. longiflorum* by its more slender growth and deeper shade of green, the leaves being a little longer, not so broad, but more pointed. The flower is longer in the tube and recurves its petals more, but in other respects it is about the same size. It is a few days later coming into flower, and is not more floriferous than *L. longiflorum*. Though the two



FRUIT FORCING.

CUCUMBERS—The beginning of August and again at the end of that month are good times to make a sowing of Cucumber seed for raising plants to afford a supply of fruit in winter. We have tried almost every kind, but have found none to excel a true stock of Rollisson's Telegraph, possessing, as it does, a good hardy constitution, and producing an abundance of handsome and useful-sized fruit. The seed may be sown singly in 3-inch pots in light soil, and plunged in a frame where there is a little bottom heat. Shift the plants as they require more room at the roots into larger pots until they are planted out, not allowing them to become badly pot-bound. Put small sticks to the plants when sufficiently grown to require supports, and secure with matting, leaving plenty of room in the ligatures for the swelling of the stems. Syringe the plants twice a day, and close from 3 to 4 P.M.; but the time of putting on and taking off air must be regulated by the weather and the circumstances of each particular house as to aspect, construction, and other conditions. The chief thing is to secure a sturdy plant, with its growth thoroughly solidified by plenty of light and the needful ventilation. It is useless to expect a full supply of fruit in winter from plants that are drawn and have flabby foliage, but vigorous healthy plants will give good produce whether grown in pots, boxes, or in beds with hot water or other means of affording bottom heat. Attend to the usual thinning, stopping, and regulating the growths of plants in bearing, encouraging a clean growth, avoiding overcrowding and overcropping. All fruits fit for table should be cut forthwith, and not be allowed to hang

varieties are very similar, both are worth a place in any garden, but when wanted in quantity the last named should be grown on account of its cheapness. *L. Harrisii* requires exactly the same treatment as *L. longiflorum*.

Lilium lancifolium.—The varieties of this useful Lily are well worth growing in quantity for conservatory decoration from July until very late in the season. For flowering early the plants must be grown indoors and receive special treatment, for their natural flowering time is late in the season. By very slight forcing the first season and greenhouse treatment the second they will flower afterwards naturally during the month indicated. Those growing outside should now be divided into two or three batches. One batch should be placed in the greenhouse, another in a sunny position, and a third in a northern aspect, which will insure a good succession. Frequently this variety may be seen when grown outside with its lower foliage turning yellow; and very often the plants cannot be used for decoration on account of their unsightly appearance. In the majority of instances this may be traced to injudicious watering, for it is unnatural for the foliage to turn prematurely yellow. If plants in this condition are examined the soil will be found too wet and the lower roots decaying. If this state of things is allowed to exist the bulbs will decrease in size and eventually die.

Lilium auratum.—After flowering this handsome variety must be tended with great care; it must never be allowed to suffer through an insufficient supply of water, and must never be overwatered, or the roots will rot. Watering should be so conducted that the roots remain fresh and working as long as possible, and even when the flower stems have died down they should be plunged in frames to save watering them and to prevent the soil becoming dry. Plants that have rooted well from the base of the bulbs will, if treated as described after flowering, have a mass of active roots before top growth is visible.

THE BEE-KEEPER.

FRAME HIVES.

THE golden rule of bee-keeping is, Keep all your stocks strong; but this is too often forgotten, and bee-keepers, old and young alike, are apt to have more stocks than they can properly manage, and it cannot be too strongly insisted upon that one or two hives full of bees will be more profitable than the same amount of bees in five or six stocks. The two chief commercial products of bees are swarms and honey, and whichever of these two we find more profitable, we shall have to constantly bear in mind the golden rule; and it is one of the great advantages of the frame system that with a little care we can take advantage of the fact that the frames are interchangeable. Whether or not the standard frame is adopted, every bee-keeper will have a standard frame, for unless his bars fit any of his hives he will not be able to get the full advantage of the frame system.

For instance, he may want to increase his stocks or sell some of them. In the fixed system all he could do was to get a swarm either naturally or artificially, and then feed the bees for ten days or a fortnight till they had filled the hive with comb. As the process of comb-building is very exhaustive, and as no young bees would be hatched to supply the place of those which had died for three weeks at least, unless the swarm was an early one and the honey glut in his district occurred after this three weeks, he would get little or no super honey. In the frame system a different plan is followed. We get a swarm as before, but instead of allowing them to start fresh and be without any brood hatching for three weeks, we give them one or more bars of brood from those hives which can best spare them, and so the swarm is practically a stock.

The stocks from which the brood is taken, having been supplied with whole sheets of foundation, soon make good their temporary check, and this deprivation also helps to prevent them swarming. Again, we need not take so many bees away from the parent stock if we supply the swarm with brood; and a 4-lb. swarm with two bars of sealed brood would be superior to a 6-lb. swarm without any brood. On May 30th we made an artificial swarm which weighed 3½ lbs. and gave them one bar of sealed brood and three bars filled with foundation, and the bees were confined to these four bars and carefully fed. As the foundation was worked out the outside frame was put in the centre of the brood nest,

and another bar with foundation put close to the division board, and so on till all the ten bars were worked out and filled with brood, and on July 6th a crate of sections was put on. Just at the time blossom was coming out, which in this part of Surrey is, together with the Sweet Chestnut, our chief honey harvest.

If we could have spared two more bars of brood doubtless the hive would be even stronger than it is at present, but as the sections are being rapidly worked out there is not much reason to complain.

But the tocsin of warning has been sounded, and the woeful experience of Mr. Woodbury having infected the whole of his apiary with foul brood brought forward against this system. It was the abuse and not the use of this system that caused the ruin of his apiary, and he must have been very much left to himself when he made this mistake. If a bee-keeper does not know whether he has foul brood in any of his hives, and then calmly goes and puts bars from an infected hive into his healthy hives, he has only himself to thank for his mistake, though having so sinned ourselves we are tolerant of others having done the same.

Some years ago, very much against our better judgment, we were persuaded to take two bars out of a very strong healthy hive, put them into a nucleus, and take them to a bee show. In the evening the bars were returned and the queen caged for a day; but the brood had got chilled, foul brood ensued and in a very virulent form, and despite all remedies—salicylic acid, menthol, &c., the bees gradually died. Moral—Save me from my friends.—A SURREYSHIRE BEE KEEPER.

BUYING SURPLUS BEES FOR THE HEATHER—A WORD FOR SKEPS AND EXTRACTED HONEY.

"A LANARKSHIRE BEE-KEEPER," in the issue for July 9th, favourably criticises my scheme of buying surplus bees from the south after the end of their harvest, on purpose to increase my own at the moors, and takes a slight exception to the mode of packing, &c.

When I said in 8 lb. lots in "light" packages, I did not mean small packages; the person who will put them up and send them has sent me many swarms before and knows what he is about, and says that ventilation has not so much to do with success as plenty of room. Still I hold that if two sides of the package is cheese or wire-cloth a smaller one would do as well. The idea of your correspondent to put pieces of board in the box is a valuable one; at the same time, I think pieces of cheese-cloth tacked from side to side and left a clear 2 inches from top and bottom would be better and lighter.

Each package should be made for at least 8 lbs. of bees for two reasons—first, if the stock of bees have been working in supers there will be this quantity, and it would be highly inconvenient to divide them on two stands they had been working on; secondly, as the expenses of transit must be kept down by using large boxes, a greater internal capacity can be had from the same weight of timber. Perhaps the most convenient box to use is what a hundredweight of Tate's cube sugar is put up in, with bottom and lid replaced either with cheese or wire-cloth, with cloth tacked across 4 inches apart. Thus prepared, 12 lbs. of bees will travel safely in it during the hottest weather. The cloth top and bottom should be the sides in travelling.

If only one or two packages are to be sent, the passenger train would be the best means of transit. If this is decided on all the packages should be fastened together, or each one will be booked separately, with a minimum charge on it; but if many are to be sent, 1 lb. or so of candy should be run in the four corners of the box and sent by goods train. The charges by goods train will average 2s. per cwt., while by passenger the charge will be about 14s. The only drawback to "goods" is they are a little longer on the road.

The question of migrating bees has occupied much attention both in this country and America, and I have paid considerable attention to it. Bee-keepers over ten miles from the Heather cannot make much profit on ten or less stocks, while it is impossible for those at a great distance to attempt it owing to the numerous difficulties; but by selling bees from an early to a late district at a price to be mutually agreed on, and the buyer to make what profit he can out of them, makes the plan simple and feasible. If the buyer used the same sized frames as the seller the price might be returned in sealed store combs of Heather honey for wintering; but this I cannot advise, on the one hand because it might spread disease, on the other I should prefer to have all honey stored in supers, when it would command a better price, and only get sufficient honey in the brood combs to winter the reduced number of bees. I mention this because the idea will be sure to suggest itself to many.

I am pleased that your correspondent has given the same or similar idea in the pages of your valuable Journal which I had not seen. I am also pleased to see him speak a good word for the despised skep. Some

prominent members of the British Bee-keepers' Association say they would burn every one in the country. I would not simply give it a place in the apiary, but I would place it first. I do not prefer the large Pettigrew skep nor those little Pagden ones, but one which will throw a 4-lb. swarm. Here is a nut for the "advanced" bee-keepers to crack. Take two stocks in the autumn in equal conditions as regards food (18 lbs. of honey) and bees, one in a skep under a shed or covered with a baffle, and the other in the most improved double-walled-cork-dust-packed hive. The skep will throw a swarm in the spring, and if hived on half sheets of foundation will yield a crop of surplus honey, and itself throw a swarm before the other stock is ready to swarm; thus we have a skep stock extra containing a young queen which will do the same year after year. The problem now is, not how much honey can be got from any one stock regardless of cost, but rather how much profit, and to do this stocks must be kept and wintered in skeps and the swarms put in frame hives, and then during the last harvest united together or sold off to bee-keepers in the Heather districts, extract the honey from the frames, and preserve them ready for the swarms the following summer. A word here about extracted honey. "A. L. B. K." says hood combs spoil the flavour of extracted honey; perhaps so to some palates, though I have not been able to detect any difference, but should not this enhance the value of super honey, which should also be superior to good cheap wholesome extracted honey?—A HALLAMSHIRE BEE-KEEPER.

BEES STINGING WHEN REMOVING SUPERS.

"BASIL" wishes information how to prevent being stung when manipulating bees. There are many things to be observed which the bee-keeper ought to be cognisant of before he can expect to be successful in avoiding being stung when manipulating. The first thing of great importance is not to irritate the bees so that they will attack innocent people and children or animals of any kind. By paying particular attention to this the operator will in a great measure escape, but by donning the bee armour, thereby protecting himself, many others might be severely stung through his rash manipulation.

The nature of bees under all circumstances should be studied, so that the bee-keeper may know by a glance at their movements and sound of the bees the temper they are in, then he will know how to proceed. These things can only be learned by experience, but there are certain rules which must be observed. First, Bees do not sting readily when their honey sacs are full, hence they may be manipulated with safety when the income of honey is great. Second, Empty honey sacs and cold weather have the opposite effect. Third, Be steady in all movements; a very little jar or nervous twitch will send the bees in your face in a second, while a heavy rap or firm shake will keep them quiet. Fourth, Have no loose cloth, such as baggy sleeves, this irritates the bees. Veils when used should be free from this. The most perfect one I have used is the German mask, sold by Messrs. G. Neighbour & Sons. It keeps firm and steady, unlike most others, which are part wire and part cloth. The mask should be lined to suit the head and keep it cool. A good operator on bees generally is most successful without any armour, having his shirt-sleeves rolled up, because, as I have stated, bees dislike loose cloth about the person. I have my vests made with light sleeves buttoning close at the wrists, then a pair of glazed lining cuffs, mounted with elastic at both ends, which keeps all close, the hose drawn over trouser-legs, and the pockets guarded. A pair of indiarubber gloves, sold by the aforesaid firm, is as good armour; but gloves prevent successful manipulation, and bees lose their stings in them, irritating others. Fifth, Never leave a hive once begun until finished, and never two at the same time. Sixth, Always work from behind the hive, and never uncover the whole of the super or crown of the hive at once. Seventh, Never allow any scent about the person, or act so as to irritate the bees. Remember they are the flying bees that attack, so be careful not to cause them to take wing. Seventh, The introduction of foreign varieties make manipulation not only difficult but dangerous, so that many tempers of the kinds have to be studied. My experience with Syrians will be given soon, which seem very partial to having their own way, and dangerous bees if mismanaged. Carniolians, on the other hand, are not only great honey gatherers, but the pure race can be handled with safety under very ill-treatment; while these bees exist timid bee-keepers need not be afraid to keep them. Eighth, Sprinkling bees well with diluted honey or tepid water will quiet them, but this is not required when they are getting honey, and is liable to cause fighting when there is none.

I have just been removing some supers without getting a single sting, and unveiled. It is the first really warm day we have had in July. I removed all wrappings, these being many, perhaps six times more than most people use, that and clean supers being the chief causes of pure and well-filled combs. There is as yet no escape of bees, because I cover all supers with a piece of white calico before removing it, and pass a cord between the top of the hive and super to sever, if any, the comb attached to top of hive; but this is so rare when the hives are wrought as I have advised, that as a rule they may be lifted off without this precaution. For regularity and finish of comb I cannot conceive why people will employ separators in their supers. When the cord has been passed through (my combs are smeared a little with crude carbolic acid of the full strength) I turn up the calico, exposing one opening only, insert a sheet, then repeat till all are done. Whether the weather is cold or warm by the time the papers are withdrawn the super is emptied of bees and ready for lifting. An empty super is at hand to take the place of the one removed, and covered until either filled or the bees have settled and retreated down, when all should be removed and covered for winter.

Frames should be operated in a similar fashion. Should the bees by any unavoidable cause become irritated smear the entrance with carbolic acid, and frequent them often, so that they may be reconciled. Never leave a hive unsupervised or serious consequences will follow. If my suggestions fail close the hive entirely and drum on it for some time. They will fill their sacs and become docile. Let all manipulations be done quickly, and never expose a hive long. By attending to these hints and studying the natures of the different sorts of bees success is certain.

Useful hints weekly lose much of their value owing to our variable climate. It is far better to read and note carefully the general directions given in this Journal, the mother of all others; then, as the season comes round, the greatest tyro cannot fail to know what to do. I will not fail to give useful hints weekly or monthly, but just as I make up my mind to do something to or for my bees the weather changes, and I have to change my plans. Useful hints given regularly and acted upon in that fashion would in all likelihood lead beginners into a difficulty. Answers to correspondents would, I think, do more good and be more satisfactory. Here are several hints that no one will be misled by—viz., to those who find moths an enemy. Set traps about the hive. Match boxes filled with some comb will attract the moths; eggs will be laid in them, which can be destroyed at will. Drone comb in the centre of the hive causes the queen to be deposed sometimes in spring, and is a serious drawback to have many drones coming forward at a time when worker bees are most needed. Remove all such surplus drone comb and have the space filled with worker comb at once. Wherever the combs are black, remove these and insert foundation and get white comb made. Bees are healthier and breed better in new combs than in old ones. All hives not yet provided with a young queen should have one without delay. Be sure that all hives are well provided for, sufficient to last them till May, covering carefully now, and molest them no more until the spring, when the floors require cleaning. Where the solid floor is in use a ventilating one should take its place.

I used to keep the front of my hives clear of all vegetation. Neglect has allowed the Arabis to cover close up to some. It is a capital door mat for bees, always of a warmish and rough nature; the bees can rest on and rise easily from it. Those hives intended for the Heather, if heavy, should have the weightiest combs removed and filled with brood combs from other hives (intended for that purpose) put in their place. Surplus bees should be joined so as to form strong stocks. Thorough ventilation should be provided.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Propagating Echeverias (C. T. H.).—Both these plants and Pachyphytons, also Kleinias, are readily increased from leaves. The larger of these should be taken off quite close to the stem, and left an hour or two for the wounds to dry, then inserted as lightly as possible in a layer of sand spread over free well-drained soil in pots and boxes. It is well to water this before inserting the leaves, then, when the surface has dried somewhat but still damp, press the base of each in the sand, but very slightly, standing the pots or boxes on a shelf in a greenhouse. In dull weather no water will be needed, but it must be given occasionally in hot dry weather. There is greater danger, however, in over than in under watering, and after giving water you may sprinkle on some dry sand. If rightly managed a bud will form near the base of each leaf, which will develop into a plant. In dull weather, and where the house is slightly damp, we have seen hundreds of young plants raised by resting the ends of the leaves on the soil, and in no case must they be inserted deeply, or they will decay. You had better try both methods, and with care in watering you will succeed in your object. The present is the time for the work.

Supporting Tuberous Begonias (C. D.).—We are glad to learn our advice has proved so satisfactory; but credit rests with yourself for carrying out our instructions intelligently, as exactly the same information has been given to others, who have failed in their object. The main point now the pots are filled with roots is never to let the soil get dry before water is given, and liquid manure, of the colour of ale, will give all the support that is needed. It may be made from cow dung or sheep dung mixed and given at once; or of soot, a portion being tied up in a piece of canvas, and

immersed in a vessel of water till the latter is coloured as indicated. Twice or thrice a week will probably be often enough to give liquid manure. Syringe amongst the pots frequently in hot weather, and keep the base on which they stand moist.

Bertolonia Van Houttei (*Constant Reader*).—The beautiful ornamental-foliaged plant requires to be grown in a case or under a glass shade in a shaded position in a warm stove to bring out its glistening colours. Shade, heat, and moisture are the chief requirements. It grows freely in a compost of fibry peat, leaf mould, and sand, but will not grow freely in the sun or a dry atmosphere. Caladiums also require heat and moisture, with shade from bright sun, the strong growers luxuriating in a rough compost of loam, decayed manure, and crushed charcoal, the pretty little *C. argyrites* preferring an admixture of peat. No stove plants are more easy to grow than Caladiums, but they must have plenty of moisture at the roots and a moist genial atmosphere.

Ammonia for Vines (*F. J.*).—Time after time it has been stated in "Work for the Week," in articles, and in answers in this column, that ammonia can be beneficially applied to Vines in the form of strong guano water sprinkled in the house and placed in troughs on the pipes. We are most willing to advise you at all times, but have often observed you apply for information that has been given a few weeks before, and consequently a few weeks too late for your deriving full benefit from the replies that we can give on a subject. Mix one or two ounces of guano in a gallon of water, and make every available plant of the house wet with it every evening when you close the sashes. You cannot very well use too much of this in hot weather until the Grapes colour, but open the lights an inch or two at the top before nightfall, and the front lights also on sultry nights, and leave them open, giving more air very early in the morning in advance of the rising temperature—that is to prevent the heat rushing up suddenly, then having to throw open the ventilators to reduce it. This latter practice, which is much too common, is the cause of many failures. The night temperature you name is quite 5° higher than is recommended in the Journal; in fact 10°, and we fear you do not read attentively. If the thermometer registers 65° the first thing in the morning the house will be quite warm enough, but there must always be a free circulation of air. Shallow vessels may still be kept filled with water in hot weather, but the ammonia applications had better cease when the Grapes are fairly colouring and before they are ripe. As has frequently been stated, this should commence when the berries are about stoning.

Budding Briars (*J. B.*).—If you cut the strong shoots clean away you will check the flow of sap so seriously that you will probably entirely fail in your object. We should not shorten the growths at all, but simply remove the soil from the stems, give a good watering, insert the buds at once, bind with matting or worsted, and cover any roots that may be exposed with soil, but not the inserted buds. It is very important that the shoots from which the buds are taken be kept moist, as if the leaves wither and the bark shrinks even slightly the buds will not grow, and they should be inserted as quickly as possible when taken from the stems. We should not shorten the shoots after the insertion of the buds—at least, not until they are pruned in winter. By shortening the growths after the buds are established they are often made to push just before winter and be killed. They are better in a dormant state till spring, and are then sure to push strongly, and most of them produce fine blooms. The more growths the stocks make this summer the greater is the root-action for supporting the Roses next year. Beauty of Hebron Potato is ready for taking up when the leaves turn yellow.

Vinery for Market Purposes (*W.*).—The best description of house is a span-roof about 20 feet in width, either with or without glass sides. The latter is the cheapest, but we prefer the houses with about 2 feet 6 inches of brickwork, and 3 feet of glass at the sides. The wall admits of slope for shutter or other covering of the outside borders, which is necessary when late Grapes or early-forced ones are grown, and the side lights admit of ventilation. The pitch of roof we should have at an angle of about 65°, or calculating for half the width, 7 feet 6 inches being the height of the ridge above the eaves, so that with the sides as above indicated the house will be 13 feet in the centre from the floor line to the ridge. The rafters we should have 7 inches by 3 inches, and the sash-bars 3 inches by 1½ inch, two sash-bars between each rafter, fixed so as to take squares about 13 inches wide. You will need lights 2 inches thick on both sides of the ridge about 2 feet wide, and opening the full length by lever movement, and similar means of ventilation on both sides. The glass should be 21 oz. thirds. You will need iron tie-rods to every alternate rafter. If you want plainer houses, read what will be published about Mr. Ladd's in an early issue. They are both lower and flatter than that above described. The pitch of a house may with advantage be greater in dull northerly districts than in the south, and you do not state from whence you write. The house recommended is for late Grapes mainly, or those that have to hang a considerable time after ripening.

Mushroom Culture (*Cryptogami*).—Sphagnum can be procured of most nurserymen; but it is of no use for mixing with straw to make a Mushroom bed. As you cannot procure droppings in other than small quantities, they should, as collected, be placed in a shed or other place secure from wet, spreading out thinly, and turning over occasionally so as to keep it from becoming stale. When you have collected sufficient droppings throw all together into a heap, mixing the fresh with the old, and when it has become warm form into a bed. You could not do better than procure "Mushrooms for the Million," which gives minute directions for growing Mushrooms under a great variety of circumstances. It may be had from our office for 1s. 2d. post free.

Figs Falling Off (*J. F. L.*).—The cause of the Figs falling is undoubtedly owing to the immaturity of the wood, which may be due to the roots running riot in the border, which keeps up growth until a late period, and the wood consequently does not ripen to the point. The shoots also may be crowded, so as not to admit light and air, hence wood is not solidified as made, as is evidenced by the growth, which is long-jointed. We should confine the roots to the pots, giving them a shift into larger in autumn, or it may be done now, draining well, and using good loam with a sixth of old mortar rubbish intermixed. Pot hard, the harder the better, then cut or tie down the shoots, stopping the side growths, keeping them rather thin so as to

admit air to the interior, and well exposed to the light. Feeding is best done on the surface with a mulch of turf and well-rotted manure, with liquid manure as necessary. If the trees are much rooted from the pots the roots should be cut through gradually so as not to give a too severe check. The crop also appears heavy. The fruit sent is unfertilised. The variety appears to be the White Ischia.

Address (*J. F.*).—Messrs. Hooper & Co., Florists, Central Avenue, Covent Garden, London, W.C.

Vines Unhealthy (*H. C.*).—Your Vines are in a deplorable state, but we see no evidence of the presence of the phylloxera. They shall be further examined and a fuller reply given in a future issue.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. R.*).—1, *Gnaphalium uliginosum*; 2, *Gnaphalium luteo-album*; 3, *Filago spathulata*; 4, *Erigeron acre*; 5, *Centaurea montana alba*; 6, *Sisymbrium pannonicum*. (*Mater*).—Our conditions, which are regularly published, stipulate for six plants only at one time, and we cannot undertake to name more; also, Ferns sent for naming should have spores on the fronds. 5, *Begonia metallica*; 8, *Lonicera aurea reticulata*; 9, *Euonymus radicans*; 10, *Campanula*; specimen insufficient; if rather tall-growing it is *C. grandis*. 11, *Tanacetum vulgare* (*Tansy*); 13, *Aconitum versicolor*. (*Bob*).—3, *Blechnum spicatum*; 4, *Asplenium trichomanes*; 5, *Asplenium Adiantum nigrum*; 7, *Polypodium Phegopteris*; 9, *Polystichum angulare*; 12, *Cystopteris fragilis*. (*W. P.*).—*Acropera concolor*. (*C. H. Stephens*).—1, *Physalis Alkekengi*; 2, *Hemerocallis fulva*; 3, *Phacelia tanacetifolia*; 4, *Liadelophia spectabilis*; 5, *Aconitum paniculatum*; 6, *Argemone sulphurea*.

A Straw Skep as Super (*Reader*).—By putting a skep on the top of the stock you have simply supered it, and if it has not swarmed in your absence the super should be filled with pure comb and honey, which should be removed by passing a cord between it and hive, then drive out the bees in the usual manner, rapping gently when driving, as the combs will be soft. The under hive, if of sufficient weight, may be arranged for winter. If not heavy enough syrup should be given next month to bring it up to a proper weight, which ought to be from 30 to 40 lbs., exclusive of hive and board. If the hive has its original queen it would give more satisfaction next year. If she was deposed and a young one joined, or as it is early in the season, a young one raised in hive now would be certain to mate; but as queens are often lost when on the wedding tour, a nucleus should be formed by driving a few bees on the tenth day into a small box or hive, and insert beside them a piece of comb containing a queen cell. This would give an extra queen in case of casualty, or if not required, could be fed up and kept over till spring, when she could be easily disposed of.

COVENT GARDEN MARKET.—JULY 29TH.

THERE is no alteration from last week.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	0 0 to 0 0	Lemons	case 15	0 to 21 0
Cherries	½ sieve	4 0 10 0	Oranges	100	8 0 12 0
Cobs, Kent	per 100 lbs.	0 0 0 0	Peaches	per doz.	1 6 8 0
Currants, Red ..	½ sieve	3 6 4 0	Pears, kitchen ..	dozen	0 0 0 0
" Black	½ sieve	4 0 4 6	" dessert	dozen	0 0 0 0
Figs	dozen	2 0 4 0	Pine Apples English ..	lb.	2 0 3 0
Gooseberries ..	½ sieve	1 6 2 0	Strawberries ..	lb.	0 3 0 9
Grapes	lb.	1 0 2 6	St. Michael Pines ..	each	3 0 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 2 0
Asparagus	bundle	2 0 5 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Oignons	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 6
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 8
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Heros	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 5
Leeks	bunch	0 3 0 4	Turnips	bunch	0 6 0 0



THE CLERGYMAN'S FARM.

(Continued from page 80.)

For intrinsic value and general utility Oats may be regarded as even more important than Wheat upon the clergyman's farm. As whole or bruised corn it is indispensable

for horses, cattle, and sheep, and we have no other cereal equal to it for such purposes. Then, too, as oatmeal for pigs and poultry it is of almost equal value, and a full supply of this corn can always be home-grown, which is a point to be remembered. Before all things let a farm be self-supporting, and let its produce be turned to the best account for the wants of the household and farmyard. Insist upon a fair, or rather sufficient, proportion of land being devoted to Oat culture. Do not pay much heed to talk about four-course shifts, or to the popular fallacy that Oats, or indeed any farm crops, may not be grown two years in succession upon the same piece of land; but do take care to learn exactly how to cultivate the land, especially as regards the right use of manures upon it, and then you may go on year after year sowing Oats, Wheat, or Barley upon the same land—aye, and expect full crops too. In proof of the soundness of our teaching we might adduce many an instance, but it may suffice to say that the Winter Oats now being harvested is the third crop of Oats in succession from the same piece of land, and it is by far the finest of the three. We have found Maize occasionally being used as a substitute for Oats; but apart from our decided objection to the purchase of corn for home consumption, we know that one hundred parts each of Oats and oatmeal contain a larger per-centage of the most important nourishing constituents—albuminoides, carbohydrates, and fats—than equal quantities of Maize and Maize meal, and in Oat straw we have a nutritive article of food for sheep and cattle.

An average or ordinary crop of Oats yields forty-five bushels per acre; under high culture it is so much more as to afford a valuable lesson upon the profit of high farming. No better illustration of the condition of land can be had than from a crop of Oats. Straw and corn ripe for harvest may be seen at heights ranging from 6 inches up to 6 feet, according to the condition of the soil in which it was grown. In making a calculation when the land is allotted into due proportions for the various crops, it is well to take the yield of an ordinary crop for our base, and, at any rate, to make sure that our system of culture will afford equal if not superior results. In doing this we have to consider to what our requirements for a year amount. The size and age of animals must all be taken into account, and a fair margin allowed for any extraordinary demand which may arise. There need be no feeling of anxiety about any surplus, for good Oats are always a marketable commodity, first-class home-grown Oats often selling for 10s. per quarter more than inferior foreign samples. Grey Winter Oats should be sown in September or October, and Black Tartarians as early in spring as the condition of the soil admits of. For soil of light or medium quality preference is given to Winter Oats, for the important reasons that they are what may be termed a safe crop, the germination of the seed being quick and certain in the warm moist soil, the strong early growth affording a valuable supply of green food for sheep in spring, and the corn being ripe for harvest during the present month. In the culture of Spring Oats there is much more uncertainty. We cannot always have the soil in good tilth for early sowing, and when the soil is late there is risk of having small light corn and short straw, and the harvest is much later than that of the Winter Oats. Especial care is taken to have corn and straw well ripened before it is taken to the rick to avoid all risk of musty straw, which is certainly unpalatable for the cattle to eat. It is for this reason that we have ceased to bind up Oats into sheaves, and we find it answer much best to mow them into swathes, which, if the crop be a heavy one, may require turning once, and then to collect and cart them loosely to the rick. A heavy crop of Oats cut and bound into sheaves is frequently carted with so much unripe straw in the middle of each sheaf so as to cause violent heating and subsequent mildew in the rick; or if the weather proves very wet between the reaping and carting the sheaves may become so wet that the bonds must be unfastened and the sheaves opened to be dried by sun and wind.

It is not our intention to give exhaustive details of culture in these articles, but rather to furnish practical hints to prompt and assist in the formation of plans which may be brought to maturity by Michaelmas, when the farming year ends and the work of another year of ploughing, sowing, reaping, and harvesting again begins. Oats have been given a prominent position for the reasons mentioned, and that timely attention may be given to the preparation of the seed bed. We have a field of twelve acres which has been a bare fallow this year against our wish; but we could not well prevent it, for when the farm was taken in hand some three months ago we found thirty acres of bare fallow upon it. All that was possible has been done to remedy this bad practice, and we have managed to have eighteen acres cleaned of foul weeds and sown—a small portion with roots, and the remainder with White Mustard to be ploughed in. The bare twelve acres is being ploughed for the fourth time, and we have decided that it shall be sown with Winter Oats, for which an autumn and spring dressing of home-mixed artificial manures will be used.

WORK ON THE HOME FARM.

On two poor farms we have a second growth of Red Clover that in neither instance will be sufficiently strong for mowing. About sixty old ewes drafted from the breeding flock have been sent to one of these farms to be folded upon the Clover, the folds to be so small as to ensure a prompt clearance of the Clover, and a tolerably rich dressing of manure, to which a pound of oilcake a day to each sheep will contribute materially. The folds will be so managed that ploughing may follow closely. A similar number of old ewes will be purchased for a similar purpose upon the other farm. It was our original intention to purchase some more lambs for folding, but upon consideration, and bearing in mind the poverty of the soil, we decided to give preference to old sheep, and shall be content if when they are all sold we are able to clear expenses, looking for our profit in the soil. Our 400 home-bred lambs have since the weaning been divided into two flocks and sent to two outlying farms. All the best ewe lambs will eventually go into the breeding flock, and the remainder will be sold in spring as fat hoggets. Mixed crushed corn at the rate of half a pound a head daily should be given these lambs, but as we cannot spare it them, they are having the same quantity of Waterloo cake, which from the mixture of wholesome nutritive food contained in it is admirably adapted for lambs. It is our intention to put all the ewe lambs to the tup in November, and in view of this they are now having cake with the other lambs, so as to render them as strong and forward in growth as possible by that time. The lambs were all dipped soon after the weaning, and the ewes have now also been dipped. We always wait about a month or six weeks after the shearing before dipping to allow time for any wounds caused by careless clipping to heal. All sheep suffering from foot rot have been separated from the others, and till the dipping was done especial watch was kept against attacks of fly. Water is taken daily to any of the sheep having no pond or stream in the pasture, for it is a cruel thing to keep them without water in hot sultry weather. Do not forget our advice to fold sheep upon new permanent pastures. For the first two years sheep should never be suffered to roam at will upon them, or many of the grasses will suffer either from being eaten too closely or being let run to seed. Pass sheep over the pasture in folds only two or three times, according to the growth, giving them corn or cake each time, and the grass will be eaten fairly and be well manured at the same time.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain
1885. July.	Baromet- er at 32 nd and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min	In sun.	On grass.		
Sunday	19	29.876	64.5	60.3	S.E.	63.0	72.2	59.8	112.6	58.1	0.138
Monday	20	29.879	65.8	61.7	W.	62.8	73.5	60.3	121.2	58.8	—
Tuesday	21	30.297	61.9	59.7	N.E.	62.7	72.7	58.4	102.2	52.9	—
Wednesday ..	22	30.447	67.1	58.3	S.E.	62.7	76.3	54.9	115.2	49.2	—
Thursday	23	30.375	63.2	56.7	N.E.	63.2	78.2	48.7	119.4	40.5	—
Friday	24	30.307	63.8	57.8	E.	63.5	79.7	49.4	120.4	41.9	—
Saturday	25	30.334	69.7	60.7	N.	64.2	88.0	51.3	121.6	45.1	—
		30.216	65.1	59.3		63.2	77.2	54.7	116.1	49.5	0.138

REMARKS.

19th.—Cloudy; heavy showers in afternoon.

20th.—Fine, but not bright.

21st.—Cloudy morning; fine afternoon, with a little sunshine.

22nd.—Beautifully fine.

23rd.—Fine summer day.

24th.—Fine bright morning, and nearly cloudless day.

25th.—Fine and hot, but slightly hazy.

A week of fine summer weather. Rain much below the average, the total for the past six weeks being only 1 inch.—G. J. SYMONS.



COMING EVENTS

6	TH	
7	F	
8	S	
9	SUN	TENTH SUNDAY AFTER TRINITY.
10	M	
11	TU	Royal Horticultural Society (Plants and Flowers).
12	W	

CHEAP AND EFFECTIVE BORDER FLOWERS.

IT is not generally known that annual Candytuft in a small state will pass the winter safely under the shelter of a wall, or even in open borders if the weather does not prove too severe. Plants raised from seed sown now and again towards the end of August will prove most useful for cutting and general garden decoration early in the season and before border plants in flower are plentiful. Plants sown in early spring form a capital succession to those raised from seed sown at the time advised. Those that stand the winter often have their foliage browned, but as soon as the weather is favourable they start freely into growth and branch wonderfully, forming heads of bloom in many instances 2 feet across on stems varying from 6 to 9 inches high. The hybrid forms of Candytuft, which are generally sown in spring and looked upon as tender annuals, are among the most beautiful border plants that can be grown for flowering early in the season. This year our plants were coming into flower just as the late-flowering Narcissi were over and in full beauty with the Pyrethrums. Many who saw them were surprised, and could scarcely believe that it was the result of seed sown late in summer, but thought them some new hardy variety.

The treatment is very simple. The seed should be sown outside in small beds in an open position, as well as a quantity scattered about in the borders, where the seedlings can be thinned out and left to take their chance. Those sown in beds as soon as large enough should be pricked out singly 3 or 4 inches apart in a sheltered position, where they can remain for the winter. It is well to let them attain a good size before planting in their winter quarters, as the lifting checks them and assists in promoting firm woody growth. The soil in which they are transplanted should be made moderately firm, and in the spring remove with a trowel, preserving all the roots possible, to the position in which they are desired to flower. Those that pass the winter safely in the open borders will come first into flower. If the weather prove severe and kill them the cost of seed and labour is so trifling that it is scarcely worth naming, but if they live they abundantly repay for the trouble they have given. To insure their safety during the winter it is a good plan to place a board 8 or 10 inches deep round the portion of ground on which they are planted, with a few thin laths nailed across, so that mats can be thrown over them during sharp frosts. Young plants have passed the two last winters safely in open borders without the slightest protection.

Seed of the various colours of Intermediate, East Lothian, and Brompton Stocks should be sown in shallow drills on a border without delay, and plants will be raised that will render beds and borders sweet and attractive from the middle or end of May, according to the season, to the end of the present month; in fact, the East Lothian varieties will flower more or less the whole of the season. Some plants that were very small in spring made a most vigorous

growth after they were transplanted, and are now a complete mass of bloom, and will continue flowering until the approach of frost. The treatment for winter is simple. As soon as the plants are large enough to be handled they are pricked out 5 inches apart, where they will be sheltered from north winds and where snow will not fall on them off the roofs of houses or buildings. They are protected during very sharp weather with mats, boards being placed round them the same as advised for Candytuft. Care is taken when first transplanting to place them where the ground will not be wanted for any other purpose in early spring. It should be made firm, but not rich, the object being to induce slow growth, so that the plants will be sturdy, in which condition they pass the winter much better than if rapid growth is encouraged in the autumn. Towards the end of March every alternate row is carefully lifted with a trowel during showery weather, and every other plant from the rows remaining, thus leaving those upon the ground exactly 10 inches apart, the others being planted in enriched soil. The plants left will come first into flower, and consist of Intermediate varieties, the whole of the other sorts being transplanted. Those left upon the unmanured border are liberally supplied with liquid manure during the spring. All who have not grown Stocks for yielding a bountiful supply of fragrant flowers for cutting early in the season will not be disappointed by giving them a trial if the simple directions given are followed.

If the seed of Antirrhinums is sown in spring, even in heat, and the seedlings pricked into pans or boxes and planted out as soon as large enough, they will not flower freely before the end of August, and often later. This is very well for an autumn supply, and is a system we generally practise. But to have plants flowering during the month of June they must either be raised from cuttings inserted at once or from seed sown either in a box or outside. If sown outside it may be scattered on the surface of fine soil and merely raked in, no other covering being necessary, well watered and shaded with a mat until germination takes place. When large enough, a number of the plants should be inserted in open beds and borders where they are intended to flower. The majority will probably survive the winter and commence rapid growth in early spring, forming good-sized bushes before plants raised in spring are ready for planting out.

In case those fail in exposed positions a number should be planted at the foot of walls, where they will be slightly sheltered from severe frost and cutting winds, the latter generally doing more harm than frost. Since such good varieties can be raised from seed it is scarcely worth while troubling to raise plants by means of cuttings, except in the case of any good white or other distinct colour that may be required for a special purpose. Unfortunately, it generally happens that plants which flower freely, and especially moderately early in the season, do not produce good cuttings before the middle of September, and these are too late for early flowering. Cuttings taken at that season are subjected to cool frame treatment during winter, the same as Calceolarias, Pentstemons, and other similar plants. Cuttings inserted now receive the same treatment as seedlings after they are once well rooted.

Sweet Williams (*Dianthus barbatus*) are generally sown in spring, grown through the summer for flowering the following season, and by this system strong plants can be produced. The only objection to sowing in spring is the labour in pricking out the seedlings at a busy season of the year when various other things require immediate attention. It therefore not unfrequently happens that such plants are often left in the seed bed for a long time after they ought to have been transplanted, and when crippled by crowding they rarely develop satisfactorily afterwards. If seed is sown now the young plants can be pricked out about 4 inches apart as soon as they are large enough, and being perfectly hardy there is no fear of their not passing the winter safely.

By sowing now the labour necessary is done during autumn instead of the spring, and by placing the plants sufficiently far apart at first they have room to develop without crowding until a favourable opportunity presents itself for transplanting them to quarters in which they are to flower. They can be pricked closer together if room is an object, and every other plant removed in spring. The plants we raised were so treated, a portion early in the season being transplanted amongst shrubs, and they are now from 6 to 9 inches over, some more, while the bed they occupied is fully furnished for removal in early autumn into mixed beds and borders.

The varieties of *Dianthus chinensis* should also be sown now. The various forms of the Heddewigi section are remarkable for the diversity and brilliancy of their colours, and are most useful for cutting as well as decoration in beds and borders. These if sown in spring will flower the same season, but are later than the plants raised from seed sown at the present time. These should be treated the same as Sweet Williams, only they do not require so much room when they are pricked out from the seed bed. Though not quite hardy they will stand ordinary winters safely, and being so beautiful they are well worth trying. Cuttings should now be taken from these, and any other forms of *Dianthus* that it is necessary to preserve by this means. They root quickly if dibbled into sandy soil in a shady place, covered with a handlight, and kept close until they are rooted. These can be planted out afterwards, and treated the same as seedlings. They must be protected in some way from the ravages of slugs. Some of the choice forms of *Dianthus* are wintered in small pots in a cold frame, and planted out in spring.

Gaillardias are very showy border plants, but when sown in spring even in heat they are late before they commence flowering. Cuttings of the brilliant *G. grandiflora* should be rooted at once the same as recommended for *Dianthus*, potting them afterwards and wintering them in a cold frame. Seed may also be sown now, and when the plants are large enough potted singly and treated the same as those raised by cuttings. Planted outside early in spring Gaillardias commence flowering early in the season, and if in good soil they continue until cut off by frost. *G. picta Lorenziana* sown in the spring does not flower before August, but sown in autumn, wintered in small pots, and shifted in spring, they rapidly attain a flowering size. It is a quick grower, and produces its flowers, which are admirably adapted for cutting, most freely in succession until cut off by severe frost. This variety is more difficult to winter than *grandiflora*, as it appears liable to damp off. Attention is needed to prevent this, but it can be accomplished by keeping the plants moderately dry and ventilating the frame judiciously. It is, however, worth a place on the greenhouse shelf, or the shelf of any cool house where plenty of air can be given.

Enothera Lamarekiana should also be sown at the present time, for, although of no service for cutting, good groups in the garden are highly effective. In moderately good soil the plants attain a height of 6 or 7 feet, and branch abundantly. A dozen or more plants in a group planted about 18 inches or 2 feet apart at the front of tall shrubs are very effective from the end of July until the close of the season. When sown in spring some of the plants will flower, but not all; but even those that do flower will not be nearly so fine as those raised from seed sown now. The seed being fine it should be sown on the surface without being covered, merely being kept moist until germination takes place. It should be sown thinly, so that the plants can remain on the seed-bed until spring before they are planted in their flowering quarters.

Foxgloves are amongst the most beautiful of biennials that can be grown for the same purpose, and to have strong plants capable of throwing spikes 7 or 8 feet high seed should be sown at once. Flowering plants for the following year will be produced from seed sown in spring, but they do not attain such a large size as if sown the previous season. Good strains with beautifully spotted flowers can now be

obtained, and groups of them are most telling in garden decoration. This year we have the vacant ground in a large clump of young Hollies planted with them, and the majority are 7 feet high, many of them more, and they have been greatly admired by all who have seen them.—W. BARDNEY.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 62.)

THUS far we have hurriedly glanced at the early history of the Chrysanthemum in England and France, and now a new era was destined to be opened.

Leaving for a while the French, in order to keep as far as we are able the dates running consecutively, we will see what was being done in another part of the world.

The year 1836 was a momentous one for the Chrysanthemum, for in addition to Captain Bernet's new proceeding and the commencement of Mons. Lebois' labours an amateur in Jersey turned his attention to the raising of seedlings, and it was from this time that a marked improvement in the varieties took place. This amateur was so extraordinarily fortunate in his culture that he raised upwards of five hundred seedlings, which he sold to Mr. Chandler of the Vauxhall Nursery, a good number of which were tolerably well known twenty years ago.

According to a correspondent of Mr. Burbidge the raiser of the first seedling Chrysanthemums in the Channel Islands was a baker, who had trained his plants to a wall behind his oven. This may perhaps be the same person alluded to above, although no names are mentioned in either case. Other growers were not long in following, some of whom, such as Clark, Davis, Pethers, Smith, and Wolsey, raised a large proportion of our still well-known incurved, reflexed, and large Anemone varieties, while in later years Mr. Downton and Major Carey have also contributed some very favourite sorts.

It may be observed that in Mr. Salter's catalogue out of those varieties to which he has appended the raiser's name more than half appear to be of Jersey or Guernsey origin, and it is difficult to reconcile that fact with a statement made by one of Mr. Salter's contemporaries that he was chiefly dependent on Italian seed for the many new varieties it was his good fortune to send into the market. Be that as it may, and having due regard to the statements of Captain Bernet, Mons. Lebois, and Mr. Burbidge's correspondent, who gives some interesting facts connected with the early raisers in the Channel Islands, there seems to be ample evidence in favour of a distinct assertion to the contrary, and that the greater part of the varieties distributed by Mr. Salter which were not of his own raising were really the products of the French and Channel Island growers.

There is no doubt that Mr. Salter knew far more of the doings of the foreign growers than anyone else in his day, and though he acknowledges having dealings with the French and other growers, and says he was personally acquainted with many of them named already in this work, not a word is mentioned by him on the subject of Italian seed or Italian growers, and certainly at this date no one can point to a single variety of the Chrysanthemum of Italian origin grown in this country. His work "*The Chrysanthemum; its History and Culture*," published just twenty years ago, is, notwithstanding its age, a book that should be on the shelves of every lover of this plant. No treatise on our delightful autumn favourite would be complete without some reference to it, and the author must also acknowledge his indebtedness to that authority for much that has hitherto been placed before the reader. In this work we learn that, finding the climate of France more suitable for the purpose of raising seedling Chrysanthemums, Mr. Salter went to Versailles in 1838 for the purpose of establishing a nursery to enable him to accomplish his desire. He imported from England most of the Jersey and Norfolk seedlings, to which collection he added 250 of the best French sorts, so that in 1840 the number of varieties he had in cultivation amounted to between 300 and 400. On looking over the list for that year he says it did not appear that there were more than thirty varieties with incurved petals or florets, and that nearly all of these were obtained since 1830.

As he gives a plate copied from the "*Botanical Magazine*" of the first variety which bloomed in this country (the old Purple), it seems that up to that time the varieties were all of the same style of loose, open, ragged-petalled flowers as Messrs. Colvill's variety; and, while referring to Mr. Haworth's classification, which was drawn up in 1834, comprising the fifty-three varieties then known and divided into the following six sections—viz., the *Ranunculus* form reflexed petals, the *Ranunculus* form fringed petals, the *Anemone* form with yellow disc, the *Marigold* form and size, the tasselled form with narrow petals and pendant blooms, the quilled form—he says that the variety then most highly esteemed with incurved petals was probably unknown, and that to that classification might also be added

four other sections—viz., the incurved form with broad petals, the Pompon-Ranunculus form, the Pompon-Anemone form, and the Matricaroides or Feverfew form and size.

Since then, however, owing to the advent of the Japanese and Japanese Anemones it is felt that some further system of classification should be adopted, and several suggestions have been made to effectuate it.

Five years after he was established in France Mr. Salter raised his first seedlings in the nursery at Versailles, a place called by Voltaire "l'abîme des dépenses," with which one can scarcely imagine Mr. Salter agreed as far as he was concerned. In 1844 he sent out Annie Salter (still cultivated by growers of the reflexed section), Madame Poggi, and Queen of the Yellows. In 1846 Cyclops, Fleur de Marie, the Anemone variety, and Nancy de Sermet. In 1847 Queen of England followed, so that this leading incurved exhibition favourite will shortly be forty years old.

About this time another new chapter in the history of the Chrysanthemum opened. In the early part of this work an account has already been given of the introduction of the *C. indicum*, the type of what is now called the Pompon, and that it was growing in this country as long ago as 1764, only to have vanished entirely. There were sixty years afterwards other new comers of the same species, notably the double yellow and double white Indian Chrysanthemums, both introduced by Mr. Parks, which soon shared a similar fate, the most important reason for this being in all probability the insignificant size of their blossoms compared with the Chinese varieties accompanying them. It is excusable perhaps to lay some little stress on this, as many growers seem to be of the opinion that the large-flowering varieties were first known in this country in 1764, whereas it was the small-flowering species that first appeared among us, then it was lost and followed by the Chinese Chrysanthemum a quarter of a century later on.

Upon the conclusion of the war with China in 1842 peace was signed at Nankin, and it was stipulated in the treaty that Canton, Amoy, Foochoo-foa, Ningpo, and Shanghai were to be thrown open to the British, that Hong-Kong was to be permanently retained by us, whilst the Island of Chusan was to be held as a guarantee that the provisions of the treaty were observed by the Chinese. The Horticultural Society of London taking advantage of this, and believing that there was a wide field of botanical research open to them in those districts, despatched Mr. Robert Fortune, then the Superintendent of the hothouse department in the Society's Garden, to China in the spring of 1843 for the purpose of collecting rare or unknown plants. On his return in 1846, after an absence of three years and a quarter, and having visited all the places above mentioned, he brought home with other horticultural curiosities two small-flowering varieties known as the Chusan Daisy and Chinese Minimum. These were according to Mr. Salter similar in size to those called Liliputians, and were probably varieties from the true *C. indicum* of Linnæus, and it is a rather strange coincidence that the first variety, or Miller's *Matricaria indica*, should have come from Ningpo, which, although on the mainland, is but forty miles from Chusan. These two small-flowering varieties, he says, were at once introduced into the Versailles Nursery soon to become favourites with the French. Chinese Minimum was a dark double flower, and produced but little seed, while the other with its Daisy-like semi-double flowers seeded freely the first year, the seedlings being more double than the original, and from their compactness and resemblance to a rosette received the name of Pompon.

Mr. Fortune and Mr. Salter both say, and presumably with the greatest exactitude, that from these two varieties all the Pompoms now in cultivation have sprung. But there seems to be some doubt, or more accurately speaking a distinctly opposite assertion made by one of the principal Pompon growers in France, upon which the author can make no comment, beyond a reproduction of the statement that it is contradictory to what in England has always been generally accepted as the fact.

Before doing so it may be pointed out that Mr. Burbidge tells us that the Chusan Daisy was propagated by the Horticultural Society, and distributed among its members, and from some of these members it was sent to the enthusiastic Chrysanthemum grower Mons. Lebois, and that he having seeded it raised a great many good varieties, which got into Mr. Salter's hands. Now, Mons. Lebois, in his admirable little work published many years ago, gives an account entirely different, and it will be best to allow him to tell it in his own language. He says:—"One more word on my seedlings of 1847. I cannot omit an incident that opened a new era in the history of my favourite plant. Having sown as usual only seeds of large-flowering Chrysanthemums, one of my seedling plants produced a Pompon flower, a hybrid of the most graceful effect, which I called Circe. The same year Messrs. Bonamy Brothers sent to Mons. Pepin of the Jardin des Plantes a few specimens analogous to my Circe, but their flowers, rather smaller, were not quite double. I therefore from 1847 was

allowed to hope to be the means of introducing to the horticultural world a race of entirely new Chrysanthemums greatly desired by lovers of that flower."

There is a Pompon of the name of Circe in Mr. Burbidge's list, but no description or raiser's name follows it, and if Mons. Lebois' statement is unimpeachable it will naturally raise a point as to whether all the Pompoms, and especially those of French origin, are descended from the two varieties Mr. Fortune introduced, a question that must be elucidated and decided by an abler and better authority than the writer of this work.

It is a pity Mons. Lebois' work bears no date, but it seems likely that it was published somewhere about the year 1853. He makes no reference to Mr. Fortune, nor to his having received plants of the Pompon from members of the Horticultural Society, and his statement is given simply for what the reader may think it is worth.

Many of us have been of the opinion that the summer and early-blooming varieties are new to the Chrysanthemum grower, but such is by no means the case. Up to the year 1850 many lovers of this flower had expressed their regret at the inability of the raisers, who had almost conquered every difficulty connected with the Chrysanthemum, to obtain varieties which should bloom in the summer and early autumn months, and at the same period great hopes were indulged in that the Chinese and Pompon varieties should be the means of maintaining a brilliant and effective display of colour in the gardens. Mr. Salter and Dr. Denny both ardently longed for a consummation of this idea, and the beds at the nursery in William Street, Hammer-smith, where the former having returned from France a year or two before had established himself, and where he carried on his business, were always planted with numerous Chrysanthemums, but his efforts, owing to our unpropitious climate, were of little avail.

This desire had been for years past agitating the minds of the French, and Mons. Pelée raised a few early-blooming kinds, some of which were mentioned in the "Gardeners' Magazine of Botany," and others are still known to us, such as *Cromatella* and *Delphine Caboche*. In addition to Mons. Pelée there were others who strove to produce varieties of this description, among them being Mons. Lebois, who had vainly sowed and sowed without obtaining anything to reward him that flowered before the 15th October. In his efforts to succeed he exposed plants in the broad open sunshine, trained them to an espalier facing the south, cultivated them under glass, and even in a stove-house, but still he could only bow before the inflexible will of the plant, which always failed to bloom earlier than the date just given.

At length by the kindness of Mons. P. Coindre, Director of the Jardin des Plantes at Avignon, a town in which the endeavours of the early Chrysanthemum growers were eminently successful, he received from that gentleman two seedlings which were in full bloom as early as the month of August. From these two plants he obtained about two hundred seeds, which being sowed in the month of February, 1853, gave rise to nine very double distinct coloured new sorts; and so much was he interested in his success in raising new varieties of the summer-blooming kinds that for a time he quite neglected his old collection. After his decease Madame Lebois, his widow, continued to raise and send out varieties of this sort, a few of which are still in cultivation.

More recently Mons. Bouchardat, Mons. Pertuzes, and Mons. Lacroix have raised varieties of this rapidly increasing section that gives every promise of becoming as much appreciated as the later-blooming class. Mons. Delaux has also contributed many varieties. This year, in announcing a set of five Japanese summer-blooming Chrysanthemums—viz, *Fleur d'Été*, *Été Fleuri*, *Mandarin*, *Roi des Précoces*, and *Bouquet Estival*, the result of fifteen years' labour, he tells us they will create a sensation in the horticultural world, and no doubt looks upon them as one of his greatest triumphs.—C. HARMAN PAYNE.

(To be continued.)

NOTES ON ROSES.

JUDGING from all I have seen and heard 1885 will be considered a first-rate Rose year. The best blooms in certain districts were some weeks later in coming to perfection than has been the case in some seasons, but the quality generally has been over the average. Plants have been remarkably free from blight, and although the early summer winds rather injured the tops of the first buds, no trace of this could be seen at the time the plants were in full bloom. Rose shows have been interesting and good. The first of the year I saw was at Cardiff on July 1st. This was an excellent show, and many of the blooms were not surpassed on any subsequent occasion. Not many gardeners will be able to speak of what they saw at the Crystal Palace Show on July 4th. A capital report of it might have been read by buying the Journal for 3d., but the Show itself could not be seen under

7s. 6d., and I would think seriously about disowning any friend of mine who was foolish enough to pay such an absurd sum to see a Crystal Palace Rose show, more especially when a much more interesting one could be seen a few days later for 1s. I am now referring to the Show of the National Rose Society, which was held at South Kensington on July 7th. This was a magnificent show, and worthy of the most careful inspection; indeed such a superb show and liberality towards the public deserved universal support.

I am going to be disloyal enough to say I do not think much of Her Majesty as shown by Mr. Bennett. It is neither compact nor well formed, and much too large to be generally valued as a decorative Rose, and is not fragrant. I would describe it as an immense Baroness Rothschild. Mrs. John Laing is to my mind a much better Rose. It is light pink in colour, of fine form, great substance, and very fragrant. I felt thoroughly disappointed with A. K. Williams, the blooms being small, as a rule, and not well formed. Marie Baumann did not get more than it deserved when it was awarded a medal as being the best H.P. This is really a first-rate all-round Rose, and stands the test of time as well as any of them. Its pleasing colour and fine form are always attractive.

Were I growing Roses to supply any of the best London florists with good and effective cut blooms, I would grow Merveille de Lyon by the thousand. To my mind it is the finest white Rose in existence. In size and purity it is superb, and its fragrance adds another point to its numerous qualities. The position the blooms occupied did not show them off to advantage at the National, but for all that there was hardly any possibility of getting near to where they were. Amongst the scores, indeed I might say hundreds of blooms shown, I did not notice a really inferior one, and the general uniformity of all argued well for the constancy of this Rose.

Lady Mary Fitzwilliam is certainly a massive Rose, but for many forms of decoration its size is against it. It is the largest of all Teas, if this is its class. Ulrich Brunner is a capital Rose as seen in the stands, as its colour, a cerise red, is so very decided. Tea Comtesse de Nadaillac was very attractive. Its colour is a bright rose on yellow ground, large and globular. David Pradel was out of the common, being of a peculiar lavender colour and very pretty. Other varieties I noted as being of special merit were Duke of Albany, Alphonse Soupert, Crimson Bedder, Souvenir d'Elise, Marie Rady, Constantin Tretiakoff, Anna Ollivier, Innocente Pirola, Madame Welch, Gloire de Vitry, La France, Madame H. Jamain, Magna Charta, Xavier Olibo, Horace Vernet, and Caroline Kuster.

All who love to see Rose culture extended should thank the Rose Society for offering two such magnificent trophies for competition. It is not every day or every year that one finds a prize valued sixty guineas offered for garden produce, and no wonder they produce keen competition. I never saw Rose blooms at any show remain so fresh as did those at the National. Probably the free way in which the conservatory was ventilated may account for this. The Rev. W. H. Jackson, who won the Veitch Memorial medal for twenty-four distinct blooms in the extra classes, is evidently a keen Rose grower. I was suggesting to him that he should take Canon Hole's place in writing on Roses for the Journal, and I hope he will do it, as I am sure he could tell us much which would be of great value to cultivators generally. I understood Mr. Laxton to say that it was Mr. Jackson's son who was the Rose-grower, and I took the liberty of informing the rev. gentleman that I thought his son must be a very good hand at the work, when the medallist quietly informed me that he was a "bachelor." Ah! Mr. Laxton.

The early part of July was a thorough Rose time in London. I saw tens of thousands of blooms used in table and room decoration in West End mansions. They were numerous displayed in all the florists' shops. Ladies' heads and dresses were adorned with them, gentlemen's buttonholes contained many choice buds, and men, women, and boys sold them about the streets at a wonderfully cheap rate. Their beautiful colour, fine form, and delicious fragrance were delightful in all cases, and it is in no way surprising that the Rose should be regarded as the queen of flowers, or that its cultivation should be so rapidly extending. Until lately I had no idea that Roses figured so largely in London floral decorations. One firm alone, Messrs. Nieman & Cornish of Orchard Street, Portman Square, were using from 5000 to 7000 blooms daily so long as they could get them, and the effect they produced when placed on dinner tables or ballrooms was charming in the extreme. They buy their blooms from Messrs. Paul, Cant, Turner, or others of the large Rose growers, and I saw thousands of such kinds as Baroness Rothschild, Général Jacqueminot, Baron Adolphe de Rothschild, and Charles Lefebvre as fine as any at the Exhibition. No inferior blooms

are used, and many colours are not introduced, scarlet and white or scarlet and pink being preferred. Many who go through nurseries wonder where all the Roses which they see growing can go, but when one sees how very extensively they are employed, and how fashionable they are, it is easily enough understood why stocks are being increased and so many grown. The *Journal of Horticulture* has always been noted for the attention it devotes to Roses, and if practical notes on the subject bulks largely in it until another harvest comes, I am sure they will be valued and read with interest by old and young growers of Roses.—J. MUIR, *Margam Park, South Wales.*

DODECATHEON SPLENDIDUM.

THE American Cowslips, or Shooting Stars as they are called in the west, have within the last few years increased wonderfully both in numbers, size, and beauty, and indeed may now be classed amongst the



Fig. 18.—*Dodecatheon splendendum*.

most desirable late spring and early summer plants we grow for outdoor decorative purposes. As found in gardens at the present time the nomenclature may be said to be a little confusing, although perhaps not more so than is generally the case with plants that are everywhere appreciated. Dr. Gray and Mr. Sereno Watson, we believe, are agreed in considering them all varieties of *D. Meadia*, and class them accordingly, but many of the forms we know in gardens are so abundantly distinct from that species and the names already sufficiently complicated that we rather incline to the old regimen, and speak about them as we and everybody else have long known them. *D. Meadia* is a very old garden plant, being among the first dozen plants figured in the "*Botanical Magazine*;" it is well worthy a place among the rest. It grows generally about 1 foot in height, carrying an umbel of from six to twenty or more flowers, rosy purple with a

bright red crown. The leaves are mostly lanceolate and more or less toothed. *D. integrifolium* is amongst the prettiest; its flowers are 1 inch long, of a rich purplish crimson, having an orange crown. It does well on the rockery. *D. brevifolium*, *frigidum*, *alpinum*, *latilobum*, *lancifolium*, *Jaffrayi*, and *macrocarpum* are all desirable plants.

D. splendiam, illustrated in the accompanying cut, is to our thinking the most beautiful of all the American Cowslips. It forms a pretty little rosette of oval leaves, from the centre of which rise many flower stalks 8 or 10 inches high, each carrying about a dozen extremely handsome rich purplish crimson flowers with bright orange crowns, and larger than those of *integrifolium*.

All those enumerated above may be cultivated with ease in any garden if provided with the necessary shade and shelter. We are of opinion that position has much more to do with the successful cultivation of these truly handsome flowers than the given mixtures of sand, peat, and loam. Positions where *Soldanellas* and our native *Primroses* thrive will be found suitable for the *Dodecatheons*, partly though not absolute shade, and a light and well drained soil.

They ripen seed pretty freely, by which means they may be increased, or else by parting the root, but as this is rather a dangerous mode it had better not be resorted to unless in extremes.

The variety represented was procured from Mr. Ware, and was certificated at the Floral Committee of the Royal Horticultural Society a short time ago.

A DAY IN KENT.

ENTERPRISE EXTRAORDINARY.

A DRIVE through the fruit-growing district of Kent when the Strawberry and Raspberry crops are being gathered is particularly interesting. The configuration of the "Garden of England" is boldly undulated, and there is consequently a great deal of uphill and down in traversing it. This enables the crops to be seen from various points to better advantage, the sloping fields and regiments of "pickers" being conveniently arranged for a passing inspection.

For miles there is little but fruit, and, it must be added, weeds to be seen. Now and then we pass a piece of Wheat, and one of Oats was observed in a twenty-five-miles drive; but instead of fields of corn and Turnips, as in agricultural districts, there are vast stretches of Raspberries, Currants, and Strawberries, and in one particular piece there could not have been less than from 200 to 300 persons, old and young, gathering the crops. By the hedgesides are wooden shanties for their accommodation, and round wigwags of old oilcloth or sacking, somewhat resembling the Zulu kraals as they are illustrated, only not so good. In this way the pickers, many of them from the east end of London, lead a gipsy's life for some weeks, the little urchins, too young to labour, turning "cartwheels," or standing wrong end upwards in the dusty roads shouting for coppers.

Much has been done, no doubt, during recent years in improving the land in Kent and converting useless wastes into fertile tracts; but a great deal more remains to be accomplished before the district through which we passed can rightly claim the appellation of "garden." Granting the excellence of culture in many fields, others were ablaze with Poppies, and weeds of various kinds were struggling with each other for supremacy; and as for the fences, they are wildly picturesque, no doubt, by alternate masses of Brambles, "gaps," and festoons of the Traveller's Joy, but with a few exceptions they are anything but suitable boundary lines for a "garden." "Enterprise" is visible enough in places, but neglect is still obtrusive, and much land is waiting to be tilled. The fruit crops appeared good, especially Apples and Raspberries. Strawberries were practically over, and Gooseberries and Currants could not be very well inspected in rushing through the lanes with a gardener handling the ribbons, and his passenger holding on as if preparing for a spill.

"But where are we going?" "I think," said the jehu, "we will go to Bexley Heath and see Phillip Ladd's place." "But do you know him? can we get in?" "Well, I have seen him, and I know the foreman, and we shall be all right. If we see Mr. Ladd's I am sure he will not object to us; but it would never do for him to be pestered by a lot of cockney tourists, who do not know what they are looking at in such a place, and can hardly let the flowers alone." After that little dialogue on we went. A drive out of the lanes into a broad and excellent highway flanked by pretty villas brings into view long ridges of glass. "Ah! here we are. We will turn down the lane and drive right into the place." In truth there appeared nothing to keep us out of it, neither walls nor doors nor gates, and we drove in.

It was clearly an advantage to "know the foreman;" and a genial man Mr. Bailey is, and without doubt able, for only a man of ability could keep things "square" in such a charge. We were fortunate, too, in being introduced to the proprietor, and it were impossible for anyone to accord to strangers a more courteous, frank, and agreeable reception. He made us at home at once, and in five minutes it seemed as if we had been friends for years. "We are not afraid of anyone seeing us and everything we have" was his remark, "but we cannot be bothered by everybody, or the work would never get done." A perfectly reasonable

observation. Mr. Ladd is evidently too strong to have any "little secrets," but is alike ready to give or to receive information. He is not the tearing, driving, bustling man that many imagine. Such men are apt to make mistakes. He is calm and reflective, yet quick to act when he sees his way. It is very certain that he has not erred very seriously in building up his business. He started in as small a way as ever a humble worker did, and now his trade is of a magnitude that has won for himself an European fame, and his name will have a prominent place in the history of horticulture.

There was very little glass at Bexley Heath twenty years ago, and now there is a village of it—a hundred houses, and not little ones. The majority are upwards of 200 feet long, the *Gardenia* house being 300 feet in length and 35 feet wide. The plants are in large pots—luxuriant bushes that yield hundreds of thousands of flowers. Several of these great houses are filled with Tea-scented *Roses*, neither young nor small, but clean and healthy. These are trees rather than plants, in large pots, and the yield of blooms must be enormous of such varieties as *Niphetos*, *Isabella Sprunt*, and *Safrano*. They are repotted, or the food-store replenished, as soon after the present time as possible, but regard is had to the main object of having blooms all the year, and all the plants are not overhauled at once. House after house is filled with *Bouvardias*, "all for cutting;" and a few acres of glass cover *Zonal Pelargoniums*, mainly for affording cut flowers in winter; but they must be had at all times, and there was a sea of flowers. In reply to a query, "What sorts do you grow?" The answer was, "We try many, but taking all things into consideration we have no scarlet equal to *Vesuvius*, no pink equal to *Master Christine*, and certainly no white equal to *Queen of the Whites*." "Queen of the Whites!" we repeated, "is that what Veitch's are sending out?" "The very same, and it is the best of all; look at it; compare it with the others; it is the best truss, has the purest flowers, and, another thing, it does not shake—no gumming wanted; see"—and off comes some snowball-like trusses that are knocked over the hand, and the petals remain intact—"that is the *Geranium* for market and for me." So said Mr. Ladd, and we could only reply "It seems the one for everybody." But the "sight" in the flower department is the *Tuberose* and *Stephanotis* house—10,000 *Tuberoses* in flower in 5-inch pots, a forest of splendid spikes and flowers, and as many clusters of *Stephanotis* on the roof nestling amid luxuriant leaves. "How are the plants kept so fresh, so clean?" Answer, "Water, liquid." Yes, water and liquid manure work wonders when freely, yet judiciously, applied.

A little fruit remains to be noticed. The *Tomatoes* may be passed, as only two or three tons are grown there, and a ton of *Tomatoes* is, comparatively speaking, a trifle with Mr. Ladd, who counts his tons by scores; but the *Grapes* cannot be passed. Fancy span-roofed houses about 20 feet wide and 200 to 300 feet long laden with *Grapes* from eave to apex, the bunches almost touching each other. Stand at the door, stoop down, and look at the mass of fruit, it is then a question if the reality is comprehended. The spectacle is astonishing. The varieties are *Gros Colman*, *Alicante*, *Lady Downe's*, and *Muscats*. But "Lady Downe's don't do," says the owner, "and what is the use fighting with it? Others can grow it, and they may. I grow what suits the place." It is by taking this common-sense view of things that has made Mr. Ladd what he is to-day. The others "suit the place," or the place suits them. Something has been heard of the *Muscats* house at Longleat. Admitting all that has been said about it, the late gardener at Longleat, Mr. Taylor, and the present one, Mr. Pratt—and it would not be easy to find two better growers and judges—will, if they can visit Bexley Heath, acknowledge the crop there to be good. They will see such a magnificent mass of *Muscats* as they have never seen excelled. They have grown larger bunches and equally good berries, but they should still see the weight of the crop and quality of the fruit at Bexley as grown for the London market, and they would recognise the skill of the cultivator. The roots of the *Vines* are inside. One of the houses was perfumed with guano, in another a bag of nitrate of soda was being reduced, and water is laid on everywhere. Perhaps these have something to do with the crops. The establishment under notice has grown by degrees to its present magnitude. It is very plain. There is no ornamentation about it, but it is just a great feeder of the mighty maw of London—a striking example of what can be accomplished by sound judgment, attention, and perseverance; but after all it is only part of the business of Mr. Ladd.

We drive on to Dartford Heath, about four miles distant. This is a new place. Twenty low span-roofed houses, about 150 feet long each, are completed in one block, and fifteen in another. Three *vineries* 300 feet long are arranged side by side. They are divided by pillars, so as it is really one great house with a ridge-and-furrow roof covering an acre of ground. The *Vines* are still young growing freely, the house in the meantime being occupied with *Tomatoes* planted about 2 feet apart in rows 3 feet asunder secured to stakes. The smaller houses are similarly planted with *Tomatoes*, *Peaches* in addition covering the roofs of some of them. About 500 trees have been planted as a little experiment, and as these are promising very well indeed, and have afforded 10,000 *Peaches* this year, it is not unlikely the 500 trees may increase to 5,000; no one knows, for Mr. Ladd is apt to exceed in his acts the anticipations of most people. The *Tomatoes* were flowering freely, the houses being kept quite dry till the fruit is set, then water is given to push on the swelling. The soil is light and gravelly, but manure and deep trenching work wonders. Thirty tons of *Tomatoes* were sold last year from this small place, which is in charge of Mr. Cheesman, whose heart is in his work, or he would not do it so well.

Three miles distant from Dartford Heath is Swanley, a better cultivated district than we have hitherto traversed. Swanley is already a

familiar name to readers of horticultural literature all over the civilised world, for is not the "Home of Flowers" there? Mr. Cannell has worked wonders, and a sincere hope may be expressed that he will live long to enjoy the fruits of his labour and enterprise. But what can be said of the "Home of Fruit?" Considering that three or four years ago the site was a poor and practically barren field that nobody would look at, it is positively astounding. As an example of trade enterprise Mr. Ladd's establishment has no parallel in its way, and it is not too much to assume that no other man living could have done what he has accomplished in the time. Three years ago a bed of gravel covered with Thistles and other weeds; now not less than sixty-five admirably finished span-roofed structures 240 feet long, and not only finished, but occupied, the roofs of five houses covered with Grapes, or the crops cut, and some more with splendid rods, others planted with Maréchal Niel and Gloire de Dijon Roses, and the whole block having as a boundary a span-roofed vinery 686 long, and 25 feet wide without a division. The Vines, Gros Colman, are growing freely, and the borders are occupied with Tomatoes in fruit—a forest of them. Two thousand pounds of fruit had been sent off on the day of our visit, and a telegram arrived as we did at 2.30 for 2000 lbs. more by the three o'clock train, and the active foreman, Mr. Field, I think, sent it off. That is the way to do business. About 70,000 Tomato plants are fruiting or will fruit this year at Swanley, and the crop will not be less than 80 tons; and altogether Mr. Ladd will market at least 100 tons of Tomatoes this year, probably many more, and very soon he will have as many tons of Grapes. How does he sell such quantities? There is only one reply, By sending the best produce into the market in the best condition. This commands a sale, and the inferior hangs on the market, and gives the producers no returns worth noting. Hundreds of tons of fruit are sent to London that the sellers do not know what to do with; it is either badly grown or improperly packed, and then the owners wonder at the market prices they see in the papers. The time has gone by, or is departing, for sending second and third-rate garden produce to town in the hope of making a fortune by its sale.

All the houses are built of pitch pine, painted three times, glazed with 21-oz. glass, 17 by 13 inch squares well embedded in putty, but no top putty used. The hot-water pipes are jointed with cement and well caulked, never fail, split, nor break, but, as is proved at Bexley Heath, last for a generation. The boilers are also composed of similar pipes placed horizontally with their ends connected with terminal water ways. This boiler in its perfected form is termed the Rochford, and is employed because of its simplicity and power.

The roofs of large houses are kept rigid by purlines supported on pillars, the said purlines being 1½-inch iron pipes connected with the water mains. On these pipes are valves at intervals, and by turning them and screwing on the hose, for which provision is made, the houses can be watered with the greatest ease and to any extent desired. This is a first-rate arrangement and worthy of being kept in mind. A slight error has been made in fixing some of these pipe purlines that is worth mentioning. They were fixed rather too near the ends of the houses, and the expansion of the iron by heat has broken the glass. In the completion of the gigantic work so far as it has gone that appears the only little mistake that has been made. With the exception of the three large vineries at Dartford, which are 13 feet or 14 feet high, with side lights, all the others are low, not above 7 feet or 8 feet high, and thus the Grapes can be easily reached for thinning. There are no side lights. The angle of the roofs is about 45°.

The houses are ventilated by about 3 feet square glazed lids at intervals in the roof; in fact, the width of two squares of glass, the rafter being shortened so that the portion removed fits exactly across the space and forms a bar, so that not an inch of wood is wasted. These lids are opened and closed by weights and pulleys, a piece of iron pipe filled with cement making a capital weight. The front ventilators are in the form of lids in the side walls. These lids hang on pivots near the top, and also in the centre of each board, and near the top a piece of iron hangs. It is about 6 inches long and the size of a pencil. When the ventilators are opened—that is, pushed outwards from the inside of the house with a rod for that purpose, this iron naturally falls and rests on what may be termed the floor of the embrasure, and props up the lid securely. In closing the man walks along, knocks away the prop, and the lids fall like the lid of a mousetrap, and all is safe. The plan is the very essence of simplicity and unerring in action. "Opening the front ventilators all at once by turning a handle without going through the houses is all very well," says Mr. Ladd, "but I like a man to go through, as in attending to the ventilators his eye might catch something else that wants attending to, and that otherwise would not be seen." Thus have all the details of forming and working this greatest establishment been thought out. It is not completed yet. Many more houses will be erected with another boundary structure at right angles with the present one, but longer by some 200 feet, so that these two structures alone will exceed a quarter of a mile in length. The rafters of the houses are 3 inches deep and nearly 1½ inch wide, six being cut from a 9-inch deal.

Two thousand frame lights are being made of pitch pine, probably for sheltering Heaths, of which a few thousands are on trial and looking well. In the meantime several lights are employed for sheltering Strawberries for forcing, of which 200,000 are grown in 5-inch pots. A crock is placed in each pot, then half an inch of soot, and the soil is next hammered in by boys. The runners are cut off before rooting, but with rootlets visible, with an inch or two of each below the node. These are inserted quickly and firmly, like putting in cuttings, and not one in a hundred fails to make a good plant. That is the quickest way of all, and is practised all through the early part of the season, only the late runners being pegged into pots

before being detached from the plants. The gardener's method of layering into small pots and shifting into larger is laughed at, as involving a needless waste of time and labour.

It is surprising to see how well Strawberries grow in what resembles a bed of gravel, and the growth of the vines is remarkable by its excellence. Deep trenching and heavy manuring, with free drainage and abundance of water, is the secret of it all. Digging a "spade deep," no matter how much manure were used, would be playing at cultivation in a soil like this. It would simply end in failure in comparison with the magnificent success achieved. The land is trenched from 2 feet to 3 feet deep, according to the subsoil, and from 60 tons to 100 tons of manure are buried in a 240-feet-long house. "Such free open soil as this," observes the owner, "never sours, and I like land that will stand manure." Mr. Ladd, having risen from the ranks, and become a king among cultivators, can show the soundness of his judgment and practice by its fruits. He is still in the prime of life. He is a shrewd, clear-headed, closely observant, and deep-thinking man, quick to act when he sees his way, but until then he does not move; he is, in fact, the very embodiment of the valuable axiom, "First see your way, then go ahead." Some persons go ahead before seeing their way clearly; they are "too fast," hence fail. Others see their way and dare not go ahead; they are too slow or timid, and so miss their chance and lag behind. But how are all the Grapes to be thinned when the Vines in Mr. Ladd's four establishments are in full bearing? If he lives, and all goes well, he will in a few years have a length of five miles of span-roofed vineries in bearing. The thinning will be a formidable task, but it has all been thought out. He can "see his way" to solve the problem, and when the time comes he will "go ahead." The Grapes are sure to be thinned, and if I live I will see his plan in operation, and report the further progress in this extraordinary enterprise. The worst of it is, Phillip Ladd's great work makes me, at least, feel small, and if I express my feelings in a signature it must be—
A SLOW-COACH.

DEATH OF MR. JAMES CUTBUSH.

It is with great regret that we have to announce the death of Mr. James Cutbush, which took place early on Sunday morning, August 2nd. The deceased gentleman, who was well known as the head of the firm of W. Cutbush & Son, Highgate, was universally respected, and the news of his death will be heard with sorrow and surprise by numbers of friends who had seen him apparently in his usual health but a short time previously. Though Mr. Cutbush's health has not recently given his friends serious cause for alarm, yet he had, we hear, felt somewhat unwell for some time past. He conducted his business in the usual way, however, and until a few hours before his death was in his nursery. Subsequently he attended a presentation of prizes by the Baroness Burdett Coutts at a local flower show, and it was while speaking there that he was seized with an apoplectic fit. Medical aid was at once summoned and he was removed to his home. On his arrival there he rallied somewhat, and was able to walk into his house with assistance, but he was afterwards seized with another fit and expired soon after midnight. Mr. James Cutbush was fifty-seven years of age; he was in business at Highgate about thirty-five years, but the firm has been established upwards of 150 years. The business of this firm will be conducted in future by Mr. Herbert Cutbush, eldest son of the deceased, who was absent in Scotland when the sad event occurred. The remains of Mr. James Cutbush will be interred in Highgate Cemetery to-day (Thursday) at three o'clock in the afternoon.



GRAND NATIONAL DAHLIA SHOW.—We are requested to announce that "at a recent meeting of the subscribers to the prize fund for the Show to be held in September next at the Crystal Palace it was decided to offer a prize to be called the Turner Memorial Prize as a memento of the late Mr. Charles Turner of Slough, who laboured so assiduously towards the establishment of these exhibitions. Several subscriptions varying in amount from 2s. 6d. to 21s. have been received for this object. Those who desire to contribute either to this or the general fund are requested to send their subscriptions within the next few days to the Hon. Treasurer, Mr. Thomas Moore, Botanic Gardens, Chelsea, S.W., in order that the conditions of the prize may be settled at the next meeting of the Committee, which will take place shortly." It will be seen that a proposition of wider scope is made in another column by Mr. J. Douglas.

— WRITING from Northenden, a correspondent observes:—"Strawberries are not doing well here this year, as through there is an enormous crop the berries are rotting and moulding off in thousands, the result of unfavourable weather. Roses just now are here in their full beauty, so you see what little chance we northerners had of competing at the National Show. No mildew as yet, but green fly galore."

— A WELSH gardener writes :—"GROS COLMAN GRAPE ripens earlier with us on its own roots than when grafted on Foster's Seedling. I think it is rather singular that this should be so, as one would think the early stock of Foster's would produce ripe fruit first, but such is not the case. The two are growing side by side and show the difference very markedly. The berries on the Foster's, however, are much the finer and promise to be much larger than any we have ever had on the Colman root. I consider Foster's Seedling a good stock on which to work almost any kind of Grape."

— PITTOSPORUM TOBIRA. — Mr. A. Young writes :—"In Mr. Balchin's nursery at Cliftonville, Brighton, the above old, beautiful, and highly scented Japanese shrub has lately been flowering most freely in the open air. It has been planted out for several years. Any greenhouse shrub which will succeed in the open air in this country is always regarded with additional interest, and probably the above instance may induce others to give this plant a trial if they have a sheltered position in which to plant it."

— "LANCASTRIAN" writes :—"PHLOX MRS. DOWNIE, white with a crimson eye, is decidedly one of the most beautiful light-flowered early-flowering Phloxes in cultivation. It does not exceed 18 inches in height, and produces large branching heads of bloom for fully half that length and nearly as wide through. This is more especially the case from young plants propagated from cuttings last September. Old plants do not produce quite such large heads of bloom, but a dozen or more flowering shoots from a stool are most striking when in flower either for the herbaceous border or for dotting at the front of shrubs."

— THE same correspondent observes that PENTSTEMON MRS. HEYWOOD, a variety sent out by Mr. Downie of Edinburgh in 1883, is a remarkably fine light variety. The flowers are white, tipped at the back with rose, which gives them a striking and very pleasing shade of colour. It is a remarkably dwarf-growing variety, not more than 14 inches high, free, and a good grower, and one of the most profuse flowerers amongst these plants known. It grows quickly, comes into flower before the majority of varieties, while the flowers individually are large and closely placed upon the spike. It makes a beautiful bed planted by itself, or is very suitable for edging a border or large bed of taller and darker varieties.

— A PRACTICAL gardener writes :—"Mr. W. Bardney, at page 225 and "A Working Gardener," at page 250, called attention to the inadequate arrangements generally provided for CLEANSING BOILERS. Some time since I had an opportunity of inspecting an arrangement of pipes by an eminent firm of hot-water engineers, and they had provided excellently for getting rid of the dirt that is apt to accumulate in the pipes, and that was by the means of a sledge box about 2 feet 6 inches in length and 4 inches square. A cap was fitted in the bottom so as to provide means for cleaning it out. This box was cast on the last length of the return pipe. By this arrangement the dirt fell into the receptacle provided for it without entering the boiler."

— It is stated that the JERUSALEM ARTICHOKE is being extensively cultivated in Belgium, as by a new process of distillation some 8 per cent. of alcohol can be obtained from its tubers. More than 3500 acres of poor, almost waste land, around Antwerp will this year be cropped with the plant. The residue after distillation is nutritious. France is thus also in the way of cultivating large stretches of her poor thin, chalky, and schistose soils with this new crop. Artichokes are now being cultivated alike in Iowa and Arizona as a material for fattening pork. In field culture they are replanted once in two years. An Iowa farmer finds one or two acres sufficient for quite a large herd of hogs.

— A CHESTER correspondent informs us of a rich display of flowers on the premises of Messrs. F. and A. Dickson & Sons on the occasion of the musical festival in the old city, goes on to say, "I found amidst the floral beauties and novelties on show a splendid specimen of VANDA SANDERIANA grown by Arthur Potts, Esq., of Hoole Hall. It is so seldom that one sees this beautiful Orchid that a sight of its glory was as welcome to me as a patch of Ophrys aranifera would be to a British Orchis hunter when in search of something out of the common. The Roses at the Upton Nurseries are still fine at present, and I was informed that Messrs. F. and A. Dickson & Sons allow visitors the privilege of walking through their beautiful grounds on application."

— WE are informed that "PHORMIUM TENAX VARIEGATUM is now flowering in the gardens of J. F. Eltringham, Esq., Westoe, South Shields

It has a spike 10 feet high, with twelve racemes; the colour is attractive, between coral and brown. It is in a 16-inch pot, and has not been potted for four years. It contains an exudation of a sweet and agreeable flavour. Outside some beds have been recently planted with Roses, which were doing very well, considering that they are within a mile of two large chemical factories. The glass structures contained excellent plants, reflecting credit on the gardener, Mr. Chas. Wood."

— A GRAVESEND correspondent writes :—"A REMARKABLE MIGRATION OF APHIDES has been taking place in this and other parts of Kent during the last ten days, which may have come under your notice. In fact, on a visit to London last Thursday I found the insects were passing through several metropolitan districts, indicating that this migration has extended over a broad area of country. So abundant have the insects been on some days that they proved a nuisance to by-passers, entering the eyes, ears, and mouth. This is not one of the two great periods of aphid migration (May and September usually), and I apprehend these swarms have been started by the absence of sap in their food, due to the dry weather."

— LORD NAPIER NECTARINE.—In looking through a friend's garden a few days ago we noticed a tree of this fine Nectarine in grand condition growing against the back wall of a lean-to vinery. The crop was nearly taken at the time of our visit, but a sufficient number of large highly coloured fruits remained on the tree to demonstrate what an excellent variety it is in every respect even when grown under somewhat adverse conditions as regards light. In the same garden we noticed a tree of the same variety growing in a lean-to cool Peach house, and trained to a trellis within as many inches of the glass as the one mentioned above is feet, carrying an immense crop of large and, as might be expected, finely coloured fruit, to swell which the tree, in common with all the trees in the same house, is given a liberal and frequent surface-dressing of Beeson's manure, in addition to copious supplies of liquid manure being applied to the roots at short intervals. Thus by liberal feeding at the roots heavy crops of large fruits are annually secured without in any way enfeebling the trees, as the fine condition of the latter fully testifies.

— FUCHSIA ROSE OF CASTILE AS A WALL PLANT.—Mr. H. W. Ward writes :—"We have a plant of this old favourite free-flowering Fuchsia, which covers a trellis on one of the division walls in our conservatory with a profusion of large flowers, the tube and sepals of which are white, shaded with pink, and the corolla puce. Just now, and indeed for nine months out of the twelve, this plant attracts the attention of all visitors. Early in spring every year—for the plant is an old one—the shoots are thinned out and shortened back a little, the soil at the roots reduced, and the plant repotted in three parts of light sandy loam, and one of horse droppings and leaf mould, with a dash of sharp sand to render the whole somewhat porous. Water is given to the roots after the plant is potted, and the shoots syringed every morning and afternoon during bright weather until the flowers begin to open, when it is discontinued and copious supplies of liquid manure is given to the roots, and all seed-pods are kept persistently picked off so as not to unnecessarily waste the energies of the plant in that direction. A couple of years ago we saw some arches and pillars which were rendered interesting objects in one of the houses (since remodelled) in the gardens of Bagshot Park, the seat of His Royal Highness the Duke of Connaught, by being draped with grandly flowered plants of another old favourite variety of the Rose of Castile type, Venus de Medici."

— FORESTRY.—The Select Committee of the House of Commons appointed on the motion of Sir John Lubbock to inquire into the desirability of establishing a FOREST SCHOOL IN ENGLAND, recently took the evidence of Mr. W. G. Pedder, Revenue Secretary of the India Office, and well acquainted with the forestal system of India. Mr. Pedder stated that a forestal department was authorised in Bombay in 1846. About that time the revenue from the Indian forests was £40,000. Since then it had risen to a gross revenue of nearly £1,000,000, and a net revenue of over £400,000, and that he considered was undoubtedly due to the increased education of forest officials. Instructors were obtained from France and Germany, but latterly chiefly from France, because it was found that the woodlands of England and Scotland were not so well managed as to enable the managers to give instruction. Instruction was now given at the Royal Engineering College at West Hill, where the students, in addition to the engineering course, received training in forestry, botany, forest law, and jurisprudence. The fees were £180 a year, and the course was intended entirely for the upper grades of forest manage-

ment. There was a school in England for the inferior grades. From 1867 to 1885 the competitors for forest service in India were 511, all Englishmen, Scotch, or Irish. The inferior grades were filled by natives. The principal causes of the destruction of forests were trespass, claims for free wood, and forest fires. Protection was made against the latter by forest roads and fire breaks, one of which, in an Indian forest in Scinde, was 174 miles long by 100 yards wide, and by rewards for extinguishing fires. Forests were destroyed by grazing, but it was admitted that in a forestal growth for 150 years pasturage might be allowed for seventy years after the timber had obtained sufficient growth. During the Franco-German war the forestal service of France furnished 5000 volunteers, and he had no doubt there were as many persons employed in forestal service in India as in France. The actual value of the Indian forests had not been ascertained. The denudation of forests in India undoubtedly interfered with the water supply, and to that extent was a potent cause of famine. In answer to Mr. W. H. Gladstone, witness said forestal planting had been very successful in India, especially in mixed forests. Colonel Michael, C.S.I., who assisted in the early establishment of the forestal departments of India, gave evidence on the great value of Indian timber, and especially teak, some of which was worth 6s. per cubic foot. It was used for backing the armour of ironclad ships and targets. He considered a forest school in England would be of immense value, particularly to proprietors of woods, who would then have better trained men than they could get now.

PROPOSED MEMORIAL TO THE LATE MR. CHARLES TURNER.

I MET at the Carnation Show Mr. Glascock of Bishop's Stortford, who told me it was intended to raise funds for the purpose of providing certain prizes at the Grand National Dahlia Show as a memento of the late Mr. Charles Turner. I was too busy to take any notice of it at the time. I now read a paragraph in most of the gardening papers that subscriptions may be sent in to the Hon. Treasurer, Mr. T. Moore. May I be allowed to say—first, that sufficient prizes are already offered to make a first-rate Dahlia show in the schedule already published, and if larger prizes were offered the best blooms would be merely shifted from one class to the other, an arrangement which would make scarcely any difference to the general effect. I wish to say in the second place, that raising a few pounds to provide prizes at one exhibition for Dahlias is an arrangement totally inadequate to provide a memorial for Charles Turner. Now that the idea of a memorial has been started, it must not be a local affair, as this promises to be, but a national one. In order to carry this out I propose that a preliminary meeting be held at South Kensington on the 11th of August, immediately after the various Committees have completed their labours, which will be at 12.30 P.M. The name of Turner is honoured and respected all over the country, and an appeal for funds, backed up by the leading horticulturists of the metropolis, would meet with universal approval and support.—JAS. DOUGLAS, *The Gardens, Great Gearies, Ilford.*

[We fully agree with our correspondent that a prize, or prizes, offered for any particular florists' flower, is inadequate as a memento of a florist who worked so long and successfully over a very wide field, and no doubt the promoters of the prizes referred to by Mr. Douglas will readily join in the consideration of the larger scheme suggested.]

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE PEACH.

IN most collections of our British moths we shall see the insect called the Peach-blossom moth (*Thyatira batis*), a species by no means rare, if somewhat local. It might be hastily concluded by those unfamiliar with this species, that the caterpillar committed damage upon the blossoms of the Peach, but it is innocent of feeding upon anything save the leaves of the Bramble about August or September. If we look at the moth the name explains itself, for on the rich brown wings are arranged four spots of pink and white, resembling the fallen petals of some fruit tree, though not specially suggesting to us the Peach perhaps.

Then there is another moth, set down in many books on gardening as a Peach foe, but which has really given no trouble to the grower in Britain, for the caterpillar is, with us, content to feed on Whitethorn or Blackthorn. So conspicuous were the ravages of this species in some parts of the Continent, however, that the excellent Linnaeus called it the "pest of Pomona," and since his time the caterpillars have been detected in the act of feeding, not only upon the leaves of the Peach and Apricot, but also upon their flowers, and though not belonging to the bulkiest of the caterpillar tribe, their appetites are very voracious. This species has received the English name of the "figure of eight," though it might as well be eighty-eight, for the forewings, which

are of a dull brown, with a pearly gloss, have each two white spots, which might be thought to resemble this numeral, or kidneys. The eggs, which are deposited in September, hatch early, and the caterpillars are adult about June. As they might occur on English Peaches, it should be stated that they are of a peculiar greenish-white colour—that is, unlike the tint of caterpillars we mostly meet with, yellow striped, and dotted with hairy warts; the small head is almost blue, having two black spots. They cling rather tightly to the twigs, so cannot well be removed by shaking their food plants. At the age of maturity they are about $1\frac{1}{2}$ inch long, and spin a cocoon, from which the moth soon after emerges. And in point of fact, although there are several caterpillars that do feed in Britain upon the buds or leaves of the Peach, and inflict a variable amount of injury, the greater mischief that is done to this fruit tree arises from insects of diminutive size, but whose numbers make up for their apparent feebleness. Upon the Peach occur several species of aphids, and the one supposed to be the particular pest of the Peach, and also of the Nectarine, has been named *A. Persicæ*. It is certainly the most conspicuous of all, and frequently causes the leaves to curl and droop. Sometimes, however, the effects of the fungus that has been styled by Bradley *Exoascus deformis*, has been confounded with the work of this aphid, since its mycelium makes the foliage to swell or become mouldy. *Aphis Persicæ* is usually about the first of the aphid tribe to appear. The eggs, which are scattered singly, cannot be detected without great difficulty, but as they are deposited by the autumn brood of winged fly, effective measures for the clearance of these, when noticed on the twigs as the leaves are falling, will lessen the succeeding brood of aphides, and by well cleansing the trees before the spring with one or other of the washes recommended for the general destruction of lurkers most aphid eggs can be disposed of. This

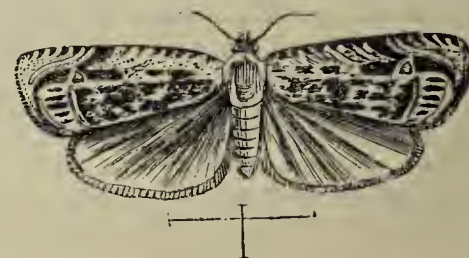


Fig. 19.—*Tortrix Waberiæna*.

species is dull yellow or red, paler while young, with green antennæ; in the winged form brown or even black, but variable, wings large. It may appear as a winged insect early in May, about which time it deposits freely a sweet secretion that clogs up the pores of the leaves. The ground body of one of these, examined by a magnifier, looks as if full of globules of oil. Fortunately it is devoured by several species of insects, and is much visited by a small parasitic fly, a black-bodied Cynips. Of this and other Peach aphides there may be nearly twenty generations during one season.

Both Peach and Apricot afford a food and home to *A. Pruni* in all its stages, but it occurs even more plentifully upon other fruit trees than upon these. Rapid in multiplication like the preceding, it also resembles *A. Persicæ* in its habit of throwing off a clogging liquid, the influence of which, joined with that of the irritation of constant punctures, curls up the leaves, thereby giving an agreeable shelter to the aphid hosts. The young *A. Pruni* are greenish yellow, and very transparent as they increase in size. The eggs can be discerned within the body looking like tiny dots. When winged, this species has the body powdered with a cottony exudation, the females being light-brown or greenish, the males darker; both sexes show short suckers and antennæ. These insects may be seen on the trees after all the leaves have fallen. Then *A. Rumicis*, a species of general distribution, is seldom minus its representatives on the Peach, though it may not succeed in stripping that tree of its leaves, as it will sometimes strip the Pear, because the former is less likely to be neglected. In shape this aphid is almost globular, the thorax and abdomen having no distinction of parts. In the juvenile stage of a lighter grey it becomes nearly black when adult. For all these species, should they appear in houses, there does not seem to be a better remedy than tobacco fumigation, the paper being damped so as to produce a thick smoke. Out of doors our plan must be syringing or washing, but whatever be the nature of the compound selected, unless the aphides are very small, it will kill only a few if it contains nothing of a soapy character to make it adhere to the skins of the insects.

Several species of scale or coccus, a well-known example of which is popularly known as the brown scale, are apt to swarm upon Peaches which have not been attended to during the winter

season, but they are easily suppressed by suitable applications used at a time when the branches can be brushed as well as washed. The solution of petroleum, with soap or soda, applied at a temperature of 130° answers well enough, though some rely upon a sulphur wash for the extirpation both of scale and thrips. And when the scarlet scale or mealy bug (*Coccus adonidum*) has got into a Peach house it is difficult to eradicate, since the pest spreads itself over the woodwork and lurks in the crevices of walls. It is a largish species, occasionally confounded with the American blight, which is certainly like it in the circumstance of having an outer garb of woollen. Protected by this the shield-like female insect keeps quiet, and apparently lifeless through the winter, to deposit, if undisturbed, a numerous batch of eggs in early spring. Now and then we observe on the Peach or Nectarine the curious little mussel scale of the Apple (*Aspidiotus conchiformis*). Of the prolific genus thrips we see two species upon the Peach and its allies, both injurious; one is a dingy black with yellow legs and white wings, the other is a yellowish brown insect, as small but rather slimmer than its relative. The power of springing which they possess aids them to distribute themselves over a tree, and "keeping them low down," which has been advised, does not prove very feasible in practice. Those atmospheric conditions that favour the increase of thrips also suit the red spider, which is often in its company under glass, and requires to be dealt with similarly.

Reserving till we treat of the Apricot some other insects that are common to it and to the Peach, we may mention here the Wabarian moth (*Tortrix Wabariana*), the presence of which in the larval state is indicated by small heaps of dust upon the bark. When this is removed a furrow is perceptible, in which the larva feeds and occasions a flow of sap, the consequence being that the tree is much weakened should the insects be numerous. This small but pernicious caterpillar feeds through the greater part of the year; it is dull green and red-headed. The moth, which is brown with silvery and golden marks, sits upon the bark in May or June, and while the wings are folded the eye hardly distinguishes it. The moth is represented in fig. 19.—ENTOMOLOGIST.

ANTWERP INTERNATIONAL HORTICULTURAL EXHIBITION AND CONGRESS.

AUGUST 2ND TO 6TH.

THE present season has been an exceptionally busy one in the commercial capital of Belgium owing to the great Exhibition there held, and an excellent opportunity was thus afforded for a series of horticultural shows such as has never been held in Antwerp before. The principal event was, however, that fixed for August the 2nd to 6th, and which was publicly opened on Sunday last. To render this still more memorable it was also decided to hold an international botanical and horticultural congress in connection with the Exhibition, and a number of invitations were sent to the chief horticulturists and botanists of Great Britain and other European countries. The British contingent comprised several well-known persons, amongst whom may be specially mentioned Professor Thistleton Dyer, Royal Gardens, Kew, and Dr. Robert Hogg, who were appointed to represent the Royal Horticultural Society both at the Jury and the Congress.

To many who were induced either by business or pleasure to make the journey to Belgium the selection of an agreeable route became a matter of considerable importance, and as there is a choice of several there was necessarily a diversity of opinion as to their respective merits. Having, however, the opportunity of starting a week in advance of the Show the commencement of the day service between Harwich and Antwerp by the Great Eastern Company afforded a most convenient mode of reaching the Continent. For many years this Company has had an excellent service of boats at night, which to commercial men is very advantageous, as leaving London at 8 P.M. Antwerp is reached by 9 or 10 the next morning, and no time is thus lost in travelling. To accommodate those, however, who are not quite so pressed for time or who prefer voyages by day, the Company decided to institute a service twice a week from London to Antwerp and *vice versa*, the outward journey being performed on Wednesday and Saturday and the homeward on Tuesday and Friday. The first journey was made on Saturday, the 25th July, by the handsomely fitted boat, the "Adelaide," and by this we made our trip across the German Ocean in remarkably fine weather. Starting from Liverpool Street at 9 A.M., a quick run conveyed the passengers to Harwich in about an hour and a half, from which the "Adelaide" departed punctually at 11 A.M. A slight breeze and an unclouded sun, with the sea as calm as a lake, rendered the journey all that could be desired, and it was almost with a feeling of regret that the majority of the passengers sighted land shortly after four in the afternoon. Passing along the coast of Belgium within an easy distance of the shore, Blankenberghe and several other rising watering places were readily seen, and by 6 P.M. the mouth of the Scheldt was reached, the boat stopping a few minutes at Flushing to take a river pilot on board. An excellent dinner was then served in the saloon, and when the passengers again ascended to the deck we were far up the river. The Scheldt is not an interesting river; its low banks and the flat country on each side being exactly of the distinguishing Netherland character; it therefore afforded much satisfaction to all when the long, brightly lighted quays of Antwerp came in sight about 9.30 P.M. By this time the moon was shining brightly, and the lofty handsome tower of the Cathedral was a prominent object in a very pretty picture. We were soon alongside the South Quay, where the Great Eastern Company's boats are secured, and

a great hustle ensued, passengers hurrying off to their hotels, the Customs officers busily examining the luggage, porters and cabmen eagerly soliciting patronage. The Company had, however, wisely arranged that all passengers who wished could secure berths on board on the night of arrival, and this was taken advantage of by many who wished to avoid the trouble of searching for rooms at a late hour, especially as the town was unusually full owing to preparation for the great fête on the next day—the opening of the new quays by the King. A refreshing sleep in a comfortable berth concluded a most pleasant day's journey. The next morning we were prepared for the great event which attracted so many thousands of home and foreign visitors to the busy and interesting old city. Concerning the events of that day, and a series of visits to the horticultural establishments at Ghent and elsewhere our notes must be reserved, for the Horticultural Exhibition now specially demands attention.

THE HORTICULTURAL EXHIBITION.

When the Jury assembled on Saturday, August the 1st, the pavilion devoted to the horticultural exhibits presented a beautiful sight, and constituted one of the grandest displays of foliage plants that has ever been provided, even on the continent, where foliage plants are so extensively grown. The pavilion is a lofty building adjoining the International Exhibition, about 300 feet long and 180 wide, with three spacious annexes, the whole of which were fully occupied with the plants in competition or otherwise. The majority of the 132 classes provided in the schedule were represented, and in some the competition was very close, for the good-natured rivalry prevailing between the Belgian nurserymen induces them to try their utmost at shows of this character, the result of which is that visitors can obtain a good idea of the skill of the horticulturists and the extent and variety of their collections. Perhaps the most striking feature at such an exhibition to those familiar with British shows is the informality of the arrangement, and in that respect they unquestionably surpass us, though in other matters, especially in making known the decisions of the Judges, we are much more expeditious. The exhibition is first prepared for the Jury, as it was on Saturday. These gentlemen perform their duties, and in the afternoon an official, with a large staff of assistants, takes charge and re-arranges the exhibits to facilitate the entrance of visitors, and to produce a better general effect, and this work was not completed until midday on Sunday, during which time all persons are rigidly excluded, so that a day and a half elapses from the time the Jury made their awards until the prize cards are all affixed, and then the public are admitted. For shows extending over five or six days this plan may be suitable, but in our exhibitions we have to get through the work much more quickly.

Considerable taste is, however, exercised in the arrangement of the exhibits, and this compensates to a great extent for the delay which occurs. Around the sides of the pavilion were disposed the groups of foliage and miscellaneous plants, while in the centre were placed the groups of flowering plants that imparted a most welcome colouring to the effect. Few who are only accustomed to our comparatively small displays of foliage plants could imagine the beauty that can be produced by the varied collections grown by Belgian horticulturists. In Palms alone a dozen or twenty species and varieties are rarely seen together at one show in England. At Antwerp there must have been some hundreds at least, and differing largely in their leaf characters, from the huge leaves of the *Verschoffeltia* to the most graceful of the *Cocos* or *Arecas*, there was every intermediate form. *Dracenas*, too, were very beautiful, highly coloured, or with clearly variegated foliage, and of all sizes, from specimens suitable for the table to others 5 or 6 feet high, and clothed with foliage to the rim of the pots. Some well-coloured *Crotons* were also noticeable, but these are frequently better shown at London exhibitions. Very distinct characters were imparted by the numerous *Marantas* and *Bromeliads*, the last-named being exceedingly fine, and several enormous plants of *Billbergia* and *Vriesias*, especially of *V. Hillebrandiana*, with channelled leaves 4 or 5 feet long, were very striking. Pitcher Plants, particularly *Nepenthes*, were also strongly represented, Orchids and new plants forming departments of great interest and beauty, while smaller collections innumerable of Lilies, *Pelargoniums*, and Roses, all assisted in furnishing the Show. Conspicuous amongst the latter were eight fine boxes from Messrs. Souper et Notting, Luxembourg; and Mr. Charles Turner, Slough, contributed sixty superior blooms of *Carnations* and *Picotees* that were greatly admired.

When the arrangement of the Exhibition was completed for the opening by the Minister of Agriculture on Sunday at mid-day the general effect was grand. The groups had been placed closer together, or slightly altered where necessary, with considerable taste, and they were all margined with a neat white wicker edging about 1 foot deep, which gave a most pleasing finish. The paths were widened so as to allow free passage in every direction, and the visitor could wander about, almost imagining himself in some grand tropical garden where all the choicest vegetation of the globe had been collected together for his delectation. The plants were placed upon the floor, no staging being employed except in the two annexes, which contained the *Nepenthes* and Orchids, and these were suitably draped. In the principal pavilion, however, there were no formal lines of tables such as are too familiar in English exhibitions, and the whole plan was as artistic in design as it was complete in the execution.

GROUPS AND COLLECTIONS OF PLANTS.

Considerable space in the pavilion was occupied by groups, the majority in competition; but some that were contributed out of the classes also added greatly to the extent and attractions of the display. These cannot be taken in detail, but the more important will be mentioned, and foremost honours must be accorded to Madame La Grelle-Dhanis, Berchem, Ghent, who had an extraordinary number of large specimen plants, all in excellent health, and giving satisfactory evidence of the best culture. The Jury very fittingly recognised the importance of this lady's exhibits by awarding her the gold medal offered by the town of Antwerp to the amateur who contributed most to the beauty of the Exhibition. Several of these groups were arranged together on one side of the pavilion, and formed the grandest bank of specimen plants that we have ever seen from one amateur, and Antwerp has every reason to be proud of its distinguished exhibitor. Gold medals were also awarded as first prizes in each of the following classes, in which Madame Le Grelle-Dhanis was the principal exhibitor:—A superb collection of fifty species or varieties of plants

flowering or foliage, gained for Madame Le Grelle the first prize of a gold medal, but the majority of the specimens were foliage plants; Marantas, Pothos, Anthuriums, Dieffenbachias, a grand specimen *Licuala grandis*, and a highly coloured *Heliconia aurea-striata* being the most noticeable. M. Moens, Lede, Antwerp, was placed second, and awarded a gold medal in this class for a very handsome group, in which *Maranta Warneri*, *Cycas siamensis*, *Tillandsia tessellata*, *Alocasia Sanderiana*, with Palms and Cycads, figured conspicuously. M. de Hemptinne, Ghent, was third with a varied and attractive group. The class for twenty-five species of ornamental plants comprised some very large Palms of many species, but the most remarkable plants were *Zamia Leyi*, with shining green graceful leaves 8 feet in length; *Aralia heteromorpha*, 12 feet high and in vigorous health; *Hæmalonema marantæfolia*, a handsome variegated plant, and *Phormium variegatum*, large and finely coloured. A similar award was granted for a collection of Marantas, which included all the finest varieties of these plants in cultivation, some plants, as *Kegeliana*, being 8 feet in diameter, with fresh healthy foliage, which in this form is very distinctly marked with green blotches on a silvery ground. Other good varieties were *Makoyana*, *Wagneri*, *vittata*, *Buchemiana*, *Porteana*, and *Kerchoveana*. A collection of Crotons from the same exhibitor were by far the best coloured in the Show, such forms as *Morti*, *magnoliæfolius*, and *Baron de Rothschild* being superb. A handsome collection of thirty species of Ferns, also from Madame Le Grelle-Dhanis, included good plants of the best *Adiantums* and *Gymnogrammas*, an uncommonly fine example of *Acrostichum squameum*, with white downy leaves an inch or two in diameter and 6 to 10 inches or more in length, forming a most effective central specimen. The twenty-five variegated foliage plants comprised some handsome *Dieffenbachias*, a particularly fine *Alocasia metallica*, with large superbly coloured leaves, a gigantic *Monstera deliciosa*, with *Pothos anrea*, *Cyrtodeira fulgida*, *Schismatoglottis Robelini*, Cycads, and Palms. These fine groups formed the greater part of the exhibits from Madame Le Grelle-Dhanis, and well deserved all the honours they obtained.

Next in order of the principal exhibitors came Mr. Louis Van Houtte, Ghent, who well maintained the high credit of the firm with a series of magnificent groups and collections, for which a gold medal of 200 francs was awarded as the most important contribution from nurserymen. The most important of these was the premier group of fifty species or varieties of plants, in which Mr. Van Houtte entered some of the best of his plants, deservedly winning the gold medal. In the centre of the group was an extraordinarily grand specimen of *Anthurium Veitchii* with about two dozen fine leaves 5 feet long, and of that peculiar rich green which distinguishes this handsome form. Another notable plant was *Dieffenbachia imperialis nobilis*, with large very dark green leaves spotted with a lighter shade—a most effective and strong-growing variety. *Licuala grandis*, 4 feet high and with thirteen leaves, was very handsome; *Zamia Mitchellii*, an elegant form with graceful leaves, the pinnae very narrow. A grand *Verschaffeltia splendida* was prominent in the centre behind the *Anthurium*, and other notable plants were *Schismatoglottis Robelini*, *Dracæna Lindenii*, *Cyanophyllum magnificum*, *Tillandsia tessellata* (very handsome), *Sphærogyne latifolia*, *Aralia Chabrieri*, *Anthurium Laucheanum*, *Washingtonia robusta*, and *Phyllotanium Lindenii*. The second prize in this class (also a gold medal) was awarded to MM. Jacob-Makoy, Liege, who had an admirable group, comprising large handsome specimens of distinct plants. Very notable was a central specimen of *Eugenia glazioviana* over 6 feet high, an uncommon species with closely set leaves rather suggestive of *Boronia serrulata*, graceful in habit, the branches slightly drooping. *Vriesia Hillegeriana* was remarkably bold-looking; *Oreopanax dactylifolium*, with deeply and irregularly cut leaves, was distinct. *Maranta Lindenii* was in uncommonly fine condition. *Alocasia Putzeyi*, a handsome plant in the way of *A. Thibautiana*, was noticeable; as were also *Anthurium macrolobum*, with large irregular lobes, very bold and distinct; *Dracæna Massangeana*, tall and well variegated; *Anthurium rosenm*, like a light-coloured *A. ferrierense*; and a fine pan of the bronze-coloured *Liparis elegantissima*, formed the chief features in this praiseworthy group.

Mr. Van Houtte was again the premier exhibitor in the class for twenty-five variegated foliage plants, which comprised magnificent examples of the following amongst many others of slightly smaller size, but scarcely less beautiful:—*Dieffenbachia magnifica*, *Alpinia vittata*, *Curculigo recurvata variegata*, *Maranta picturata*, *Dracæna Lindenii*, *Tillandsia fenestralis*, *Pothos anrea*, *Pandanus Veitchii*, and *Phyllotanium Lindenii*. A very close second in this class was M. A. D'Haene, Ghent, who had some well-grown plants, one of the most striking being a specimen of *Bertolonia Van Houttei*, which was in superb condition, the handsome foliage grandly coloured.

Nepenthes were shown by several exhibitors, and the leading collections were extremely fine, especially the dozen with which Mr. Van Houtte gained the first prize, a gold medal. These plants were all in vigorous health, and bearing in some cases several dozen pitchers, such forms as *Mastersi* and *sanguinea* being very highly coloured. The dozen comprised, in addition to the two named, *Hookeriana*, *hybrida maculata*, *Dominiana*, *Chelsoni*, *Outramiana*, *hybrida*, *Courti*, *intermedia*, *Wrigleyana*, and *Veitchii*. A first prize was also awarded to M. P. F. Boutmans, Lille, for a well-grown collection, the three finest plants being *Mastersi* with sixteen pitchers, *laevis* over 5 feet high with several dozen pitchers, and *ampullacea* similarly good. For a collection of miscellaneous Pitcher Plants, including *Nepenthes*, *Sarracenias*, and *Dionæas*, M. P. F. Boutmans was first, showing *Sarracenias flava*, *Tolliana*, *Swanniana*, and *Maddisoniana* in excellent condition. *Nepenthes Mastersiana*, *Morganæ*, *phyllamphora*, with two or three dozen pitchers, and *Dionæa muscipula* were all healthy plants. MM. Jacob-Makoy followed with *Darlingtonia californica* (very strong) and *Nepenthes Mastersiana* bearing eight large richly coloured pitchers. M. Van Houtte also exhibited new plants, as noted elsewhere, and in several other classes gained honours.

A gold medal was also awarded to M. A. D'Haene, Ghent, for the extent and beauty of his numerous groups, an honour which was extremely well merited; for all his plants were distinguished by a vigorous health that is indicative of the most skilful culture. M. D'Haene also has a rich collection of plants that is fast increasing in importance, and includes many choice and beautiful species and varieties, several of which were represented at the Show. M. D'Haene's courtesy as an official in connection with the Exhibition also deserves record, for he most willingly gave English visitors

all the assistance in his power, which proved most valuable in several difficulties.

NEW PLANTS.

An important and interesting feature in the Show was the large number of new plants exhibited, many of which were of recent introduction, and have not yet found their way to English gardens. As in the other sections the foliage plants predominated, and among them were several very striking novelties. The principal class, the first in the schedule, was for twenty-five new plants introduced into Belgium since 1882, the prizes being a gold medal offered by the King, a much-coveted honour, and a second-prize gold medal, value about £5. Three competitors entered, and the leading position was, after careful consideration, awarded to MM. L. Jacob-Makoy & Co., Liege, for an admirable collection of well-grown plants, representing the following:—*Philodendron Mamei*, a neat Aroid; the leaves 12 inches long by 8 wide, and irregularly blotched with white; introduced from Ecuador, 1883. *Selaginella cognata*, one of the frondose forms, with pretty, closely branched fronds of a bright green colour. *Caraguata Peacockii*, a bold Bromeliad, with channelled leaves 12 to 16 inches long and 1½ inch broad, curiously coloured with an intermixture of rosy purple and green; Brazil, 1885. *Odontoglossum vexillarium Wioti*, a white-flowered variety of good size and form. *Dichorisandra Sieberti*, leaves 15 inches long by 4 wide, oblanceolate, green, with white streaks; an elegant plant; Brazil, 1884. *Pandanus discolor*, chiefly distinguished by the brownish purple tint on the under side of the leaves, which were 2 to 2½ feet long; India, 1884. *Schismatoglottis decora Witteana*, a pretty variety, with heart-shaped leaves 4 inches long and 3 inches wide, matted with green and silvery white, of dense habit, and apparently well suited for growing in large pans in the stove; Borneo, 1885. *Alocasia Bernardi*, somewhat suggestive of *A. Veitchii* in shape, the leaves 12 inches to 2 feet long and 10 inches broad, green with silvery veins; a bold, handsome plant; Borneo, 1885. *Hoplophytum robustum variegatum*, an attractive variegated plant, introduced by the exhibitor from Brazil this year. It has narrow leaves, about 1 inch wide, but 18 inches or more in length, curving, and streaked from base to point with clear white. *Aralia Kerchoveana*, a strong but graceful species, with palmate leaves of ten deeply serrated leaflets, bright shining green in colour; South Sea Isles, 1883. *Carludovica rubricalis*, a distinct Palm, with leaves 2 to 2½ feet long, divided into two lobes; the stalk of similar length, but the plant did not show the character indicated by the name. Introduced by MM. Jacob-Makoy from New Grenada, 1885. *Piper ornatum*, leaves cordate, green, with a silvery mottling and a slight rosy tint, a pretty form that will probably become a favourite stove plant. It is an introduction from Malacca this year. *Dieffenbachia Jenmani*, leaves light rich green, with parallel bars of white; a distinct effective form from British Guiana, 1884. *Caraguata Osyana*, a closely spreading Bromeliad, with green leaves, the centre leaves and bracts bright red, very showy; Ecuador, 1885. *Brochinia demeraraensis*, a bold Bromeliad, with leaves 3 to 4 feet long and 6 to 8 inches broad, light green, very strong in habit, and most effective; introduced from British Guiana by the exhibitor, 1885. *Alocasia Sanderiana*, sagittate leaves, dark green, with silvery veins and an irregularly sinuated silvery margin. *Cryptanthus Regeli*, a curious Bromeliad, with dull yellow and dark green mottled leaves, dwarf in habit; Brazil, 1885. *Alocasia Van Houttei*, bold bright green leaves, 2 feet long by 18 inches wide, heart-shaped, very strong, the petioles curiously mottled. *Leea amabilis splendens*, a highly coloured form of this handsome stove plant, which is now well known in England. *Maranta speciosa*, leaves elliptical, 6 inches long by 4 wide, green, with silvery streaks, a pretty introduction from Brazil by MM. Jacob-Makoy. *Croton Wetterianum*, leaves dark green, with a gold centre, scarcely in character, but appears distinct. *Kæmpferia Gilberti*, an elegant variegated plant, with narrow leaves, green, edged with white or yellow. *Philodendron Sodiroi*, a showy growing form, with leaves 12 inches long by 10 wide, green, with a slight silvery hue, introduced by the exhibitor from Ecuador, 1883. *Nidularium anthocates*, very distinct, the leaves broad and comparatively short, not exceeding a foot in length, the outer green, but the inner ones of a purplish violet tint; introduced by the exhibitor, Brazil, 1884. *Dieffenbachia reginæ*, leaves spotted and margined with green on a white or yellowish ground; a bold, handsome, and distinct plant.

M. Louis Van Houtte, Ghent, was awarded the second prize, a gold medal of 100 francs, also for a very fine collection, of which the following deserve special notice:—*Heliconia aureo-striata*, leaves veined with gold on a green ground; *Anthurium Schmidcheni*, leaves heart-shaped, bold, 2 feet long by 1½ foot broad, bright green, with a velvety surface; *Massangea hieroglyphica*, leaves 12 to 18 inches long, 2 to 3 inches broad, bright green, with darker transverse bars, pretty; *Pandanus d'Haenei*, a species from Madagascar, with glaucous leaves and slight darker mottling, the dried leaves shown with the plant in another collection being 9½ inches wide by 4½ feet long; *Nepenthes Mastersi* had several good pitchers; *Phoenix gracillima*, a graceful Palm with narrow pinnae, something in the style of the *P. dactylifera* section; *Alsophila Rebeccæ*, a handsome Fern with pinnate fronds, the pinnae regularly undulated; *Philodendron Sodiroi*, already noted; *Pritchardia grandis*, with three fine leaves about 18 inches in diameter; *Alocasia Sanderiana* and *Dieffenbachia Jenmani*, both in the preceding collection; *Nidularium Echautei*, a fine Bromeliad with green channelled leaves margined with red; *Gymnogramma schizophylla gloriosum*, a strong growing variety of this beautiful Fern, with fronds 2 feet long, drooping round the pot and quite hiding it; *Anthurium Gustavi*, leaves heart-shaped, green, 3 feet by 3, a magnificent Aroid, with five of the grand leaves, a most distinct and effective plant; *Piper ornatum*, *Alocasia reginæ*, *Dieffenbachia magnificum*, *Tillandsia Pastuchoffiana*, a handsome plant of good habit, the leaves channelled, 2 feet long by 3 inches broad, with dark green lines irregularly distributed over the surface, mostly transverse, but some longitudinal; *Schismatoglottis crispata*, *Anthurium splendidum*, *Selaginella grandis*, *Aglaonema picta*, *Heliconia metallica*, something like a *Canna*, the ribs and under surface reddish; and *Alocasia Van Houttei*.

M. Auguste Van Geert, Ghent, was third with the following plants, most of which have been noticed in the preceding collections:—*Pandanus d'Haenei*, *Panax Victoræ*, *Cyclanthus discolor*, *Alocasia reginæ*, *Dichorisandra Sieberti*, *Kæmpferia Gilberti*, *Pandanus discolor*, *Leea amabilis splendens*, *Alocasia Van Houttei*, *Nephrolepis Bausei*, and *Ptychosperma Van Geerti*.

For six new plants MM. Jacob-Makoy & Co. were again the premier

exhibitors, showing several of similar character to those previously noted—namely *Dieffenbachia gemmata*, *Cryptanthus Lubbersi*, *Maranta Arreati*, *Alocasia Closoni*, *Dieffenbachia aureo-variegata*, and *Kæmpferia spectabilis*. Mr. D'Haene had the best three new plants—*Pandanus D'Haenei*, *Croton Roezlii*, with small elliptical leaves, yellow, red, and dark green, and *Pinanga kentiaeformis*, with pinnate leaves, the pinnae 1 to 2 inches broad, of strong habit. MM. Jacob-Makoy & Co. followed with *Schismatoglottis rotundifolia*, *Hoplophytnm robustum variegatum*, a pretty variegated plant, the leaves streaked with green and white, and *Anthurium loricatum*, leaves triangular, dark green, velvety surface, very distinct and striking. Several other classes were devoted to new plants, M. Auguste Van Geert winning the leading prize for twelve new and rare Palms with a good collection, a few other exhibitors also showing single specimens.

ORCHIDS.

Several collections of these were staged, but the competition in the classes was not strong, and two of the best collections were those from Messrs. Peeters & Vuylsteke. There was only one collection of fifteen Orchids from an amateur, M. Cannart d'Hamale, Malines, who had some well grown plants, his *Vandas* being especially fine, and the collection of Orchids at Malines is famous for the large plants of this genus. *V. suavis* Lindeni, 7 to 8 feet high, had three fine spikes; *V. suavis* (Veitch's variety) had two spikes of ten flowers each, richly spotted, and *Vanda tricolor insignis* had two good spikes. Other notable plants were *Calanthe veratrilifolia*, with twelve spikes; *Epidendrum vitellinum*, twelve spikes. *Cypripedium Veitchii*, *C. Lawrenceanum*, and *C. barbatum* superbum were all good, the latter with forty flowers, and a specimen of *Oncidium superbium* had two large panicles of flowers. All these plants were in excellent health, and as fresh as could be wished by the most fastidious of orchidists. The same remark would also apply to the twelve *Cypripediums* with which Mr. Heye-Leysen, Ghent, gained the chief prize, for they formed a most creditable group, and were selected from a collection of ninety-three species and varieties, the exhibitor having made a speciality of the genus. Those represented were *Veitchianum*, seven flowers; *Lawrenceanum*, superciliale, *marmorophyllum*, *œnanthum*, *Hookeræ*, *Stonei*, *Ashburtonia*, *Parishi*, *barbatum*, and *selligerum*.

An honorary gold medal was adjudged to M. Peeters, Brussels, for a large and handsome group of very choice and well-grown Orchids, one of the most notable of which was a plant of the beautiful *Cypripedium Morganii*, with six flowers, the first which have opened in Belgium. *Phajus Hnhmoldti*, a pretty rosy flowered species, with a yellow blotch in the centre of the lip, had a spike of ten flowers, and was much admired. Numerous *Cypripediums*, *Odontoglossums*, and *Oncidium*s made up the bulk of the group; but there was a remarkable plant of *Cattleya guttata* Leopoldi, with a dense massive spike of about forty flowers, one of the finest we have seen. The pretty white *Dendrobium Dearei*, the rosy crimson *Phalenopsis Esmeraldi*, the bright yellow *Anguloa Clowesi*, with *Masdevallias*, *Disas*, and many others, constituted a group of exceptional merit, and proved how well the culture of Orchids is understood in Belgium, and the crowd of visitors round it on the opening day also showed how the popularity of these plants is extending. M. Vuylsteke was also awarded a medal for a collection chiefly composed of *Odontoglossums*, but containing a wonderful specimen of *Acineta Humboldti*, with three spikes of ten dull red-spotted flowers.

Notes on several other classes, especially the *Bromeliads* and *Palms*, must be reserved for another week, and it can only now be further added that some of the principal exhibitors, in addition to those already mentioned, were—MM. Wartel Frères, De Griet Frères, Pynaert Van Geert, M. Dalière, M. Spae, M. Panwels, M. M. Wallem fils, and M. Everaerts. Special awards were also granted to the *Compagnie Continentale d'Horticulture*, Ghent, for some extremely fine specimen *Palms*; to M. Van den Wonwer for a large group of miscellaneous plants, most tastefully arranged, and containing numerous handsome specimens; and to several other exhibitors for single plants or small groups.

Upon the opening day the Exhibition was crowded with visitors and there was also a good attendance on the succeeding days. The Banquet was held on Sunday evening at 6 p.m., and was attended by nearly all the Jury present at the Exhibition—over 100. The English representatives were Professor W. T. Dyer, Shirley Hibberd, Dr. R. Hogg, T. Rivers, and H. Turner; about a dozen others who were invited not being present.

THE BOTANICAL AND HORTICULTURAL CONGRESS.

There was a large attendance of the members of the Congress at the opening on Sunday at 10.30 in the Grand Hall of the Cercle Artistique, Rue d'Arenberg. Dr. Baillon of Paris made an interesting speech in announcing the programme and work for the Congress, and there were several notable personages present. During the afternoon a visit was paid to the celebrated Musée Plantin, when each member of the Congress was presented with a souvenir printed from the old type and on hand-made paper. For Monday, Tuesday, Wednesday, Thursday, and Friday a very complete programme was drawn up, which included, besides discussion upon a variety of botanical and horticultural subjects, visits to the principal places of interest in Antwerp, Ghent, and Brussels. The weather proved fine, not quite so hot as in the previous week, and the visitors were thus enabled to more thoroughly enjoy their short period of residence amongst a most hospitable and enterprising people.

SAWBRIDGEWORTH IN JULY.

In a great emporium of fruit trees such as the world-famed nurseries of Messrs. Thomas Rivers & Son, there is something worth seeing at all seasons of the year; in winter, methods of pruning, and the results in bristling huds; in the spring a magnificent display of blossom, really a grand undulating flower garden upwards of 150 acres in extent; in summer a wonderfully diversified collection of fruit, both as regards variety and the differing forms of trees. Hardy fruits of all kinds, trees nearly all sizes, from orchard standards in bearing to heavily laden pyramids and bushes, cordons double and single, horizontal, vertical, and

oblique, with forests of maidens, are all represented. Then under glass the miniature orchards of Peaches, Nectarines, Cherries and Oranges cannot fail to arrest attention; and not less so the long ranges devoted to the culture of Vines in pots and Vines in bearing, all of which will bear the most critical inspection, for the canes and the crops are of the first order of merit, representing, as they undoubtedly do, high excellence in cultivation, while in addition to these there is in July a great feast of Roses, the soil evidently being as suitable to these flowers, conducting both to sturdiness of growth and brilliancy of colour, as it is to the production of fruitful trees and superior fruit. The soil is a calcareous loam, medium to strong in texture, and contains distinct traces of iron, and this soil, with the full exposure, incites not sappy but sturdy growth, which appears to ripen as it is made, imparting to the trees early and marked fertility. Sawbridgeworth, then, both as regards soil and position, possesses great natural advantages for fruit culture, and when to this is added the aggregation of professional skill through three or four generations of Rivers', something good may reasonably be expected, and a great deal that is excellent is produced. The nurseries are continually expanding, field after field being added, and if the progress continues, as no doubt it will, 200 acres will soon be covered with trees. It will be convenient and perhaps not uninteresting to refer briefly to the leading departments.

PEACHES AND NECTARINES.

These are grown in pots mainly, but some, that may be termed standard orchard trees, are planted out in great plain glazed structures, wooden sheds they may be termed, roofed with glass, with wide side lids for ventilation, and ventilators next the ridges over the doors at each end of the houses. That this provision for changing the air suffices is evident by the condition of the trees, for they are as healthy as can be imagined, nourish no red spider, but perfect abundant crops of superior fruit. The soil in which the trees are planted is as hard as a floor could be made with rammers, those in pots having similarly firm soil, and top-dressed with kiln dust and horse-droppings saturated with liquid manure. There is no better material than this for the purpose, and it will, perhaps, on a future occasion be more fully referred to, as many persons have procured and used the wrong material—the dried sproutings of barley from the germinating chambers of malt kilns, which is not "kiln dust" as used by Mr. Rivers and other persons who know what they are about.

With the exception of two American varieties, the Alexander and Hales' Early, the best early and late Peaches in cultivation have originated in the establishment under notice, and delicious fruits can now be gathered without forcing yet with the aid of glass, from the middle of July till November. Alexander was gathered in the middle of July, and Early Beatrice was being gathered daily—a fine crop of medium-sized highly coloured and delicious fruits; Early Louise, Hales' Early, Early Rivers (pale, but good), and Rivers' Early York following closely in succession; then follow the Condor and Dr. Hogg, Early Grosse Mignonne, all good in colour and quality, with the old favourites Grosse Mignonne, Royal George, Noblesse, Bellegarde, and others not sufficiently known, such as Goshawk, Sea Eagle, and the Princess of Wales, and Gladstone, all of the first size and quality. They are worthy of trial wherever convenience is afforded. The yellow-fruited American Peaches are good in appearance, but there is no certainty of their flavour being developed in this country. Pyramid trees, from 6 feet to 9 feet high in the houses, are very handsome when laden with fruit, and numbers are bearing at half that height. Thousands of trees are prepared in pots either for shifting into larger or planting out as may be desired, and, well managed, are certain to bear freely, for they are studded with blossom buds.

Great attention is given to Nectarines, in fact this fruit has been practically revolutionised at Sawbridgeworth, and it is only right to say by the present proprietor, Mr. T. Francis Rivers, from careful fertilisation in his younger days, and years of patient waiting and testing, for varieties are fruited for years before the public hears anything about them. The earliest of all Nectarines is Advance; it is of medium size and superior quality. Then comes Lord Napier, an excellent grower and bearer of large fruit, which well produced is quite first-rate in quality, and, exposed to the sun, good in colour. It may be fairly described as one of the most valuable Nectarines ever raised. Then follow Stanwick Elruge, and the poets' Nectarines—Byron, Newton, Milton, and Spenser, all fine—the last-named wonderful in colour, with Albert Victor, Pine Apple, and Victoria, the excellence of which will be admitted when produced in good condition, and they are all good growers and bearers. All these are natives of Sawbridgeworth, as are other good sorts, but only one can be mentioned, the new Goldoni, that has recently been certificated. It is quite distinct in every way, brilliant in colour, orange scarlet, and exceedingly rich; the tree is, moreover, a free grower and bearer, and the fruits are of good size. Its merit has been severely tested, and now it is introduced to the public. Let it have a fair trial. Of this it is worthy, and it is not likely to disappoint. Possibly the name, that of an Italian poet, expressive also of the colour of the fruit, may have led some persons to imagine this variety to be of continental origin. Something to that effect having reached Mr. Rivers, he has put the matter right in the following historical note.

"The 'Goldoni' Nectarine is rather mixed in its parentage. It is a seedling from a stone of a seedling white Nectarine which was raised from a stone of the 'Galande Noire' Peach. The register of these successive seedlings is carefully kept. The seedling tree is here in a cool orchard house, where it ripens about the 28th August. I have tested it for some years, and have not introduced it until I was quite sure of its high excellence. Rumour in this case is a 'false thief.' There are a very

few continental Nectarines worth eating." That is conclusive, and very fittingly closes these notes on Nectarines.

CHERRIES.

The Cherry house at Sawbridgeworth is as plain and cheap a structure as can be imagined. It is a long span-roof, 12 feet wide, with boarded sides about 4 feet high, with a continuous ventilating shutter about 2 feet wide, but nearly always open, the space being covered with fixed wire netting for excluding birds. There is a path down the centre and two rows of trees in large pots plunged in the borders on each side—in all four rows. They bear prodigiously, and such fruit is rarely seen. It is splendid in size, fruits of the Géant de Heltinghem being nearly 4 inches in circumference. It is also superior, as others are in quality, all far surpassing fruit ripened in the open air, and it is not surprising the examples at the Royal Botanic Society's Show tempted the Royal visitors, who "never tasted such Cherries before." There is a new treat in store for persons who may decide to grow such Cherries as these, as thousands may do, and by a good selection of varieties may have handsome dishes for three months. It is passing strange that a Cherry house is not erected in any otherwise well-appointed garden where choice fruits are cherished. As an example of the productiveness of the trees a bunch of the Early Rivers is illustrated first. It is not adequately represented, as it had necessarily to be reduced. It was a fine cluster of between sixty and seventy superior fruits of one of the most valuable Cherries in cultivation. Other superior varieties are accurately described in the catalogue of the firm, and need not therefore be enumerated here. No structure in the establishment gives greater satisfaction to the proprietor than this plain and profitable house of Cherries. It is not heated.

VINES.

The extensive and successful culture of Vines in pots in this nursery is widely known. Year after year the rows of pipes running along the front of long low houses form the base for thousands of them. It is astonishing where they all go, but that they do "go" is certain, and they are not likely to disappoint, for they are in every respect excellent, clean, sturdy, and mature. Not less satisfactory is the crop of Grapes on established Vines, all the leading varieties being well grown, the Vines planted in the ordinary soil of the nursery, trenched, and enriched with a heavy surface covering of manure. The value of trenching is firmly believed in at Sawbridgeworth, for the simple reason that without it so many and such good trees could not be produced on given plots of ground, nor such fine crops of Grapes in the houses. The weight of fruit is wonderful, and no rods are more heavily laden than those of the Gros Maroc, especially young rods; and it is pretty certain that a greater number of fine bunches of this beautiful Grape can be had by working the Vines on the long-rod than the short-spur system. No finer crops of any Grape could be desired than may be seen of Gros Maroc. The weight of fruit is far greater and the bunches finer on young canes than on old rods. It is the same with the Duke of Buccleuch, though only a few rods of it are grown, but that it can be grown at Sawbridgeworth is evident, for out of several thousands of canes one produced by the Duke surpasses them all, and it is doubtful if a finer has ever been seen of any variety of Grape.

IN THE GROUNDS.

We have been under glass so far, and might tarry longer, but must have a quick run through the grounds. In one quarter we see hatches of fruit trees in pots, Pears bearing heavy crops and others in preparation for them. Peaches and Nectarines from which crops have been gathered and the wood now ripening, and smaller trees innumerable also ripening, and which will bear their first crop next year, with Apricots, Apples, Plums, Cherries, and Figs all grown in the same way, and all grown well.

In the open quarters the number of trees and varieties are bewildering. Old favourite Plums appear to be grown as extensively as ever, while the new ones, such as The Czar and Grand Duke, must be in great demand to necessitate such a bountiful supply, and it is confidently expected that the demand will go on increasing as the merits of the varieties become more widely known for supplying the markets with fruit at a time, early and late, when fine Plums are not commonly plentiful.

A plantation of what may be termed pyramid or vertical cordon Apple trees for bearing, with pyramid Gooseberries between the rows, is worthy of note. There are some 3000 trees in this plot, the Apples studded with spurs from the ground to the summit, and the Gooseberries laden with fruit. The Apple trees are not "summer pruned" to any material extent, Mr. Rivers having modified his views somewhat on that practice, which he is of opinion may be easily overdone or imperfectly conducted. If a branch threatens to go too far ahead of its fellows it is not cut back, but just the point is nipped off, and in that way the balance of the trees is maintained and their fruitfulness induced, while their vigour is not impaired. It is very apparent, however, that nothing approaching to overcrowding of the growths is permitted, but each shoot stands as it were alone, the leaves not being within touch of those on other shoots. That after all is the great secret of fruitfulness; and when summer pruning is so conducted as to result in a multiplicity of branches crushing against each other, it is an evil and not a benefit. Thousands of growths require to be thinned out of thousands of young trees in gardens of this country in order that those remaining may be rendered fertile.

Among Pears the seedling Fertility continues to merit its name, for the trees are crowded with fruit. This variety has been fruited for years, and never yet failed, therefore its raiser is justified in introducing it as a

market Pear of real usefulness, and not as a high-class imposing fruit for choice desserts.

Filberts and Cob Nuts are grown largely as standards, being inarched on stems 7 feet or so high, and in this way they form large, round, productive heads, with no troublesome suckers springing from the base, as fruiting examples in the pleasure grounds testify. In this form the trees are both ornamental and useful, as are a number of other trees of various kinds in this great establishment.—A VISITOR.

DRY WEATHER AND SHALLOW SOIL.

NOT long ago when deep *versus* shallow working of the soil was being discussed in these pages we said nothing for or against either system, but had good reason to practise and advise deep digging. In cool damp weather shallow soils may give a fairly good return, but in excessively hot and dry times they are found wanting. Let those who only believe in surface scratching note the state of their crops at the present time. They are in a shrivelled and flavourless condition. The crops come in all at once, and are over quickly. The greatest help anyone can have in the kitchen garden in times of drought is a deep soil; while the most difficult matter to contend against is shallow-worked ground and surface-rooted plants. Now is the time to test the value of the systems.—A SCOTCH GARDENER.

THE SPOT ON PELARGONIUMS.

WHAT is the spot? Those who have really got the spot on a plant will be in no danger of not knowing what they have got. They who have never seen it, or are uncertain about it, may form a very good idea of the appearance it presents if they could conceive of a quantity of lead shot, from the size of pin-heads to that of small peas, heated as much as possible, and then retained in a scattered manner on the surface of the leaf, until the parts on which they rested were heated and scalded through. The petiole, or footstalk, of the leaf is frequently marked in a similar manner, and in very bad cases the young shoots are also similarly affected. It generally makes its appearance first on the oldest and most succulent leaves, and from small dots continues to spread until the leaves become unsightly, and in extreme cases fine flowers may be seen on plants pretty well as naked as a fowl would be that had lost most of its feathers.

Is the spot infectious? Some say, Yes; and would as soon allow one spotted plant to remain in their collection as a farmer would permit a diseased sheep to taint a flock. My own limited experience does not lead me to this conclusion. I think those plants will only be affected that have been individually submitted to the predisposing causes. True, it may often happen that after one plant becomes spotted, others in its vicinity will become spotted likewise; but that is no proof of infection, though it may be a reminder that all these have been subjected to unfavourable influences. That amid such spotted plants there should be some vigorous and healthy would not be conclusive evidence either way, as the natural constitution of the plant might be stronger to resist the taint; or, as we believe, that strength of constitution might be able to resist the deleterious influences that injured others; or, what is as likely, these influences were not brought to bear upon them in a similar manner, as a very little difference in the treatment, even as respects dryness and moisture, would make a great difference in the result. To make sure, however, and to act on the safe side, if the plant that gave the first signs of the spot was of no value I would counsel getting rid of it; if valuable and desirable, I would not do so, but keep it a little by itself.

Does the disease become inherent and constitutional in the plant? Here, again, many say, Yes! and if so, the keeping of such plants, or propagating young plants from them, would merely be doing all we can to propagate a disease. Unless the plants are much injured indeed, so as to affect the stems as well as the leaves, I should be under no alarm of the disease spreading; in other words, I do not consider the disease inherent and constitutional, because I have found that plants that were spotted one year were free from spot on the following year, and that the cuttings taken from them were also clean, green, and healthy. This result must be attributed to the disease existing chiefly in the foliage, and when that is wholly removed and the plants cut down the new leaves and shoots that are formed will give new and healthy vigour to the plants. Here, however, as in the last case, merely as a security, if I had healthy plants of the same kinds as these diseased, I would throw the latter away and grow from the former. But unless the shoots were injured very much I should be loath to throw away a good and scarce variety. In general cases I believe that the spot in the plants of this year need not be seen on the same plants next year.

What is the cause of the spot? Here the theories are endless; every grower, as he has a perfect right to do, assigning what, no doubt, appears to himself a satisfactory reason. I wish

I could here do the same. The following is what experience and observation have led me to consider as the causes, but I by no means consider them fully satisfactory. The main cause I attribute to a close, cold, stagnant, moist atmosphere, especially in winter. The injurious influence is farther increased when in these circumstances the soil about the roots is wet rather than dry; and again, these influences are farther increased when the

thing is attempted beyond keeping them, and the failures that then must be calculated on at times. Anything like growing in the first months of winter, by keeping them warm and closish, will receive a sad change when they must be shut up to keep out the cold. In such cases much may be done by preventing growth when the weather is mild by abundance of air, and comparative dryness at the roots. But then these would be circumstances



Fig. 20.—RIVERS' EARLY PROLIFIC CHERRY, from a tree in a pot.

plants had been previously growing in a highish average temperature, with only a small amount of sunshine; while after this cooling and damping process the sun shines rather bright for a few days, and we hastily think that the plants will be so fond of it after their cooling, that we never dream of giving them the slightest shade. Hence the difficulty of keeping the more tender of the *Pelargonium* section, fancy or florist, in cold pits, if any-

different from what we have supposed to be predisposing causes.

Let us glance at an imaginary case, the parallels for which may not unfrequently be found. These *Pelargoniums* after standing, as was quite right, in the sun until the wood has hardened, giving them but little water in the meantime, were cut down at the end of July, were placed in a shady place, and a

spare sash thrown over them until the spurs and horns left pushed out young shoots for their buds. Then they were taken to the potting shed, the old earth shaken from the roots, these roots pruned in a little if they wanted it, and then potted in fresh soil, and very likely in pots a size smaller than they stood in before. The owner wishes to get them forward, and keeps the plants rather close and moist in the warm months of autumn. They are transferred in good time to the greenhouse, and the same means of getting them to grow are persevered with. The grower has been told that 45° is the lowest the plants should see at night, and November being warm, the natural and artificial climate combined is generally nearer 50° to 55° at night, while the days, though warm, are but sparingly brightened by sunshine. The plants are rather extra watered as a matter of course, and leaves get large and fine, and as the old saying has it, "as green as Leeks." In December and January a sudden change comes, the weather becomes misty and cold, the plants are saturated with moisture, all the lights are kept shut, and as visions of economy in fuel, combined with inattention, obtrude upon the scene, the plants are considered perfectly safe if the thermometer is only a little above freezing point—nothing is thought of the danger of extremes. No account is taken of the amount of watery fluid stuffed into the plant in warmer dull weather, and which now can neither undergo elaboration, nor yet be got rid of by perspiration; and when, after a week, or a month, or a number of days of such treatment in such circumstances, the mist having disappeared, the cold black frosts having said for a time good-bye, and the sun having once more appeared strong and bright in the heavens, not a doubt is entertained but these squashy leaves would rejoice in his light, and hold up their fronts as boldly as if they had never luxuriated save in his presence, and had not been starved and swilled by turns in his absence; and great is the outcry when the rays penetrate and scald all the softest watery places.

The presence of the sun in such circumstances, though it accelerates, is not indispensably necessary to such an issue. Continued moisture at the roots, with a stagnant, moist, cold atmosphere around them, will, from the debility thus occasioned, alone predispose this disease in the leaves, and that will be only accelerated in its manifestation when from such coldness and moisture the plants are hastily transferred, or allowed to remain in an atmosphere as kiln-dried as it was at saturation point before. How often are glasses shut in a mild day in winter, when the exciting influence of a moist atmosphere should have been counteracted with a free current of air; while the same glasses are freely opened in a sunny frosty day, though the air is dry enough to crack and scorch the lips and cheeks of the hardiest beauty. It never strikes many of us that there could be any analogy in such circumstances between our own skin and the leaves of tender plants.

What are the palliatives for, and the preventions necessary against the disease? First, as respects palliatives, there can be little done with large plants that are blooming early. Nothing remains but to remove the worst leaves after they get very unsightly; and as soon as the flowers begin to fade set the plants to dry in the sun, and prune back earlier than usual, thus getting rid at once of all the spotted foliage. This, of course, will be followed only by those who do not consider the disease to be constitutional to the plant. No means that I have heard of will ever make a spotted-leaf green again. Young plants that are not expected to bloom for a month or two may be grown out of the spot. Almost every affected leaf should be removed at once. If the plants are kept rather close during the day, and with air at night, shaded or syringed during sunshine to prevent a too rapid perspiration, young foliage will soon be formed, and unless the smaller leaves left had previously been affected, there will be little manifestation of it on these young plants. A check to healthy growth was the predisposing cause, and an encouragement to free and active growth must now be resorted to, to get rid of its appearance. A highish temperature during the day, a cooler and airier atmosphere at night, will best promote this object. It would be of little use resorting to such a palliative until gentle April had come.

Secondly, preventing the manifestation of the disease may be gathered from what has already been said. In one word, it must be accomplished by attending to all the points of good culture, and especially guarding against sudden extremes of heat and cold, moisture and dryness, and more particularly guarding against a great degree of cold visiting the plants while the roots are soaked with water and the atmosphere not far from the dew point. A number of our friends contrive to grow these plants by keeping them for the most of the winter in cold pits and frames, where they can apply no artificial dry heat; and where they succeed well, as they often do, so much greater is the

honour. From such we have numberless inquiries as respects this very subject, and the advice we would give is simply this: Get your plants potted as early as you can, and use pots small rather than otherwise, and soil light rather than rich, and grow the plants pretty freely until the end of October, when the pots will be pretty well filled with roots. From that time until the end of February be more anxious to keep your plants than to grow them. Give them as much air as possible in mild weather, and as little water at the roots as will just keep the leaves from flagging. If a bright sun should come with mild weather expose your plants as much as possible, but even then be careful of watering overmuch. If the foliage seems distressed, and on examining the soil you find there is still moisture about it, just lessen evaporation from the foliage by dewing the leaves with the syringe, taking care to do it as gently as not to damp the place. If sunny days come attended with a keen, dry, frosty air, give but little air, repeat the dewing process; the leaves will not be weakened in such circumstances by a little heat—sun heat, for short intervals, will not draw the plants, and then, with a little air behind, the beams of the sun will dry and make all comfortable inside. If the plants show extra signs of suffering, prefer a little shade to opening the lights in such circumstances. By following this plan the plants will be stiff and hardy, scarcely larger on the first day of March than they were on the first day of November; but the leaves, though small, will be firm and tough, instead of soft and squashy. By the end of February advantage may be taken of fine days to give the plant an impetus to grow, as long dull weather after March sets in does not often dangerously trouble us. By April the plants may be shifted if desirable, if not, manure water should be given; and shifted or not shifted, that manure water communicated after the flower buds are peeping will give you fine trusses of bloom, accompanied with small healthy foliage, instead of large leaves and small trusses.

I need not mention that similar treatment will be requisite in greenhouses or Pelargonium houses, but the difficulty will be greatly lessened, as the artificial heat enables us to avoid all extremes of temperature and of moisture and dryness in the atmosphere. For instance, in continued muggy weather we have no resource in a cold pit, but a small fire would at once dissipate the mist and promote circulation in the greenhouse. The more care that is taken of the watering pot, however, during winter, the less the likelihood of spot appearing, even though the average temperature should be rather low at times. Keeping Pelargonium plants, those not actually blooming I mean, rather dry in winter and spring is the great main secret of successful culture. The next is giving them all the air possible consistent with an atmosphere not too cold nor too moist. From 43° to 48° may be considered a fair average temperature for such plants at night. The Fancies should not remain long below 45° , though a night or two at a time a little lower will do them no harm. If from some of the most successful exhibitors of these plants, whether Fancies or the old florist kinds, you could learn the real means how they obtained such masses of bloom with just enough of healthy foliage to act as a pleasant counterfoil, they would tell you that their plants got but little water until the flower buds appeared.—F. J. R.

EARLY PEACHES.

THE climate in which Mr. Muir ripened Hale's Early Peach must be much more forcing than Hertfordshire, as the Hale's Early Peach is now (July 29th) ripening and ripe. In 1868 it ripened on the 20th July, but it has not to my knowledge ever ripened before this time. The Alexander would probably ripen about the 4th June in Mr. Muir's house. I should advise him to plant it on a large scale for profit.

Here the Alexander ripens in a cool house about the 1st to 4th July, and is followed by the Early Beatrice, generally from the 6th to the 10th, Early Louise on the 16th, Early Rivers 20th. This is immediately followed by the Hale's Early, nearly a month behind Mr. Muir. The climate of this district must therefore differ in a very pronounced degree, and it is not a little singular that such a variation exists. It is said to be keen and harsh to weak constitutions, possessing, however, a kindly ripening power, giving strength to good men and flavour to good fruits.—T. FRANCIS RIVERS, *Sawbridgeworth*.

HORTICULTURAL SHOWS.

ROYAL SOUTHAMPTON HORTICULTURAL SOCIETY.

AUGUST 1ST AND 3RD.

THE Exhibition of plants, cut flowers, fruits, and vegetables, which was opened on Saturday and continued over Bank Holiday, must be described as one of the best as regards the number and quality of the exhibits and the attendance of visitors which this flourishing and eminently well-managed Society has held for many years. There is no confusion in the directing and staging of exhibits, but the work is conducted with smooth regularity.

The arrangement of the various specimen plants and groups was very effective.

PLANTS.—For the best twelve stove or greenhouse plants, six in bloom, six foliage, distinct, the veteran grower Mr. J. Cypher of Cheltenham was easily first out of three lots staged with grand, even, fresh plants, including well-coloured Crotons Sunset (6 feet through) and Queen Victoria (about the same size), *Phenocoma prolifera* Barnesii (5 feet through and grandly flowered), *Allamanda Hendersoni*, *Dipladenia Brearleyana*, *Dasy-lirion acrotrichum*, *Erica Thompsoni*, *Eucephalartos villosus* (having fronds 10 feet long), and *Stephanotis floribunda*. Mr. Rann, Handcross Park, Crawley, was second, his best plants being a superbly flowered *Statice profusa* and a highly coloured *Croton interruptus* (9 feet over), with *C. Warreni* nearly as large. Mr. Tudgey of Waltham Cross followed, his best plants being *Ixora Williamsi* and *Ericas tricolor superba* and *Wilsoni*. For a like number of plants not open to exhibitors in the preceding class Mr. J. Mould, Pewsey, had the best collection, staging among others good plants of *Allamanda Hendersoni*, *Dipladenia Brearleyana*, *Erica insignis*, *Allamanda nobilis*, *Statice profusa*, *Dracena Goldiana* (good), and *Croton Queen Victoria*. Messrs. Ransom, nurserymen, Hill Lane, Southampton, were a good second, showing good plants of *Statice profusa* and *Ixora Williamsi*; third, Messrs. Oakley and Watling, nurserymen, St. Mary's Road, Southampton. In a class for a like number of plants for gardeners only, Mr. Wills, gardener to Mrs. Pearce, The Firs, Bassett, was a good first, showing among others good plants of *Phenocoma prolifera* Barnesii, *Clerodendron Balfourianum*, *Erica Parmentieriana rosea*, *Bougainvillea glabra*, and *Kalosanthes coccinea*. Mr. N. Blandford, gardener to Mrs. Haselfoot, Moor Hill, West End, Southampton, was a very good second, his best plants being *Clerodendron Balfourianum* and *Allamanda Hendersoni*. Third, Mr. Amys, gardener to the Hon. Mrs. York Elliot, Hamble Cliff, Southampton. The class for nine miscellaneous plants, not less than three to be in flower, brought out some good examples. First, Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham. Second, Mr. Budd, gardener to F. G. Dalgety, Esq., Lockerby Hall, Romsey. Third, Mr. Reynolds, gardener to Colonel the Hon. H. Crichton, Netley Castle, Southampton. Fourth, Mr. Peel, gardener to Miss Todd, Sidford Lodge, Shirley. Mr. Molyneux's collection included finely coloured Crotons variegatus and Queen Victoria, *Alocasia macrorhiza variegata*, having large well-developed blotched leaves; *Chamædorea glaucifolia*, a very graceful plant; *Begonia Emperor* having large fresh flowers, and *Trachelium cœruleum*, a hardy plant not subject to pot culture so much as it deserves to be.

Groups of miscellaneous plants arranged for effect are always strong features at the Southampton shows, and the present ones proved no less attractive or meritorious than those of previous years. First, Mr. Wills; second, Messrs. Ransom; third, Mr. Reynolds, the fourth going to Mr. N. Blandford. There were five groups arranged in the amateurs' section, which compared favourably with them. There was only one entry for a collection of Orchids—Mr. N. Blandford, who was awarded a second prize for a very neat fresh lot of little plants, including *Odontoglossum vexillarium*, *O. Roezlii*, and *Saccolabium Blumei*. Messrs. Oakley & Watling had the best miscellaneous collection of nursery stock, Mrs. Kingsbury the second best, Mr. G. Windebank third, Messrs. Ransom fourth, Mr. W. Rogers, Red Lodge Nursery, receiving an extra prize. Messrs. Elcombe & Son, Romsey, contributed a similar lot in an extra class, which was highly commended.

Mr. Wills was first in the class for six Begonias, distinct, in flower; Mr. Osborne, Wilton House, Southampton, second; Mr. Blandford, third; and Mr. Windebank, Bevis Mount Nursery, Southampton, fourth. There were two lots of four double Begonias staged by Messrs. Wills and Osborn, who obtained the prizes in that order. There were three lots of six stove or greenhouse Ferns staged by Messrs. Wills, Amys, and Peel, who secured the prizes in the order in which their names appear. Mr. Wills' plants of *Davallia divaricata*, *Dicksonia antarctica*, *Nephrolepis davallioides*, *Microlepia hispida*, and *Adiantum farleyense* were even, clear, fresh, and well grown. There was only one entry in the nurserymen's class for four stove or greenhouse Ferns, distinct, and the prize went to Mr. J. Mould for a rather weak lot; and in a similar class for gardeners there were three lots staged: First, Mr. N. Blandford with nicely trained plants of *Lygodium scandens*, *Adiantum cuneatum*, *A. concinnum*, and *Davallia Mooreana*. Second Mr. Budd, whose best plants were *Davallia bullata* and *Dicksonia antarctica*. Third Mr. Reynolds. Mr. Wills had the best six Fuchsias, and Mr. Joy the second best; and Mr. Betteridge had the four best in the corresponding class. For six Pelargoniums, Zonal or Nosegay, Mr. Windebank was first, Mr. Wills second, and Mr. Blandford third. In the corresponding class for six double or semi-double, Messrs. Ransom were first, closely followed by Messrs. Wills and Windebank. Out of two lots of four plants of the description given in the two preceding classes, Mr. Betteridge and Mr. R. West, Northlands, Salisbury, were first and second respectively. In the next class for two Golden Tricolor, two Bronze, one Silver Tricolor, and one Silver-edged Pelargonium, distinct, collections were staged by Messrs. Wills and R. West, who received the awards in that order. Four good lots of six plants of *Celosia pyramidalis* of an excellent strain were staged. Messrs. Amys, Osborne, and Wills secured the awards in that order, all showing well. Three very good pans of fresh well-flowered *Achimenes* in six distinct varieties were staged by Messrs. Osborne, Wills, and Amys, to whom the prizes were awarded. Mr. J. Allen, gardener to J. Baily, Esq., Elmfield, Southampton, was the only exhibitor of eight Gloxinias, and a first prize was deservedly awarded to him. Three lots in six varieties of *Coleus pyramidalis* trained were staged by Messrs. Wills, R. West, and Amys, who secured the prizes in that order; and for a like number of *Selaginellas*, distinct, there were two competitors. First Mr. G. Busby, gardener to F. Williams, Esq., Thornhill Park, Bittern, with good pans of denticulate, variegata, densa, Martensi, formosa, cœsia, and robusta; Mr. Wills being a close second. In the class for six plants suitable for dinner-table decoration, distinct, the prizes went to Messrs. Wills, Budd, Reynolds, and F. Thomson in that order. Mr. Wills was first in the class for a specimen Orchid. There were five specimen foliage plants shown, Mr. Rann being first with a grandly coloured *Croton Youngii* 8 feet over; second Mrs. Kingsbury with *Latania borbonica*, third Mr. Wills with *Croton Queen Victoria*; and out of a like number of specimen flowering plants Mr. Blandford was a good first with *Allamanda Schottii*, second Mr. Osborne with *Anthurium Andre-*

anum (a well-grown plant), third Mr. James Cypher with *Ixora floribunda* nana. Mr. Wills had the best specimen Fuchsia, showing a fine plant of *elegans* 9 feet high and well flowered; second Mr. Osborne; third Mr. W. Joy, Shirley. Mr. Wills was the only exhibitor of hardy Ferns, and he was awarded a first prize. There were three lots of six *Petunias* shown, all being neat well-grown plants. First Mr. Wills, second Mr. Amys, third Mr. Osborne. There were five exhibitors of six plants of *Mignonette*; first Mr. Amys, second Mr. Allen, third Mr. Reynolds, all showing dwarf well-flowered plants. There was only one lot of Cockscombs staged, for which Mr. Osborne obtained a second prize.

Table Decorations.—Four very effectively arranged tables were arranged in competition for the liberal prizes which the Society offered in this class, Grasses being judiciously used with flowers. Mr. J. Cypher was first, followed closely by Mr. J. R. Chard, Floral Depot, Clapham Common, and Miss Bessie Flight, Winchester. Mr. Cypher was also first for the best epergne decoration, in the base of which *Dipladenias*, *Eucharis*, *Lapagerias alba* and *rosea* were used with good effect. Second, Mr. J. F. Chamberlain. Third, Miss Flight. Fourth, Mr. Chard. In the class for a group of three stands or vases, arranged with foliage and flower, for table, Miss Flight and Miss Chamberlain were placed first and second in that order.

Cut Flowers.—For the most tastefully arranged basket of cut flowers (ladies' class), Miss Stratton, Northcroft, Portswood, was first. Second, Mrs. Thomson, Norman Court, Salisbury. Third, Miss Flight. For a basket of wild flowers and Grasses, first, Miss Stratton; second, Miss Flight; third, Miss Hobday, Shirley Road. Mr. Cypher had the most elegant ball bouquet, which, like the second best (Mr. Chard's), was composed of choice Orchids, Tuberoses, *Stephanotis*, *Pancratiums*, and buds of *Maréchal Niel* Rose, &c. Messrs. Keynes, Williams & Co., Salisbury, were a good third. Mr. Chard had the best bridal bouquet, which evinced an artistic arrangement of choice flowers, as also did the second, third, and fourth-prize ones, shown respectively by Mr. Cypher, Messrs. Keynes, Williams & Co., and Mr. Chas. Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury. Mr. Chard was placed first for six buttonhole bouquets, Mr. E. Chamberlain second, and Miss Hobday third. For twelve bunches of cut flowers, distinct, Mr. Budd was put first, Mr. Thomson second, and Mr. Amys third. For twelve varieties of hardy herbaceous cut flowers Mr. Molyneux was a good first with an even fresh lot; Mr. Guillaume, Oriental Place, Southampton, second; and Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, third. Mr. Molyneux was again first in the class for twelve trusses of *Pelargoniums*, distinct, second Mr. Warden, third Mr. Windebank; and in the corresponding class for a like number of trusses of double or semi-double, distinct, Mr. Molyneux took first honours, and Mr. Windebank second. Mr. Fiford secured first place for twelve Dahlias, distinct, second Mr. Windebank, third Mr. West. In the open class for Roses there were only two contestants—Messrs. Keynes, Williams & Co., and Messrs. Cross & Steir, Salisbury, who took the prizes in that order; and in the next class for twelve blooms Mr. Warden was easily first, showing fresh even blooms. Second, Mr. Flight, Twyford, Winchester. Third, Mr. West.

FRUIT.—Fruit, according to the opinion of the Judges—past and present members of the Fruit Committee of the Royal Horticultural Society of London—and the writer, was shown better as regards quantity and quality than at any previous exhibition of this Show or in London, during the present year. These remarks apply more directly to the collections and three and single-bunch classes of Grapes. There were three very good collections of eight kinds of fruit staged, the first (Mr. F. Thomson's) and second (Mr. H. W. Ward's, Longford Castle, Salisbury), being very close in point of merit. Mr. Budd was third. The first-prize lot consisted of good bunches of Muscat of Alexandria Grapes, but rather green, and Madresfield Court Grapes, Elruge Nectarine, Barrington Peach, Moor Park Apricot, White Marseilles Figs, Blenheim Orange Melon, and Smooth Cayenne Pine, all good. Mr. Ward's best dishes were his Black Hamburg, Lord Napier Nectarine, and a fruit of Captain Larks Melon, weighing 11½ lbs. Mr. Budd's strongest point was his Muscat of Alexandria Grapes, good, well-coloured bunches. In the class for six kinds (Pine excluded) there was only one entry—Mr. Molyneux, who was deservedly awarded first place for good Elruge Nectarines, Royal George Peach, Madresfield Court (good), and Muscat of Alexandria Grapes, Golden Perfection Melon, and Morello Cherries, a good even lot, which it would be hard to beat.

Grapes.—In the class for three bunches of black Grapes seven good lots were staged. First Mr. H. W. Ward with Madresfield Court, second Mr. Warden with good well-finished medium-sized bunches of Black Hamburg, Mr. Molyneux being a close third with the same variety, and Mr. Thomson a good fourth with fairly well finished Madresfield Court. In the corresponding class for three bunches of white Mr. Budd was first with Muscat of Alexandria, Mr. Molyneux being a good second, and Mr. Thomson third with rather green bunches; and Mr. Halls, East Cowes Castle, Isle of Wight, was fourth. There were only four competitors in this class, all showing Muscat of Alexandria. In the two-bunch classes (white and black) there were five entries in each. First Mr. Axford with Black Hamburg; second Mr. Allan; third Mr. Cox, Corhampton House Gardens, Bishops Waltham, with Madresfield Court; fourth Mr. Pope. White.—First Mr. Pope with good even bunches of Muscat of Alexandria, second Mr. Osborne with the same variety, third Mr. Axford, fourth Mr. Amys with Foster's Seedling. There were seven single bunches of black Grapes shown and six lots of white. In the former class Mr. Ward was first with Madresfield Court, Mr. Molyneux second with same variety, Mr. Allen third, and Mr. Saunders fourth. In the white class Mr. Budd was first with a neat well coloured bunch of Mrs. Pearson, second Mr. Thomson with Muscat of Alexandria, wanting in colour; third Mr. Saunders; fourth Mr. Ward with the same varieties, also deficient in colour. There were only two Pine Apples shown, and for which the exhibitors, Messrs. Ward and Thomson, were awarded second and third prizes in that order.

Mr. Saunders and Mr. Ward were first and second respectively with Blenheim Orange Melon, the third going to Mr. J. Axford, gardener to C. M. Shipley, Esq., Twyford Moors, Winchester. In the corresponding class for a green-fleshed variety Mr. Thomson was first with Victory of Bath; Mr. Saunders second with Eastnor Castle; Mr. W. Cotton, Hamilton Nursery, third with Green Hall Gems; and Mr. Ward fourth with Cox's Golden Gem. Peaches.—First Mr. Windebank with even highly coloured

fruits of Chancellor, second Mr. Thomson with Grosse Mignonne, third Mr. Cotton. Five dishes of good Nectarines were staged. First Mr. W. Cotton with Lord Napier, second Mr. Budd with Violette Hâtive, and third Mr. Ward. The classes for Apples and other bary fruits were fairly well contested.

VEGETABLES.—Mr. Richards, gardener to the Earl of Normanton, Somerley House, Ringwood, was a good first out of three collections of vegetables, twelve distinct kinds, staged in admirable condition and with good taste; second Mr. Saunders, third Mr. Pope. Mr. Richards' collection included grand samples of White Elephant Onion, Canadian Wonder Bean, Reading Russet, International Kidney Potatoes, &c. Mr. Saunders' best dishes were his Cream Marrow, International Kidney Potatoes, and Tomatoes. There were ten collections of nine kinds staged, Mr. Molyneux being easily first with a fine clean even lot; Mr. Allen second, Mr. Axford third, and Mr. Busby fourth. In the class for eight varieties of Potatoes, four kidney and four round, Mr. R. West was first, Mr. Saunders second, Mr. E. Axford third, and Mr. Ward fourth. For twelve spring-sown Onions Mr. Allen was first, Mr. Ward second, Mr. Busby third, and Mr. Saunders fourth; and in the class for a like number of autumn-sown bulbs Mr. Richards was a good first with Giant Rocca, Mr. Reynolds second, and Mr. Allen third. Mr. Molyneux was first for a neat, fresh, even brace of Telegraph Cucumbers, second Mr. Richards with Purley Park, third Mr. Amys with Telegraph, fourth Mr. Ward with Purley Park. Cottagers' produce was admirably represented for the season.

LIVERPOOL.

AUGUST 1ST.

THE annual exhibitions of the Liverpool Horticultural Association rank amongst the best that are held in the kingdom, and the one now to be noticed was a credit to the Association and the exhibitors. Nothing approaching a full and detailed report can be given, all that is practicable being to describe the character of the Show and to particularise the leading exhibits. The schedule was divided into four sections—plants, cut flowers, vegetables, and fruit, and contained ninety-eight classes, nearly all of them open, the prizes being very good throughout, and the competition in many classes exceedingly keen.

PLANTS.—In the premier class (twelve stove and greenhouse plants, six foliage and six flowering,) two magnificent collections were staged, as may be imagined when the ubiquitous and formidable Mr. Cypher of Cheltenham was fairly defeated by Mr. W. Mease, gardener to C. W. Newmann, Esq., Wyncote, Allerton. This exhibitor, to whom it is impossible to accord too much praise, staged amongst others perhaps the finest Crotons that have been seen in this country—namely, Weismanni and Queen Victoria, quite 8 feet high and the same in diameter, Disraeli being nearly as large, and all in superb condition. His other foliage plants were a huge *Latania borbonica*, a remarkably fine *Pritchardia pacifica*, and a very good *Gleichenia Mendellii*. The flowering plants were less striking—in fact, some rather weak. They comprised *Ericas* *Ne Plus Ultra* and *amula* (4 feet in diameter and both good), a *Clerodendron*, 5 feet in diameter, with a *Stephanotis*, *Bougainvillea*, and *Allamanda*. Mr. Cypher was stronger in flowering plants, yet nevertheless was quite overweighed. He, however, turned the tables on his rival in the class for six plants in bloom with fresh and beautiful examples of *Erica ampullacea* Barnesi, *Ixora regina*, *Allamanda nobilis*, a *Dipladenia*, and *Phenocoma*. Mr. Mease's second-prize plants were larger, but some of them a week too young—the flowers not fully expanded. In the local class for ten plants the first prize was well won by Mr. R. A. Cox, gardener to H. Watts, Esq., Glen Hall, Wavertree, who is evidently a first-class cultivator. He staged in this class *Ixora Dixiana*, an oval of 5 feet high, with two hundred trusses of brilliant flowers; *I. coccinea superba* and *I. regina*, with very fine trusses; *Allamanda Hendersoni*, profusely flowered; and *Statice Butcheri*, his foliage plants being also very good. Mr. Jellico, gardener to F. G. Gossage, Esq., Woolton, was second with a very good collection. In the class for six plants in pots not exceeding 12 inches in diameter Mr. Cox was again in the foremost place with admirable examples of culture; also for four plants. Mr. Mease staged the best single specimen stove plant, a vigorously grown *Anthurium Andreanum*, followed by Messrs. Butler, Moreno House, Aigburth; and Cubbon, gardener to Mrs. Johnson, Woolton. The best greenhouse plant was staged by Mr. Gordon, gardener to James Cunningham, Esq., Linton Lodge, Aigburth—*Kalosanthes coccinea*, a magnificent hotquet of flowers, 5 to 6 feet in diameter. Mr. Mease was the premier exhibitor in the class for four *Ericas* with good examples of *Parmentieriana rosea*, *amula*, *metulæflora*, and *profusa*.

Fine-foliage plants were wonderfully good. In the open class for eight plants Mr. Mease secured the first position, staging among others *Croton Countess*, somewhat resembling *Jobannia*, and very beautiful; *C. Prince of Wales*, handsome; *C. Morti*, grand. Mr. Cubbon was an excellent second. In the local class for six plants Mr. Jellico was the leading exhibitor, his group containing a remarkably well-grown plant of *Maranta Veitchii*; Mr. Foster, gardener to J. Brancker, Esq., Wavertree, second with creditable plants. Mr. Cubbon was first with Palms. Ferns were extremely well exhibited. In the open class for eight plants Mr. G. Rhodes, gardener to Mr. Horsfall, Grassendale, secured the first prize, *Davallia bullata* being particularly good, Mr. Cox following closely with neat examples. Still finer were the specimens staged in the local class for six plants, in which Mr. Gowan was first with *Davallia Mooreana*, 8 feet in diameter; *Goniophlebium subauriculatum*, *Adiantum farleyense*, fresh and vigorous; *Gleichenia spelunca*, *Pteris scaberula*, excellent; and *Adiantum Veitchii*. Mr. Cubbon was a close second, his *Microlepia hirta cristata* being of great merit, and all the rest good. Mr. Barber, St. Michael's Hamlet, Aigburth, was the foremost exhibitor in the class for six hardy Ferns with *Atabyrium Filix-femina*, *A. F. Victoria*, *Lastrea Filix-mas cristata*, *Onoclea sensibilis*, *Polystichum angulare*, and *Scolopendrium cristatum*, the remaining prizes being adjudged to Messrs. Foster and Cubbon, both exhibiting well. Mr. Foster exhibited *Lycopods*.

Mr. Mease staged very fine Tuberous Begonias, being first in the class for these brilliant plants, also for *Caladiums*, Mr. Butler for Fuchsias, 7 to 8 feet high and well furnished; Mr. Gowan and Messrs. Fleming & Son, Maghull, Zonal Pelargoniums, and they had also a special prize for pyramid Ivy-leaved varieties 8 feet high. The best double Petunias were exhibited

by Mr. Rhodes, and singles by Mr. Hurst, Mr. Manley receiving the chief prize for *Liliums*.

Orchids were not numerous, but those staged were very good, and that successful exhibitor, Mr. W. Mease, was to the fore for four plants with *Thunia Marshalliana*, *Cypripedium Lawrencianum*, *Saccolabium Blumei majus*, and *Cattleya Gaskelliana*, Mr. J. Cypher being a good second. For one plant Mr. R. Cubbon was first with *Cattleya Leopoldii* with one very fine spike, Mr. T. Foster second, and Mr. J. Edwards, gardener to Shadford Walker, Esq., Rodney Street.

Table plants were shown in the usual good style as generally seen at the exhibitions of this Society. For six plants Mr. T. Fleetwood, gardener to T. F. Harrison, Esq., Holmfield, Aigburth, was first with neat, clean, well-grown examples of *Cocos Weddelliana*, *Dracæna* Mrs. Bause, *D. gracilis*, *Pandanus Veitchii*, *Aralia Veitchii*, and *Croton aigburthensis*. Mr. J. Agnew, gardener to Mrs. Watts, Grassendale Park, Woolton, second; and Mr. Cubbon third. The prizewinners for one Palm were Messrs. J. Hurst, G. Butler, and R. Cubbon. For one Tree Fern Messrs. R. Cubbon, J. Lowndes, and G. Butler. *Achimenes* were moderately good, and the most successful competitors were Messrs. T. Gowan, W. Mease, and J. Hurst.

Groups arranged for effect were wonderfully effective and attracted considerable attention. In the open class Messrs. R. P. Ker & Sons were deservedly accorded the first position for a most tastefully arranged and imposing circular group covering a space of 250 square feet. Mr. Francis, Green Bank, Wavertree, was placed second, being the only other competitor. In the amateurs' class, circular group to cover a space of 150 square feet, Mr. W. Mease was well first with a light and very pretty arrangement, Mr. A. R. Cox being a good second, his arrangement being less light and rather too green. Mr. J. Jellico was awarded the remaining prize.

CUT FLOWERS.—The display of these were very large and the quality first-class, especially the Roses, which were not only numerous but really superb—decidedly better than has before been the case at this Society's exhibition. In the class for forty-eight distinct Roses no less than seven collections were staged, and the work of judging was very difficult, as may be gathered from the fact that none of the exhibits contained a faulty bloom. Messrs. Harkness & Sons, nurserymen, Bedale, secured the premier position by two points only; the blooms being slightly smaller in this than in the second collection staged by Messrs. J. Cocker & Sons, Sunny Park Nursery, Aberdeen, but were a trifle brighter. Mr. A. Crosbie, gardener to T. B. Hall, Esq., Larchwood, Rock Ferry, and Messrs. R. Mack & Sons, Catterick Bridge, Yorkshire, were placed equal third, both having staged remarkably fine collections. The first lot contained very good *Le Havre*, *Madame Hausman*, *Tea Madame Hippolyte Jamain*, *Prince Arthur*, *Reynolds Hole*, *Emile Haushurg*, *Beauty of Waltham*, *Alfred Colomb*, *Mons. E. Y. Teas*, *Sultan of Zanzibar*, *Louis Van Houtte*, *Comtesse de Serenye*, *John Bright*, *Marie Verdier*, *Duke of Teck*, *Dr. Andry*, and *Duke of Connaught*. All the dark blooms in this collection were the most prominent, while the second one contained a larger quantity of good light flowers. Four collections were staged in the class for twelve Tea, Hybrid Tea, or Noisette Roses. Mr. T. B. Hall took the lead with nice blooms of *Anna Ollivier*, *Lady Mary Fitzwilliam*, *Souvenir d'un Ami*, *Souvenir d'Elise*, *Souvenir de Madame Pernet*, *Etoile de Lyon*, and *Madame Lambert*. Messrs. Harkness & Sons and Perkins & Sons, Coventry, were second and third respectively. In the amateurs' class for twenty-four blooms Mr. T. B. Hall took the lead with some superb blooms, followed closely by Mr. R. G. Waterman, gardener to A. Tate, Esq., Roseleigh, Woolton. For twelve blooms the prizewinners were Messrs. T. M. Green, A. Eaton, and W. E. Hall. For twelve blooms, dark variety, no less than nine lots were staged, and every one worthy of an award. Messrs. R. Mack & Sons were, however, placed first with *Alfred Colomb*, remarkably good; second, Mr. May, Bedale, with the same variety, also very fine; and third Messrs. A. Dickson and Sons, Newtownards, Co. Down, also staging the same variety. For the same number of blooms for one light variety Messrs. J. Cocker & Sons were first with *Merveille de Lyon*, very good. Messrs. Mack & Sons followed with *Baroness Rothschild*; Messrs. A. Dickson & Sons the remaining prize with *La France*. Seven lots were staged in this class. For the most tastefully arranged box of Roses Mr. R. G. Waterman was placed first, being lighter and more effectively arranged than the second, staged by Mr. T. B. Hall, which contained the best blooms. Probably the brightest scarlet bloom, although small, in the Exhibition was *Eclair*, shown by Messrs. Perkins & Sons in their collection of forty-eight. Messrs. A. Dickson & Sons staged blooms of a seedling Tea variety named *Miss Ethel Brownlow*, evidently a seedling between *Madame Lambert* and *Catherine Mermet*, which the Judges considered worthy of being again seen with more particulars respecting its habit and vigour. For the best collection of stove and greenhouse cut flowers, eighteen varieties, Mr. W. Mease was well to the front with a superb collection, consisting of *Allamanda grandiflora*, *A. Hendersoni*, *Anthurium Schertzerianum*, *A. Ferrierense* (very large spathes), *Cypripedium Veitchii*, *Gloriosa superba*, *Oncidium Lanceanum*, *Kalosanthes coccinea*, *Ixora Dixiana*, *I. Williamsi*, *Disa grandiflora*, and bunches of *Dipladenia amabilis*, *Stephanotis*, *Begonia Chesterfield*, and *Ball of Fire*. Mr. W. Bustard was placed second. For twelve varieties the prizetakers were Mr. A. R. Cox and J. Vaughan, gardener to R. Callart, Esq. The collections of herbaceous cut flowers were also very fine, especially the first collections in the class for eighteen varieties staged by Mr. W. Mease, and contained the following:—*Gladiolus brechleyensis*, *Vicia sylvatica*, *Spiræa palmata*, *Agrostemma flos-Jovis*, *A. The Queen*, *Spiræa Ulmaria fl.-pl.*, *Phlox Mrs. Downie*, *P. Venus*, *Campanula Hendersoni*, *Delphinium mollissimum*, *Lilium testaceum*, *L. auratum*, *L. candidum*, *Helenium pumilum*, *Telekia speciosissima*, *Achillea multifolia*, *Geranium sylvaticum*, *Geum coccineum*, *Dianthus Napoleon III.*, *Pentstemon Sir William Forbes*, and *Lychnis vespertina plena*. Messrs. J. Dickson and Sons, Newton Nurseries, Chester, second; and Mr. W. Bustard third. For twelve varieties Messrs. G. Eaton, R. G. Waterman, and A. Crosbie were the prizetakers in the order named. Pansies, Carnations, Dahlias were very well staged, but space forbids the enumeration of the prizewinners in the classes devoted to these cut flowers. Bouquets were remarkably good. For two Mr. J. Cypher took the lead with a handsome pair, followed by Messrs. Perkins & Sons and G. Downes, Lodge Lane, Liverpool. For one Mr. A. Crosbie was placed first; Mr. T. Robinson, Mossley Hill, second; and

Mr. H. Mercer third. The exhibits in the class for one vase or epergne were not extra good, and need no special mention.

Miscellaneous exhibits were numerous. The Horticultural Company (John Cowan), Garston, contributed largely to the effective display of one tent by staging two large circular groups of Tea Roses in bloom in 5-inch pots, and a similar group of varieties of *Lilium lancifolium*, while two others were composed of a general assortment of foliage plants, such as Crotons and Ferns, with large *Dendrobium Dalhousiana* and *D. Parishii* profusely flowered, arranged in the centre. A collection of *Petunias* and pot Vines were also on view. Messrs. R. P. Ker & Sons staged an imposing assortment of flowering and foliage plants, which included many new and rare kinds. Messrs. F. and A. Dickson & Sons also contributed a similar collection of plants; Messrs. Perkins & Sons, Coventry, plants of *Pelargonium Volonté Nationale alba*; and Mr. J. R. Pearson, Chilwell, Nottingham, a collection of Zonal *Pelargoniums*. The Horticultural Company also staged *Lagerstremia indica* in small pots, well bloomed, with pretty neat small pink flowers. Messrs. R. P. Ker & Sons were awarded certificates of merit for *Davallia fœniculosa*, *Vriesia hieroglyphica*, *Adiantum Caledoniæ*, and *Plumaria odoratissima* (Frangipani), very rarely seen in flower, and produces a sweet white *Tabernamontana*-like flower.

FRUIT.

The display of fruit was remarkably good, especially the collections in the open classes and those devoted to Grapes, while there was a slight falling off in the number of Peaches and Nectarines. In the open class for eight dishes, distinct, Mr. J. Edwards, gardener to the Duke of St. Albans, Bestwood, Nottingham, took the lead with examples of Muscat of Alexandria and Black Hamburgh Grapes, good in every respect except size of berry, being rather small; Bellegarde Peaches remarkably fine, Elruge Nectarine good, Brown Turkey Figs, Cherries, a good Queen Pine, and a scarlet Premier Melon. Mr. J. Ward, gardener to T. H. Oakes, Esq., Riddings House, Alfreton, was the only other competitor in this class, and was deservedly placed second, having good Black Hamburgh Grapes, Cherries, Bellegarde Peaches, Transparent Gage Plums, and a good Melon, the same variety as in the previous collection. In the class for six dishes, Pine excluded, six collections were staged, Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Liverpool, took the lead with good Black Hamburgh and fair Muscat of Alexandria Grapes, Bellegarde Peaches good, Pine Apple Nectarine, very fine; Negro Largo Figs, and a fair Melon. Mr. J. Edwards was a close second, having remarkably large fruits of Chancellor Peaches, Elruge Nectarines, and Best of All Melon; Mr. W. Mease being third with good Grapes, Muscats being scarcely ripe, large Brown Turkey Figs, and a very fine netted fruit of Hero of Lockinge Melon. Pines were not numerous, and the fruits staged were scarcely up to the average. The finest in the class for two were staged by Mr. J. Bennett, gardener to the Hon. C. H. Wynne, Rug Corwen, North Wales; Mr. M. Hartwell, gardener to Lord Newborough, being second. For one fruit the first-mentioned exhibitor was again first, and Mr. J. Edmonds second.

Grapes on the whole were wonderfully good, being large in the bunch, well coloured, and with berries of a remarkably large size. Six or seven collections were staged in the class for four bunches, two white and two black varieties. Mr. C. Young, gardener to J. Evans, Esq., Hurst House, Prescott, gained the premier award with large bunches of Muscat of Alexandria, Madresfield Court, Black Hamburgh, and Foster's Seedling. Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, was placed second, and had good Black Hamburgh, Madresfield Court, and Buckland Sweetwater. Mr. J. Edmonds was awarded the remaining prize, having good Trebbiano. For two bunches of Black Hamburghs thirteen lots were staged for competition and the successful exhibitor was Mr. J. Barker, gardener to Alderman Rayner, Rock Ferry, who staged faultless examples. Mr. R. Brownbill, gardener to J. Hargraves, Esq., Ravenswood, Rock Ferry, and Mr. J. Hurst, gardener to W. B. Bowering, Esq., Beechwood, Aighurth, were the remaining prizewinners, both staging very fine examples. For two bunches of Muscat of Alexandria Grapes Mr. G. Middleton took the lead, followed by Mr. T. Dilworth, gardener to G. Holland, Esq., Liscard, New Brighton, and Mr. T. Jones, gardener to W. C. Clarke, Esq., Orleans House, Sefton Park, the bunches in each case being good and throughout the various exhibits, but scarcely ripe. For two bunches of black Grapes (Black Hamburghs excluded) several collections were staged. Mr. J. Barker was well first with large finely finished examples of Madresfield Court; Mr. J. Ward second with the same variety, and Mr. C. Young third, also showing the same kind. For two bunches of whites (Muscats excluded) the Duke of Buccleuch was the variety that gained the first, second, and third positions, and was very good in each instance, the exhibitors being Messrs. J. Bennett; J. Lowndes, gardener to S. S. Parker, Esq., Sudley Road, Aighurth; and Mr. J. Wallis, gardener to Rev. Walter Sneyd, Keele Hall, Staffordshire.

Peaches and Nectarines were very good, the fruit being extra large in several instances, but was not exhibited in such large numbers as has been the case in previous exhibitions. For one dish of Peaches Mr. W. Hannagan, gardener to R. C. Naylor, Esq., Hooton Hall, was first with wonderfully fine fruits of Royal George; Mr. T. Elsworthy second with good Bellegarde; and Mr. Ward third with the same variety as the first-mentioned competitor. For one dish, from which competitors in the previous class were excluded, Mr. J. Edmonds was well first with Chancellor in good condition; Mr. J. Storey, gardener to Sir Thomas Earle, Allerton Towers, second with Grosse Mignonne, good; and Mr. Burgess, gardener to H. R. Marsden, Esq., Errington Lodge, Aighurth, third with Early Alhert. For one dish of Nectarines Mr. J. Bennett was placed first with *Violette Hâtive*; Mr. T. Elsworthy second with Elruge, third Mr. J. Wallis. In the corresponding class for one dish, exhibitors in the previous one being excluded, Mr. J. Hurst was first with Pine Apple; Mr. J. Edmonds and Mr. C. Copple, gardener to T. S. Rogerson, Esq., second and third, the former staging Elruge.

For the six prizes offered for Melons the competition was very good, and fruits were staged better than any we have seen this year. For one green-fleshed variety Mr. G. Rhodes was first with The Queen; Mr. J. Stevenson, The Hazels, Prescott, second with Hero of Lockinge; and Mr. T. Elsworthy third with Dickinson's Exquisite. For one scarlet-fleshed kind Mr. T. Ferguson, gardener to Mrs. Patterson, Rock Ferry, took the lead with Scarlet Perfection; Messrs. S. Lyon and M. Hartwell being second and third

respectively. For Strawberries Mr. T. Foster was the principal prizewinner with British Queen, while Mr. T. Elsworthy took the lead with Cherries. For six dishes of hardy fruit, which was very good, and the prizes offered were well contested, Mr. W. Hannagan was placed second, and Mr. J. Wallis third. The first-prize collection contained no prize card, but we heard it belonged to Mr. J. Lambert. Prizes were offered by Mr. John Webster, horticultural builder, Wavertree, for the best basket of miscellaneous fruit arranged for effect, Pines excluded. Only two exhibitors contested for the prizes offered, Mr. W. Mease being placed first with an effectively arranged basket, and Mr. T. Elsworthy second with better fruit but not so tastefully arranged.

VEGETABLES

Were staged in quantity, and on the whole were of first-class quality; very rarely, if ever, do we remember having seen them in better condition at this Society's Exhibition. For a collection of twelve distinct varieties four or five competitors staged for the prizes offered. Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was deservedly placed first with very fine examples of Ayton Castle Leeks, Culverwell's Green Marrow Peas, Early London Cauliflowers, Silver Ball Onions, Nutting's Beet, Snowball Turnips, James's Intermediate Carrots, Telegraph Cucumbers, Trophy Tomatoes (good), Major Clarke's Celery, and Sutton's Prizetaker Potatoes. Mr. G. Conder, gardener to W. Chambers, Esq., second; and Mr. J. Oldfield, gardener to R. M. Ruddulph, Esq., Chirk Castle, Ruabon, third. In the corresponding class for the same number of varieties, open only to exhibitors within ten miles of Liverpool, Mr. W. Mease was accorded the premier position with Turnip-rooted Beet, Jersey Lily Turnips, Carters' Solid Ivory Celery, King of the Cauliflowers, International Potatoes, Moore's Cream Marrow, Globe Artichokes, Perfection Tomatoes, New Crimson Vesuvius Onion, Oshorn's Forcing Beans, and Duke of Albany Peas. Mr. J. Rainford and Mr. J. Storey being placed second and third, six collections being staged. For a collection of six varieties, from which competitors in the two previous

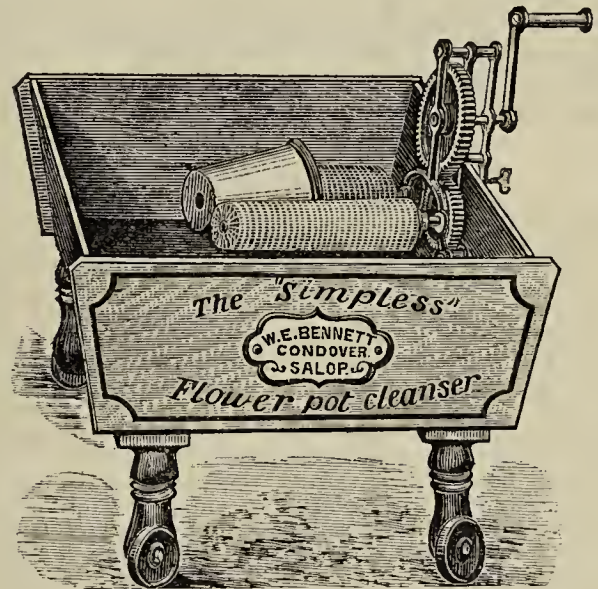


Fig. 21.

classes were excluded, ten collections were staged, Mr. A. R. Cox was placed first, Mr. J. Burgess second, and Mr. J. Elsworthy third. For six dishes of Peas the prizewinners were Messrs. J. Stevenson and J. Edmonds. For three dishes Messrs. W. Hosker, R. Haynan, and J. Rainford. For two dishes Mr. J. Bounds was the principal prizewinner. Potatoes were very fine, clean, and of a fair size. For six dishes Mr. W. Mease was placed first with Ashleaf Fluke, Reading Russet, Lady Truscott, Cosmopolitan, International, and Vicar of Laleham; Mr. S. T. Turner, Woodslee, Bromborough, and Mr. J. Storey being second and third. For four dishes the successful competitors were Messrs. J. Rainford and W. Hosker. For two Mr. J. Lowndes took the lead. Tomatoes were wonderfully fine, large and shapely, and the competition good. In the class for three dishes Mr. G. Middleton was well ahead with grand examples of Dedham Favourite, Stamfordian, and Hathaway's Excelsior; Mr. T. Foster being a good second, and Mr. J. Lambert third. For one dish Mr. G. Middleton took the lead with Dedham Favourite, followed by the same exhibitors as in the previous class, and in the same order. Cucumbers were of fair quality, and the winners were Messrs. M. Hartwell, J. Lambert, and J. Davies, Bromborough Hall.

IMPLEMENTS of various kinds were largely displayed. Mr. J. Bramham, 104, Dale Street, Liverpool, exhibited his Allerton Priory hoiler, a quantity of wirework, water-cans, &c., a certificate of merit being awarded for the former, and a similar award to Messrs. F. & J. Mee, Wood Street. Gold medal to Messrs. Foster & Pearson for a curvilinear-roofed conservatory with patent ventilating gear. A certificate of merit was awarded Mr. J. Webster, Wavertree, for houses and a span-roofed frame ventilated on an improved system. Certificates of merit were also awarded to F. T. Drummond, Bridge North, Salop, for his turf-cutting machine, and Mr. W. E. Bennett, Thurston, Leyland, Preston, for Rose ligatures and a pot-washing machine that should be in all gardens where pots in large quantities require washing (see fig. 21). Messrs. W. Lowe & Sons, Edinburgh, also exhibited span-roofed greenhouses; Messrs. W. Glassey & Co., Victoria Street, Liverpool, a large display of all kinds of garden seats and chairs; Mr. P. B. Harkin, Dutton Street, Bamboo canes, Orchid baskets, and large teak tubs of various sizes. The Horticultural Company also contributed greenhouses and boilers to the general display.

HAWKHURST.

THE fourteenth annual Exhibition of the Hawkhurst Horticultural Society was recently held in Fowler's Park, and was in every respect a

decided success. The district comprised is situated principally in the fertile Weald of Kent, and the Society is well supported by the gentry who dwell in this very beautiful neighbourhood. At the Hawkhurst shows fruits and vegetables are invariably shown in large quantities and fine quality, the cottagers' productions being surprisingly good. Plants in variety are also well represented, and many of them would find favour with the judges at still more pretentious shows. The best stove and greenhouse flowering plants were shown by Mr. C. Nicholls, gardener to J. C. Fisher, Esq., and this experienced grower was also first for *Ericas* and other plants. Mr. J. Gilmour, gardener to the Right Hon. J. G. Goschen, M.P., was remarkably successful in various classes, notably for fine-foliage plants, *Fuchsias*, *Caladiums*, *Lycopodiums*, *Balsams*, *Coleus*, group of plants, &c. Mr. J. Knapp, gardener to H. Mynard, Esq., took the lead with Zonal *Pelargoniums*, *Cockscombs*, *Gloxinias*, fine-foliage and flowering plants, &c.; and other prominent exhibitors of plants were Messrs. G. Rummery, gardener to Sir E. P. Hardings, Bart.; F. Hodgkin, gardener to A. Oakes, Esq.; and L. Barnes, gardener to Lieut.-Col. Herschel. The same exhibitors were also the principal prizetakers for cut flowers.

The best collection of fruit was staged by Mr. H. Curtis, gardener to the Hon. J. Gathorne Hardy, M.P.; Mr. L. Barnes being second, and Mr. G. Rummery third. The best collection of hardy fruit was exhibited by Mr. J. Iggulden, gardener to the Rev. Canon Jeffreys, who was also first in both classes for Melons, the remaining prizes going to Messrs. Gilmour, J. Austen (gardener to Dr. W. Harmer), F. Hodgkin, and J. Rummery. Black Grapes were well shown by Messrs. B. Reeks (gardener to Mrs. Robert Watson Smith), L. Barnes, and J. Knapp; and white Grapes by Messrs. G. Catt, gardener to G. French, Esq.; L. Barnes, and G. Rummery, the prizes in each instance going in the order the names are placed.

The most successful in the different classes for vegetables, including those in which the prizes were provided by Messrs. Sutton & Sons, James Carter & Co., and Daniels Bros. were Messrs. Gilmour (who had three firsts), G. Rummery, L. Barnes, H. Lambert (gardener to Captain Swiney), J. Iggulden, J. Knapp, and W. H. Oxford, gardener to Col. W. H. Money-penny, the exhibits being generally most praiseworthy.

Altogether the Society has every reason to feel proud of the marked success attending its efforts.

THE SPLITTING OF FRUIT.

WHEN I last wrote under this heading (page 62) I referred to a letter of Mr. Henderson (page 526 last vol.) that I considered eminently worthy of consideration, but for the reason stated I could not reply to at the time. Your correspondent has not waited for the completion of my letter, but has thrown a sort of red herring communication into the controversy, and has, in my opinion, weakened his position very considerably. Mr. Henderson can, I perceive, move with circumstances. When I alluded immersed Fern fronds continuing fresh with their stalks in the air I was met by the rejoinder that this was because their juices could not escape by evaporation, as if moisture could not and did not pass through the leaves. When, in reply, I asked that withering Pansy flowers, also Rose leaves and buds, be immersed to test the matter, as I had tested it, I am met with the remark that he did not for a moment think that anything he had said could imply a denial of the action of endosmose "through the leaves and petals of flowers and vegetables." Way, then, did he seek to attribute the freshness of the Ferns simply to an arrest of evaporation? But let that pass, I am quite content to see him advancing so far as to make the important admission just quoted. He now admits the action of endosmose on everything but fruit.

I think I may fairly say that Mr. Henderson has invented a new philosophy—namely, of partiality in the applicability of a natural law, for the principle of osmosis is as much a natural law as is that of gravitation, and is that partial? I am convinced that the new doctrine is fallacious and the position of its author untenable.

Your correspondent also entertains peculiar views on vegetable physiology. He admits that "endosmose acts direct through animal and vegetable membranes," but not through the skins of Grapes, because these vegetable membranes are not porous. Not porous! How, then, does moisture escape through them by evaporation until they become raisins? If Mr. Henderson has some sensitive scales, delicate weights, and partially shrivelled Grapes, and will immerse the fruit after weighing it carefully, in water for a few hours, then weigh it again, he will find it has distinctly gained weight and plumpness by the transmission of the fluid through the "vegetable membrane;" and further, he will find if the Grapes are ripe and thin-skinned, they will very quickly split, so will ripe delicate-skinned Gooseberries.

I am taken to task by saying that a high temperature is not requisite for setting up the action of endosmose in fruit to the extent of causing it to split, or why did I experiment with Grapes in a close damp box in a warm house? That is almost like catching at a straw. If that was all the evidence I have I should certainly not have written a line on this subject; it was a mere trifling experiment, but just worth mentioning. I have seen a hundred times more Grapes split in a damp unheated vinery in October, the roots of the Vines inside, no water given to them for months, the laterals allowed to grow in their own way to "take the sap from the fruit." Yet the crop was ruined; but that was of no consequence, it was an experimental house, and nothing else, and the Grapes split by the transmission of moisture through the skin. Another experiment I am acquainted with on a still larger scale, and the Vines all grown in pots, the soil purposely kept dry so that the leaves flagged, but the air damp, and the splitting was complete, and shanking too, but the damp air alone did not cause the shanking. Delicate-skinned Grapes will crack, and no one can prevent it if they are surrounded with damp air at a critical time. So will some varieties of Melons whether on or off the plants. Why does

damp air cause, say, the Midresfield Court Grapes to crack, as it undoubtedly does, if the moisture does not pass through the skin?

I am asked how I have arrived at the conclusion that ten times more moisture was conveyed by the roots to the Grapes that were hanging on the Vines at Hutton Hall than passed from the atmosphere through the stems of the bunches in the Manchester tent.

I know Mr. McIndoe's Grapes very well, and am not ignorant of his method of culture, but have had no communication whatever with him on this subject. As knowing more than either myself or my critic on the point in question I am willing to submit to Mr. McIndoe's decision as to whether I over-stated the case or not. In the meantime I emphasise my assertion.

Lastly, it is suggested by Mr. Henderson that I am "under the impression that I am bringing to light a principle of whose existence gardeners had been quite unaware." If he will turn to page 371 of the last volume (May 7th), he may observe that I quoted the "principle" from a scientific work there named, and of which I gave the date (1827). When your correspondent quotes an authority fifty-eight years old, and I imply he is setting up a claim to which he is not entitled, it will be open to him to remind me of the misfortune of having a treacherous memory. I am not even the originator of the application of the "principle" to fruit, though I do not know that there is much on the subject in print previous to this discussion.—A THINKER.

REVIEWS OF BOOKS.

Wild Flowers worth Notice. By MRS. LANKESTER. London: W. H. Allen & Co., 13, Waterloo Place.

Books devoted to the flora of Great Britain, and treating the subject both scientifically and popularly, are very numerous; but additions are continually being made to their number, and one of the most recent is the subject of this notice. The authoress is well known for several other works of a similar character, particularly for her "Plain and Easy Account of British Ferns" and the popular and interesting description in Sowerby's "English Botany." The chief object of the treatise on wild flowers is to give a selection of the most attractive of British plants with a condensed account of their uses and history, with such brief description that with the aid of the coloured figures the plants can be recognised. The figures mentioned are from drawings by J. E. Sowerby, 108 being given, and though they are small the majority faithfully depict the plants they represent.

In the course of an interesting preface referring to the advantages derived from a knowledge of wild plants rendering country walks more agreeable, the following passage concerning an amateur botanist in the Manchester district is worth perusal:—

"Let it not be supposed, however, that this search after wild flowers need be confined to such as have at their disposal all the appliances of science. The poorest inhabitant of a cottage has within her reach the same delight from this pursuit as the lady of the mansion, and we have many instances of the successful cultivation of botany by those who have to labour hard for their daily bread. Among the hills which surround the great manufacturing city of the north, Manchester, and even within the very atmosphere of its smoke, there exists at this day a club of working naturalists—chiefly botanists. All of them are artisans in some one of the great factories of the district. An account published by one of themselves of their weekly botanical excursions, their field-days, and the healthful and exhilarating effect on the minds and bodies of the members of this club, is most encouraging and delightful. The actual longevity of these humble naturalists is very remarkable. Old Crowther, one of the earliest workers in this direction, died at the age of 79; he was a simple-hearted man, willing to travel any distance and undergo any fatigue so that he secured his flower. As one of his old companions said, 'he was not *learned*, but he was very *loving*.' He never touched his wages for the purpose of botanical pleasure, but took home every penny, and trusted to fortunate accidents for the means of supplying his scientific wants. An account of the life and labours of another of this noble fraternity, the late Samuel Gibson, of Hebden Bridge, appeared in the *Manchester Guardian* of the 30th May, 1849. His herbarium of plants was sold after his death for the sum of £75, and many portions of his collection are now to be seen in the Peel Park Museum, Salford. In 1858 an annual meeting of these working-men naturalists took place near Manchester, at which there mustered not less than two hundred zealous and well-informed botanists, all, with the exception of four or five, of the artisan class. The one striking feature of this meeting seems to have been the hale and hearty appearance of the men already advanced in life; they were fine specimens of youth carried on into old age. There is evidently something in natural history wonderfully promotive of length of days. Men never step into the presence of Nature with affection and reverence, but they come back blessed and strengthened with a reward."

As an example of the style adopted in the body of the work we reproduce the following chapter on the White Water Lily (*Nymphaea alba*). After describing the flower the authoress proceeds:—

"The doctrine that all the parts of a plant are modifications of the leaves may be aptly illustrated by tracing the gradual changes which take place in the floral envelopes of this plant. Begin with the outermost whorl of sepals, and trace the leaf-like character gradually lessening until they become changed into perfect stamens, with petal-like anthers attached to them. The flower-stems are porous and succulent, but rapidly lose their moisture if removed from the water. The Water Lily may be transplanted from its native home by placing the thick stems in baskets of earth, and fastening stones to them so as to keep them well under water. These stems have a bitter, astringent taste, but are quite free from any of the poisonous acrid principle of the last family of plants we met with. They have been used in dyeing a dark brown colour. Goats and swine will eat them, and

they have been used medicinally. It is, however, as an object of beauty that the Water Lily claims our attention; and nothing can be more lovely than a calm lake on whose bosom may be seen floating numbers of these snowy nymphs. On Loch Lomond acres are covered with them; and in all the northern English lakes they are more or less abundant. Like the sacred Lotus of the Nile, the flowers rise and expand as the sun gains strength, and close again in the evening; sleeping as it were through the hours of darkness until called into life again by the warm rays of light.

"Moore poetically describes this natural process—

'Those virgin Lilies all the night
Bathing their beauties in the lake,
That they may rise more fresh and bright
When their beloved sun's awake.'

The stimulus of the sun's rays seems to have relation to the fertilisation of the plant. The pollen, if scattered beneath the water, would be washed away and decomposed, while on the expanded raised flower it is received without injury. This is truly the object for which—

'The Water Lily to the light,
Her chalice rears of silver white.'

And as it is with poets in sentiment, so it should be in our everyday life; each daily duty, if viewed aright, contains in it the elements of poetry, which might be made to surround the most prosaic acts of existence with beauty."

The nomenclature is generally accurate, but the adoption of capital initial letters for the specific names is a disfigurement, and the Cowslip is erroneously termed *Primula officinalis* instead of *P. veris*. A few literal errors occur, as in *Glaucium*, which should be *Glaucium*. It is a readable little book, and is most elegantly bound.

Where to Find Ferns. By FRANCIS GEORGE HEATH. London: Society for Promoting Christian Knowledge.

ONE very striking character of this little work is the large number of illustrations with which its pages are lightened, and as the majority of these are photographic reductions of the plates in the "Fern Portfolio" by the same author, and representing choice bits of scenery where Ferns abound, some idea can be formed of their character. For these alone the book is very cheap, and to many persons probably the matter will also be welcome. The author has endeavoured to avoid giving precise indication of the localities where the different species of Ferns are found, to prevent any of these being exterminated by enthusiastic collectors; but in this he appears to have defeated the object of the book as indicated in the title. For instance, we are told that *Allosorus crispus* is found in Chester, Cumberland, Derby, Devon, Durham, and other counties, and in most other cases no more precise indication is furnished. In a few, however, of the rarest, and those therefore most likely to be sought for, the exact positions are recorded. Mr. Heath thus states his object and the advantages of Fern-seeking in the explanatory chapter:—

"Fern-hunting to lovers of Ferns is one of the most delightful of pastimes. It gives zest to any country walk; because it adds the attraction of a hobby to the pleasure of being out of doors. Life in the present age is far too sedentary, and there exists too great a tendency to sit in rooms with closed doors and windows. Some people seem almost to dread air in motion, and they become, in time, so little used to it, that at length the body itself is brought into a morbid state, currents of air become 'draughts,' and cold and illness are the result. The air is the best friend we have, and in seeking outdoor pastimes in the country we obtain it in its best and purest form. The seeker after Ferns must ride his hobby into the wildest and most out-of-the-way districts, and into the most delicious nooks of greenery—must climb hills, wind through valleys, plunge into woods, follow the course of streams, search rocks, hedgebanks, and forest clumps, examine old walls and tree-forks, and look everywhere, in short, where green life has a chance of existence."

Chapters are devoted to the definition of terms, Fern habitats, the cultivation of Ferns, and the Ferns around London, and being neatly bound the book will undoubtedly find many purchasers.

FRUIT CROPS AND THE DROUGHT.

A RIDE through some parts of Wiltshire and the north-eastern borders of Somerset discloses the fact that Apples and Pears are by no means so plentiful as at one time it was thought they would be. Probably the crop was never more variable, some trees being overloaded, while others adjoining are nearly or quite bare. It would appear that those Apples which possess strong constitutions and those which did not perfect any fruit last season are the most fruitful this year, such sorts as Keswick and Gams Codlins, Lord Suffield, Hawthornden, Stirling Castle, Tower of Glamis, King of the Pippins, Warner's King, Damelow's Seedling, Cellini, and Cox's Orange Pippin being about the heaviest croppers. Large quantities are dropping off the trees, fortunately so in many cases; but whether this is the result of long-continued drought or not I cannot determine, though there is no doubt the drought will injuriously affect the size of the majority of those hanging.

Pears are also very abundant on some of the trees, but these do not seem disposed to drop; and unless freely thinned are certain to be small and poor in quality. All alike blossomed well, but the exposed trees have, as a rule, set the smallest crops. In many places the trees are almost smothered with honeydew, and the hot sun has burnt the foliage badly. Filberts, wherever slightly sheltered, appear to be bearing extraordinarily heavy crops, and Walnuts are fairly plentiful.

Morello Cherry trees appear to be fast dying back, and I do not remember having before seen so many strong trees losing so many branches. This strange disease, or whatever it is that is working the mischief, would appear to be also prevalent in other districts, and one

friend informs me that in a garden in Sussex the Morellos are dying back wholesale. Young and old trees appear to be similarly affected, and apparently there is no remedy for this most damaging disease.—W. I.



KITCHEN GARDEN.

Watering.—This has become very necessary with many crops. Peas coming into bloom or pod, as well as those which are later, must not be allowed to droop through dryness at the root or the crop will deteriorate. Water all of value thoroughly every three days or so, Celery will take copious supplies. Runner Beans will soon cease bearing if too dry; and where hands and means will allow general waterings should now be the chief part of the vegetable garden work. Weeds have stopped growing, small fruits are mostly gathered, and the grass in the pleasure grounds does not require much cutting now, so we have more time for watering, which we regard as profitable employment such times as these. There is no use in thinking whether watering can be best done in the morning or afternoon. We often go on all day, and on no account should it be neglected if a succession of good produce has to be kept up. Liquid manure is beneficial to all crops, but we do not pay so much attention to this in hot weather as getting the crops watered in any form. We dissolve a handful of guano in every four gallons of water, and give it after the plants have been first watered with clean water. We only give complete soakings, no surface waterings are tolerated.

Old Vegetables.—These are turning in fast. Peas and Broad Beans which were green and in full health a fortnight or so ago are now yellow and useless, and the sooner they are cleared off the better. Use the stakes which come from the Pea rows to hold up the later ones which now require support. Spinach and Lettuce are running fast to seed, and are cleared off to make room for rising crops. Lettuce stems are cut into lengths of from 1 inch to 2 inches, and preserved in syrup to be used by-and-by at dessert. They are very good; few could say they were eating wasted stems of Lettuce when partaking of this delicacy.

A Succession of Vegetables.—This tests the skill of a grower more than anything. We often see a remarkably good crop of one vegetable in at a particular time, and it is very satisfactory while it lasts; but when there is nothing more to follow, complaints from the kitchen and dining-room are certain. It is at midseason when we have experienced the greatest difficulty, and we now take the precaution to sow often of crops which are coming into use about that time. We can say nothing to remedy any mistake for this season, but we would urge cultivators, more especially young growers, to make a note of any deficiency and guard against it in time to come. No one has any cause to grumble about our supplies just now, but we have been making a note to sow our seeds deeper and further from the dry surface in time to come than we have hitherto done.

Spinach.—Just between the finishing of the summer Spinach and the coming-in of the winter crop, there is a danger of none being had, and where this really useful vegetable is valued, a gap in the supply will not do. A good and last sowing of the round-seeded variety should be made at once. Let the soil be rich, have the drills 15 inches apart, and sow thinly.

Turnips.—Those sown for autumn use have come up quick and well, and require thinning; this should not be delayed too long. Dwarf sturdy plants can only be secured by timely attention in this respect. Let them have plenty of room; it is the only way to secure fine bulbs in the short days. Seed of both early and late varieties may still be sown. The culture advised for the Spinach will suit them admirably.

Ripe Potatoes.—While the dry weather has been against many things of late it has certainly been in favour of early Potatoes, and our crops are excellent. The early and midseason ones are quite ripe, and will be lifted and stored forthwith. We have Brussels Sprouts, Savoy, and other winter vegetables growing between the Potatoes, and as it is difficult to get the tubers dug out clean when the leaves of the greens are meeting we are all the more anxious to take advantage of the present weather to put both the Potatoes and the greens straight.

French Beans.—Osborn's has been ready for some weeks in the open, and there are now plenty of tender pods of Canadian Wonder; and Laxton's Girtford Giant Runner gave us some good pods the last week in July. They are all very tender, and a nice change from the Peas. A late sowing of dwarfs may still be made in warm localities, but they must be put along the bottom of a south wall or in a position where they will be well sheltered in October, as this is the time they will be in bloom and fruit. When any kind of French Beans bears more pods than can be used they should be gathered before they become too old, as this causes the plants to cease producing young pods quicker than anything we know. We would rather gather the pods and throw them away than allow them to remain to spoil the successional fruiting of the rows.

FRUIT FORCING.

Figs.—*Early-forced Pot Trees.*—Figs that have been bearing in pots since the end of April will still be affording an abundance of fruit, with

a prospect of its continuance. It will not be advisable to continue syringing; indeed, it cannot be practised over the fruit when it is ripening without considerable risk of damaging it, causing it to crack, and impairing its flavour; but the air should be kept reasonably moist by syringing available surfaces, at the same time ventilating judiciously; also moderate the supply of tepid liquid to the roots. All the side shoots should now be closely stopped, so as to admit of a free circulation of air, and next year's fruiting wood must be thoroughly ripened before the trees go to rest. Under ordinary circumstances the trees should be in a fit condition for the removal of the roof lights early in September.

Succession Houses.—Trees from which a second crop is to be gathered will require fire heat, with a little air at night to prevent the atmosphere becoming stagnant, regulating the supply of moisture by the weather, the density of the foliage, and the situation of the house. In low situations and on cold heavy soils it is advisable to train in wood thinly, and to use water sparingly in dull periods, making up for quantity by improving the quality of the stimulating matter supplied to the roots, which ought to be entirely inside. In elevated sites, where there is the advantage of light and a dry atmosphere, water may be more freely used, but in the most favoured situations the heat and moisture must be so regulated by circumstances so as to secure the main point in successful Fig culture—viz., firm, short-jointed, and thoroughly ripened wood.

STRAWBERRIES IN POTS.—The runners that were layered in small pots some time ago and duly attended to with water will be well rooted, and, being detached and stood on the north side of a wall for a few days, should be potted into the fruiting pots without much further delay. A selection should be made of the plants, placing the stronger into 6-inch, whilst those that are less vigorous may have 5-inch pots. The compost most suitable is good turfy loam, with a fifth of well-decayed manure added, though we prefer to stack the manure with the loam from three to six months, and then chop down from one end, making moderately fine. Under ordinary circumstances it is in good potting condition, but if wet weather prevail it may be necessary to have it under cover for a few days, so as to part with any excess of moisture, as it is necessary the soil be in a condition to admit of being rammed firmly in the pots. To every barrowful of the loam we add a quart of soot, a similar quantity of Clay's or Beeson's manure, or about a quart of the mixture per bushel of loam, and incorporate thoroughly. The pots should be well drained, and the plants kept rather high in preference to low in the centre of the pots, sufficient space being allowed for watering. We prefer the space for a 6-inch pot to be about three-quarters of an inch, and to mulch the surface with some fresh horse droppings rubbed through the hands, which keeps the soil from leaving the sides of the pots, and encourages surface roots.

The plants after potting should be on a hard bottom, impervious to worms, and though they may be placed somewhat close in the first instance, they must be given space so as to allow for the full development of the foliage from all points. In addition to never being allowed to want for water at the roots, the plants may be sprinkled in the evening of hot days. It ought never to be lost sight of that the Strawberry delights in nothing so much as a cool moist condition at the roots, but it is equally necessary to bear in mind that if the plants are not to suffer by lack of water that a supply can be of no use when the soil is saturated, and ought not to be given until it becomes necessary.

Another important matter is to keep the foliage free from weeds, and never allow a runner to show without pinching it off. Another matter too often considered unimportant is to keep the plants to single crowns, which is particularly valuable in the case of plants for early work, as it hastens their development as compared with those that are permitted to form as many crowns as they will. Some kinds are not much given to form a number of crowns, amongst which may be instanced *La Grosse Suerée*, *Pauline*, *Sir Harry*, *President*, *Dr. Hogg*, and *Cockscomb*, but even those form finer centre crowns when the sides ones are rubbed off directly they form. On the other hand, *Vicomtesse Hericart de Thury*, *Keen's Seedling*, *Mr. Radclyffe*, and *Sir Charles Napier* are liable to send up clusters of crowns, and it follows that when only one is taken the flower spikes are less numerous but very much stronger, and the flowers are consequently finer—the foundation of large fruits, which set well, swell off well, and finish handsomely. There may not be much difference between a plant carrying a dozen or more fruits in the weight collectively, but there is a great difference when we get the same weight in four to six fruits on another plant, not only in appearance but in quality, for a forced Strawberry is nothing unless it be large, of even shape and good in colour—a glowing red. Six-inch pots are suitable for all-round work, but for late work and strong growers they may have an inch larger size of pot. Besides keeping the plants free from aphides and red spider, a sharp look-out should be kept for caterpillars.

PLANT HOUSES.

Chrysanthemums.—Plants in from 3 to 6-inch pots are very useful for furnishing purposes during autumn and winter. To have these in really good condition strong cuttings from the tops of shoots that have been allowed to grow without stopping for some time should be selected and inserted at once. Good cuttings will be plentiful if previous directions have been carried out. The large-flowering kinds, such as *Elaine*, *James Salter*, *Peter the Great*, *Queen of England*, *Jardin des Plantes*, *Princess of Teck*, and others should be inserted singly in the smallest size pots, placing a little sand in the centre of the pot for the base of the cutting to rest upon. Pompon and small-flowering varieties should be inserted, a number together, in 5 or 6-inch pots. Some of these are remarkably fine in small pots if allowed to grow and branch into three shoots, carrying

one flower on the end of each. These plants will do this without stopping, for soon after they are rooted they will produce a crown bud and then branch into three shoots from below, the crown buds being removed.

Those inserted together in larger pots should be allowed to grow naturally without stopping or dishudding. The large-flowering kinds in small pots are allowed to carry only one bloom, and the crown bud produced is in most cases selected, except when it is necessary to make the early-flowering varieties a little later; such, for instance, as *James Salter*, *Elaine*, and *Early Red Dragon* have the crown buds removed, and one of the growths that starts from the base is allowed to grow and the flower is taken from the end of it, all other flower buds that surround it being removed. It is surprising how beautiful these miniature plants are, carrying one good bloom each, when elevated above other flowering plants, for they can be used where it is impossible to use plants in larger pots. The cuttings will root freely in a cold frame in any position where the sun cannot strike upon them. They should be well watered after insertion, and the frame kept close. Directly they are rooted they must be gradually hardened and stood outside with the rest of the stock, being careful that they are kept well watered at their roots.

Zonal Pelargoniums.—All plants intended for winter flowering must be outside in a sunny position to ripen and harden their wood, for this is the secret of their abundance of flowers through the whole of the winter. The only attention necessary while they are outside is pinching the shoots, removing flowers and dead leaves, besides supplying them liberally with water and weak stimulants when the pots are full of roots. A good hatch of cuttings rooted now in 2 and 3-inch pots will be useful where quantities of plants are required in a small state for furnishing rooms. They should remain in the pots in which they are rooted, and are very handsome with one or two trusses on each for association with small Ferns, Mosses, Crotons, Roman Hyacinths, and other plants that may be employed. Free-flowering sorts only should be used, the semi-doubles lasting better for this purpose than the singles. Wonderful and *Madame Thibaut* are two of the most useful varieties. After the plants are rooted they may stand outside until the autumn. A good hatch of both singles and doubles should now be rooted for early flowering in spring. As soon as these are rooted they must be pinched and placed into 4-inch pots, in which they will be wintered close to the glass. These if well looked after will be hardy, sturdy specimens, ready for 6-inch pots at the turn of the year.

French and Fancy Pelargoniums.—The earliest cuttings will now be rooted, and should have their points taken out; as soon as they have broken again into growth they should be transferred into 4-inch pots and grown in a cold frame with abundance of air until autumn. Good loam, one-seventh of manure and sand, will suit these plants, and if pressed firmly into the pots will insure dwarf sturdy growth. The shoots should be pinched until the end of September, but not afterwards, if required to flower as early as possible. It is a good plan when housing them to place them in their flowering pots, if ready, as they then become established before the winter. Old plants from which these cuttings were taken should now be pruned close back and placed in a cold frame, where they can be kept well syringed and close until they break again into growth, when they may be turned out, the old balls reduced, and the plants repotted into smaller pots. After potting, the frame should be kept close for ten days or a fortnight, and the plants watered with great care. If possible, the soil should be kept moist by syringing until root-action has well commenced. All late hatches as they cease flowering should be well ripened by placing them in a sunny position outside, keeping them on the dry side until the wood is hard and firm, when they may be pruned back and treated as advised above.

Lilium candidum.—This is, perhaps, the best of all Lilies for cultivation in pots, as it can be trained to develop its pearly white fragrant flowers at Christmas and in succession until they can be had outside during the month of July. Those anxious to grow this Lily in pots should purchase at once, for imported bulbs can always be had by the middle of July or a week later. We have had many of these bulbs, and have always found them start into growth freely and do well even the first season. The bulbs should be potted into 6 or 7-inch pots, according to their size, in a compost of loam, one-seventh of decayed manure, and a little sand. After potting they should be stood in a frame, and the pots covered with about 2 inches of fine coal ashes, cocoa-nut fibre refuse, or similar material, and the frame shaded until they push their leaves through. Water will not then be needed until a good quantity of roots has been formed. Plenty of air should be given as soon as growth is visible, and when it is fairly developed the pots can be plunged outside until the approach of frost. They can be allowed to remain in a cold frame until the turn of the new year, when they may be started into growth in a vinery or Peach house just started.

If wanted in flower as early as possible give greenhouse treatment, and no lower temperature at night than 45°, and the flower spikes will soon commence to push; in fact, they will continue to grow slowly all the winter. After the new year they will come forward rapidly in an intermediate temperature, where a good circulation of air can be maintained. Plants treated as described will flower towards the end of March, and if kept indoors after blooming until the weather is sufficiently genial to turn them outside, they will flower again about Christmas. Soon after flowering new growth at the base will be visible, when the old stem may be removed, and the plants either potted without disturbing their roots, or top-dressed with rich material and fed afterwards with weak stimulants or two or three applications of artificial manure. By care and good attention after flowering, with rich top-dressings and repotting occasionally, this Lily may be kept in perfect health in pots for many years.

THE FLOWER GARDEN AND PLEASURE GROUND.

Budding Roses.—The month of August we consider quite early enough for budding these, as we prefer that the buds should lie dormant till the following spring, when they make much stronger growth than they usually do when they have formed a shoot the same summer they are inserted. The common Briar or Dog Rose is still the stock most generally relied upon, and it is as well adapted for dwarfs as standards. During showery seasons the operation of budding is a simple one, the beginner oftentimes being as successful as an expert, but the case will be very different this summer, as buds will not "run" freely, neither will the Briar shoots "open" properly. In order to improve both the buds and the stocks, the plants from which the former are to be taken, as well as the stocks, should receive several soakings of water, budding not being attempted till it is found that the sap is risen in each case. Unless this is done the success will be very doubtful. Those who are unable to get any good buds from their own stock of Roses can procure them at a cheap rate from various nurserymen. The shoots with the buds attached should be packed in moistened moss, and ought never to become dry from the time they are cut, or the buds will not separate from the wood. We like to insert the buds as close to the stems of the Briars as possible, and they then soon become very firmly attached to the stems. The buds should also be closely shaded till they are attached to the wood of the stock.

Layering Carnations and Picotees.—No time should be lost in completing this work, layering being the best way of procuring strong young plants for flowering next season. The soil around the old plants should be loosened, a good soaking of water be given, a few hours after which a liberal dressing of sandy or gritty soil should be stirred into the surface. Trim off the lower leaves of the shoots to be layered, next cut the stems half through with a sharp knife immediately under a joint, and after cutting upwards through the joint, peg them down firmly into the soil. Should the present hot weather continue it is advisable to lightly shade the beds or single plants with branches of trees, and occasional waterings through a fine-rose pot will also benefit them, the layered pieces not to be separated from the old plants till well rooted, when the choicest of them may be potted and wintered in frames, and the remainder planted out where they are to flower next season.

Spring-bedding Plants.—These are making very poor progress, and many that have been freely divided are in a poor plight. Wallflowers, Sweet Williams, and Stocks are, if not pricked out, spoiling. The driest of plots may, if watered freely overnight, be finely broken down the next morning, and if the seed beds are also well soaked with water the plants may be lifted readily. After they are firmly dibbled out they should be watered in, and then shaded with branches of evergreens or other trees. This with light waterings in the evening will keep them alive, and directly growing weather is experienced the plants will make rapid progress. Seedling plants of Campanulas of sorts must also be attended to, or they will not become strong enough to flower well next season. Many of them have been very beautiful this year, but the old plants, if preserved, rarely flower well the following season. Polyanthus, Primroses, Daisies, Arahises, Alyssums, and other somewhat similar bedding plants that have been divided and replanted will require to be watered occasionally, and if in a hot position should also be temporarily shaded. The middle of August is quite early enough for sowing the seeds of such spring flowering annuals as Alyssum maritimum, Collinsia grandiflora, Lasthenia californica, Limnanthes Douglassi, Saponaria calabrica, Virginian Stocks, and in warm localities a week later would do. Silene pendula and the white variety should be sown on an open border at once, as these do not grow so rapidly as the above-named sorts.

Violets.—The hot weather has greatly interfered with the growth of these, and unless red spider is checked and free growth encouraged the flowering crowns will be very weak. The surface of the beds should be stirred with a Dutch hoe, and a good watering given, this being supplemented with a mulching of short manure or leaf soil, and nightly sprinklings will further assist them.

Lawns.—But little mowing is now needed, and in all cases it is best to do this without the receiving box being attached to the machine. Newly laid turf will be cracking very badly, and should have, if possible, a thorough soaking with water, followed with a top-dressing of fine soil, much of which may be worked into the cracks. This will serve to keep the grass alive, and when rainy weather sets in the turf will soon present a much better appearance.

THE BEE-KEEPER.

A WORD IN SEASON.

HONEY is now abundant in every pasture field. The thousands of heads of delicate White Clover and the sweet-scented Lime betoken a glorious time for the bees; but, and no pleasure is without its alloy, unless bees are taken to the Heather—the thought is often in my mind that each day is surely bringing the season to an end, and that by the 1st August in all probability there will be but little work to engage the attention of the bees beyond preparing their hives for another winter's storms. I, too, begin to meditate over the most desirable way to proceed in order to obtain for another year stocks of superior

strength to take advantage of the earliest flow of honey in the spring of the year 1886.

Generally speaking, there is no department in apiculture so little attended to and so much overlooked as this, one of the most important factors conducing to future success, the setting aside of the most fitting and strongest both in honey and in numbers, of the stocks to stand the winter and form the apiary. There are many different modes of management in order to ensure strong stocks in early spring, but probably nine out of ten bee-keepers will find the best and most expeditious way to be one of the two here given. In early September, if the bees are in large hives, add to each at least 5 lbs. of bees, and leave honey sufficient to last until the end of April without extraneous help, say 30 lbs. If there is not this weight of honey in each stock, a syrup made of sugar and water in the proportion of 3 lbs. of sugar to 2 lbs. of water, will prove just as serviceable. Such stocks strengthened by so numerous an addition with stores in abundance need only to be kept free from damp, and the severest winter of our climate may be looked forward to without any misgiving, and without much attention beyond when snow is upon the ground, either shading the entrances or closing them altogether with a slide of perforated zinc. Can any plan be simpler than the one above described? There need be no trouble about the queens, for the rule of the survival of the fittest will leave, in nine cases out of ten, the stronger queen and the one possessing the greater vitality at the head of the stock.

This plan, however, is not the one I generally follow, for to me the more profitable mode of procedure seems to be this, the second system. Early in August, the earlier the better after the honey season is at an end, drive the bees out of all the hives and join two lots together, always uniting those contiguous to one another. Where this system is pursued two hives are always placed side by side at swarming time in order to facilitate union. In the course, then, of the next three weeks give each hive 60 lbs. of syrup made of sugar and water in the above proportions. What is the result? A margin of profit for the honey, after the expense of the sugar has been met, taken from the old hive, stocks filled with new sweet comb with plenteous stores and cells all ready in the spring for the great number of eggs then deposited, and a sufficiency of pollen to last until the new supply begins, and a considerable batch of young bees to live till early summer. The advantages of the system are, I maintain, that all the honey in the hives that have stood the summer is ready for sale; if foul brood cells existed they are destroyed; if pollen-bound the cells are useless, and therefore the new ones are an advantage, and if the wax moth has gained an entrance her larvae are prevented from mining the stock. What can be urged against the plan? Well, I only know one, and that is that Dzierzon says that stocks do not winter so well in new comb because the older is warmer and more comfortable. I am convinced that in England such stocks can be wintered without misgiving. Let each one try a single stock this year for himself, the result will be quite satisfactory.

I must conclude by asking those who do try this system to give it a fair trial, carrying out the instructions in full, letting each hive, if a large one, have at least 8 or 10 lbs. of bees, and taking three weeks to give them the requisite amount of syrup. If anyone then fails—but they won't.—FELIX.

EXTRACTING HONEY.

SINCE writing to you I have read your article on taking off supers, and I must say that I have succeeded admirably. I did not use the carbolised paper rightly until your last remarks appeared, therefore my "wail" has changed with my success. I removed five 2 lb. sections, and took off the frame of empty sections, and also removed two bars of honey from the body hive without getting a sting. I find, however, many young bees in an early stage in most of the other frames—the bottom part of the frames—and I thought it was wise not to extract until the young bees were matured. I put back an extracted frame next day, and found the bees were making wax on a frame of foundation and storing honey. There are now in that hive, I think, nine frames of honey and young bees. Will it kill the young ones to extract the honey? How many bars (14½ inches long 9 inches deep) would you leave in for the winter? Or would you extract all and give syrup? I have just examined the supers on the hive I told you I had not taken any sections from, and find the bees very busy, and one or two sections are being filled very nicely. Intended taking away the frame of sections to-day and extract all the honey I could, but as the bees were so busy, and young ones still in the frames, I desisted, and have done nothing to hinder their onward progress. I fancy the bees are busy on the second crop of Clover in the fields close by.

Kindly inform me how many frames of honey to leave in the hive for winter, and any information you can give me respecting the final manipulation before winter will oblige. I cannot quite understand how the "outside case" is fastened to the hive which you so kindly described last

week. Many thanks for your advice in the past. I might say that I find your journal more helpful than any other. I wish you could add weekly hints.—BASIL.

[Bees will work out comb foundation quicker than repair broken extracted combs. Do not extract honey from combs containing brood; it injures the bees and spoils the honey. Supering is the proper course to obtain surplus honey of good quality. About five frames of honey now will be required to keep the bees at rest during winter and tide them over till spring, but be sure and give more frames than nine of that size by April. I prefer the bees to have honey of their own gathering, they breed better on it, although syrup keeps them healthy during winter. You might take part and feed up—the most commendable way. There are various ways of fastening outside cases. They should be fastened to the floor proper of the case; a little hoop turning down on a rod of iron passing from side to side of the floor does very well. I should be very glad to add weekly hints, but unfortunately these cannot always be acted up to unless we know the state of bees and what the weather is likely to be. In an early article I will give some notes from my own apiary, which may serve a good purpose if note is taken of them. Where old queens are still regnant they should be deposed and young ones take their place. One frame with bees adhering, and containing brood and queen cell, does perfectly well for a nucleus. In my own apiary I have a stock hive divided in this fashion, with a comb of foundation on each side, and each has a frame feeder, recently described, so that in a short time they will be nice stocks, and when they have their hives completely filled with frames of brood and honey from healthy ones in September, will stand untouched until I put on supers next June, if spared. Now is the time to have hives filled with comb for next season. Condemned bees can be made to serve this good purpose.—A LANARKSHIRE BEE-KEEPER.]

THE SEASON—NOTES ON BEES.

DURING the whole of this month (July) up to the 18th, the temperature has been comparatively low in the north, and accompanied with strong withering winds, the average night temperature being 40°, and the day 60°, giving a mean of 50°—too low for honey secretion or gathering. Vegetation has suffered from the drought up to St. Swithin's day, when rain came, and it has been showery since.

In consequence of the low temperature bees remain in the condition they were in at the end of June, heavy with nearly finished supers. A few days' fine weather would enable the bees to finish a yield above the average. The first three weeks of June is the best time here for the Clover, and if the temperature would rise and the weather become fine, owing to the lateness of the season a large harvest would result. Farther south the yield from the white Clover has been good. The Heather will be later this season, and unless the weather improves soon there is not likely to be a large harvest from it. Those intending taking their bees to it should, however, have strong stocks only, as very often there are only a few days favourable to honey-gathering, and only strong stocks will do any good.

There are two ways of strengthening stocks: one is by joining swarms, the other by removing from hives the honeycombs that are sealed, and substitute those containing brood from others if healthy. If the weather is cold feed a little to encourage the bees to breed and hatch out that are already in the hives. Strong hives that have young queens will require no such manipulation. All my own are of this nature, and will, according to precedent, if a favourable opportunity occurs, gather at least 10 lbs. daily. When the supers at present on them are removed I will make a slight examination of some of the frames, and if they are extra heavy in honey will remove some and fill up with brood from a hive or hives set apart for that purpose.

A contemporary advises the extracting of all honey before sending to the Heather. Worse advice could not be given. It is most important that the body of the hive be filled with both honey and brood, otherwise supers will be very rare. With an empty house below, the bees will not enter supers; so I always endeavour to have all my stocks in a state to enter supers at once, if not already in them before they are removed.

Straw hives can either be strengthened with driven bees or two-tiered. Stewerton hives are admirably adapted for such, as the sections containing the brood of one can take the place of those containing honey removed. By this means the stock is reduced to what we wish, while those kept are put by the manipulation into the highest state of perfection for collecting a large quantity of honey and filling supers, while those with extracted and empty combs below may not enter supers at all, and as the nights in August and September are likely to get colder attention should be given towards keeping the supers well wrapped up.

A sufficient number of queens should be raised now to take the place of aged and unsatisfactory ones in September. Hives having young prolific queens are those that are to be depended on next season. Queens, even if only one year old, and that have done service in a non-swarmed hive, are liable to be deposed in April, when a successor might not be fertilised; whereas they are the only ones that can be depended on in hives not intended for swarming, while they are in every respect the best for swarming ones. Where small, consequently unprofitable, hives are kept queens last longer, but it is desirable with bees as with everything else to make the most of them; we tax their laying powers the first season as much as possible. Then queens reared now are better able to keep the large-hive system going than one hatched in May, which has laid much through the summer. Not one of my hives intended as non-swarmers lived this year, while over the hedge my neighbour with two-year-old queens and hives a bird less in size than mine have swarmed. I have something to say on

varieties of bees and swarming vagaries, but will defer it until another time.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (T. C.).—Miss Hassard's book, to which you refer, is published by Macmillan & Co., but we do not know the price of it, nor of any other work to suit you better.

Cones on Araucarias (R. C. W.).—Many Araucarias have produced cones in this country, and seedlings have been raised, but not in any great number. If you refer to the number of this Journal dated August 21st, 1884, you will find male and female cones illustrated as grown at Dropmore.

Fungus on Mint (J. S., Prestwich).—We are not able to explain the cause of the presence of the fungus in the stem of the Mint, but have usually observed it on plants that have been long established in a bed and hence impoverished the soil. We should plant healthy rooted slips in spring in fresh soil some distance from the present infected bed. We regret the publication of this reply has been accidentally delayed.

Seedling Verbena (J. B. Gaskell).—The trusses you have sent are good, and the colour—crimson scarlet—rich and bright, and as you say the habit of the plant, both in pots and beds, is all that can be desired, you may regard the variety as a very good one, and worthy of a name. We do not know how far it differs from the Hampton Court Crimson, as this can only be determined by seeing growing plants; if you should visit London this autumn you might go down to Hampton Court, taking a handful of your seedling with you, and compare for yourself; or if you were to send flowers, with a letter, to Mr. Graham, he would no doubt tell you in what respect, if any, your seedling differs from his.

Coloured Water Lilies—Filmy Ferns (A. C.).—The Blue Water Lily will not stand out of doors during the winter; it may, however, be grown in a large pan in a comparatively cool house. The red ones—*N. alba rosea* and *N. odorata rubra*—both of which would answer your purpose, are perfectly hardy, and will flourish freely in any tank or pond where they get plenty of sun. They may both be had true from Messrs. Backhouse & Sons, York, or from Mr. T. S. Ware, Tottenham, from whom prices can be obtained. Effective Filmy Ferns are *Todea superba*, *T. hymenophylloides*, *Hymenophyllum pulcherrimum*, *H. trichodeum*, *H. tunbridgensis*, and *Trichomanes radicans* and varieties. We know of no work specially devoted to their cultivation.

Lilium candidum (H. M.).—The best time for dividing bulbs of this Lilium is as soon as the stems commence withering after flowering, not waiting till they have entirely died down. The bulbs then commence rooting at once, produce a good growth of foliage before winter, and the plants that are strong enough will flower next year. We shall divide a number next week. It will be necessary for us to receive a spray with foliage, as well as a flower of the yellow Composite, for determining its name, and it should be packed in damp moss to arrive fresh. The flower you have sent in a dry box is totally withered.

Cucumbers Failing (Medicus).—We have seen Cucumbers successfully grown without ventilation of the house, but have never advised amateurs to adopt this method except experimentally. If you can raise the night temperature of the house to 70° or even 75° we advise you to do so, ventilating at 80° and closing at 85° or 90°. If you cannot do this you had better apply water less liberally, as the plants do not appear to be able to deal with the moisture that is supplied by the roots in the process of elaboration. Are you sure there is no red spider or other insects on the leaves? If there is not, and an improvement does not follow an increase of temperature, we should then fear your plants are overtaken with a disease that is practically incurable.

Stephanotis floribunda (R. H.).—You may pot your plant at once, and then it will have ample time to become well established before winter. It would have been better if you had done so some months ago. Potting may excite the plant into growth, and if so you must use every endeavour to thoroughly ripen the wood before winter. If it does not ripen well prune the unripened wood well back in spring before you start the plant into growth again. Encourage the extension of the roots into the new soil by plunging the pot in slight bottom heat, while the top of the plant is kept in a little lower temperature to prevent it from making fresh growth. If you do this and you rest the plant well during the winter it will start away luxuriantly another season. This plant does well in a compost of equal parts of fibry loam and peat, to which you may add a sprinkling of bone dust, a little crushed charcoal, and a liberal dash of coarse sand. The only manual on Orchids that would be suitable for you is the "Orchid Grower's Manual" by Mr. B. S. Williams.

Late Entries at Exhibitions (J. F., Hants).—As we have never had a similar case to yours submitted to us we print your letter:—"At a recent show I exhibited a collection of plants for a cup. Through an oversight no entry was made; but the plants were accepted, exhibited, and won first prize, the card put up and then taken down, the Committee having decided that as no entry was made the prize should be withheld. I entered a protest, saying that the Committee had no right to withhold the cup after the Secretary had allowed the plants to be exhibited and judged, and that I would hold them responsible for the cup. Am I right or wrong?" We can only say in reply that we have never known an award repudiated after the acceptance of an exhibit to which a prize has been awarded and the prize card attached, on the grounds indicated. If the card were not removed before the admittance of the public we suspect the Committee would have some difficulty in maintaining their position in a court of law; but we do not advise you to take action in the matter without consulting a solicitor. If you forgot to enter the plants at the prescribed time the Secretary would have been justified in refusing them, and if he had done so you would, perhaps, have felt yourself harshly treated. Whatever fault may have been committed you have contributed thereto by your "oversight," and this would not be overlooked. If the inadvertence of the Secretary were discovered and the prize card removed before the Show was open to the public we suspect your case would be considerably weakened. It would be imprudent to press your claim without good legal advice.

Hardy Climbers (S. S.).—We advise you first to incorporate some soil of a lighter nature with that surrounding your house. Leaf mould and a good quantity of coarse sand would be very suitable in which to give the plants for covering the walls a good start. After planting, mulch them with leaf mould or decayed manure, which arrests evaporation and prevents the ground cracking. Any of the following would be suitable for you:—*Clematis montana*, *C. flammula*, *Solanum jasminoides*, with *Passiflora corallina* and *Berberidopsis corallina*, if the locality is good. Some of the Ayrshire Roses, such as Dundee Rambler and Madame d'Arbly, *Jasminum nudiflorum*, *Lonicera flexuosum*, *Ceanothus aznreus*, *C. dentatus*; *Ampelopsis Veitchii* would also grow rapidly, the latter clinging as well as Ivy without any nailing, and in autumn is most beautiful with its crimson foliage. You will be able to grow *Maréchal Niel* Rose very well at the back of your greenhouse, but you must bear in mind that this variety is very liable to canker and go off after a few years. There are solitary examples of plants surviving and doing well for a great number of years, but the majority canker badly when about six or seven years of age. It nevertheless is well worth a trial, for growth is rapid, and the flowers produced from well ripened wood are numerous. Therefore, if the plant is only short-lived, they abundantly repay for any care and trouble that may be required. We advise you to plant this Rose on its roots if you can obtain good strong plants; if not, on the seedling Briar. If on the latter, when planting bury the union of the stock and Rose well beneath the soil, so that it may root from the union and in time become independent of the stock. You may grow successfully all ordinary kinds of greenhouse plants in your house with this Rose, for we know numbers of greenhouses in which this Rose is planted that are also furnished with a general collection of plants.

Vines Unhealthy (H. C.).—We have examined the leaves and roots carefully, and can find no evidence of the attacks of the phylloxera. The Vines appear to be in a very enfeebled state indeed, and you did not renew the border soon enough. We observe they improved the first year after being lifted, but are now as bad as ever again, yet they have "not been heavily cropped." We suspect they have, as what would be considered a very light crop for healthy Vines would be really a heavy one for Vines in such a weak state as yours evidently are, and they would have been better now if they had borne no Grapes at all the year after removal. You do not say whether the Vines have been in charge of the same individual since they were originally planted. They appear to be quite exhausted, and certainly the root-action is defective. As the soil was procured from the same place as before, we assume there is no corroding matter in it. Considering their weakness, you cropped them too heavily last year and previously, and started them too early this, drawing the sap from the stems before the roots were able to act freely and supply the nourishment that was required for continuing the growth. Remove the crop, which can be of no value, and encourage the Vines to make all the lateral growth possible, syringing them and maintaining a genial atmosphere. There can be no free root-extension without more and better growth to incite it. If, after all you can do, they refuse to grow, we should cut them down in early winter, and there is a possibility that they would break in the spring and produce fairly good canes next year. We doubt if there is any other way in which their lost vigour can be regained, and even this may fail. They have been badly managed for some time past, and the last and greatest mistake was in forcing them into growth too soon this spring, draining the rods of what little vitality there was in them while the already too feeble roots were in a torpid state.

Choice Carnations and Picotees (A. C.).—As you do not state how many varieties you require we cannot do better than name six in each section, arranged in the order of merit as determined in an election conducted by the leading florists. The new varieties are included up to last year. Some of the yellow Picotees are excellent, some of the best varieties being named in our report of the Carnation Society's Show last week:—**CARNATIONS.**—*Scarlet Bizarres.*—Admiral Curzon (Easom), Fred (Dodwell), George (Dodwell), Robert Lord (Dodwell), Edward Adams (Dodwell), Arthur Medhurst (Dodwell). *Crimson Bizarres.*—Master Fred (Hewitt), J. D. Hextall (Simonite), Harrison Weir (Dodwell), Thomas Moore (Dodwell), Eccentric Jack (Ely), John Simonite (Simonite). *Pink and Purple Bizarres.*—Sarah Payne (Ward), Falconbridge (May), Squire Llewelyn (Dodwell), James Taylor (Gibbons), William Skirving (Gorton), Unexpected (Turner). *Purple Flakes.*—James Douglas (Simonite), Dr. Foster (Foster), Squire Meynell (Brabbin), Mayor of Nottingham (Taylor), Juno (Baildon), Squire Whitbourn (Dodwell). *Scarlet Flakes.*—Clipper (Fletcher), Sportsman (Hedderley), John Ball (Dodwell), Dan Godfrey (Holmes), Annihilator (Jackson), Thomas Tomes (Dodwell). *Rose Flakes.*—John Keet (White, head), Sybil (Holmes), James Merryweather (Wood), Mrs. Dodwell (Lord), Jessica (Turner), Rob Roy (Gorton). **PICOTEES.**—*Heavy Red.*—John Smith (Bower), J. B. Bryant (Ingram). *Brunette* (Kirtland), Master Norman

(Norman), Mrs. Dodwell (Turner), Dr. Epps (Smith). *Light Red.*—Thomas William (Flowdy), Violet Douglas (Simonite), Mrs. Bower (Bower), Elsie Grace (Dodwell), Mrs. Gorton (Simonite), Clara (Bower). *Heavy Purple.*—Zerlina (Lord), Mrs. A. Chancellor (Turner), Alliance (Fellows), Tinnio (Dodwell), Muriel (Hewitt), Mrs. Summers (Simonite). *Light Purple.*—Ann Lord (Lord), Clara Penson (Willmer), Her Majesty (Addis), Minnie (Lord), Mary (Simonite), Nymph (Lord). *Heavy Rose and Scarlet.*—Mrs. Payne (Fellows), Miss Horner (Lord), Fanny Helen (Niven), Edith Dombrain (Turner), Royal Visit (Abercrombie), Mrs. Rudd (Rudd). *Light Rose or Scarlet.*—Mrs. Allcroft (Turner), Miss Wood (Wood), Nellie (Rudd), Miss Gorton (Dodwell), Bertha (Morris), Mrs. Nicholl (Simonite).

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. F. R.*)—As the flowers of *Ixoras* change with age we cannot with certainty name the truss you have sent, but it resembles *I. Williamsi*. (*W. H.*)—*Athyrium Filix-femina*, var. (*E. H.*)—1, *Agapanthus umbellatus*; 2, *Tradescantia discolor*; 3, *Nephrolepis cordifolia*; 4, *Dyckia rariflora*; 5, *Chamaerops humilis*; 6, *Pteris incisa*. (*Young Hand*).—1, *Campanula Raineri*; 2, *Spiraea callosa* var; 3, *Spiraea Nobleana*; 4, *Spiraea salicifolia*; 5, *Abies nobilis*; 6, *Phillyrea media*.

Preserving Bees—Supers (J. E.).—If bees are wanted they are worth preserving after the honey is taken, if not later than end of September. If they are not required they are worth preserving for strengthening other stocks. It is quite customary amongst bee-keepers to feed driven bees after they are quite from the Heather. The breadth of the top bars for stock hives should be 1½ inch, with a quarter-inch space, or 1½ inch from centre to centre. Supers have broader bars 2 inches from centre to centre, bars 1½ inch broad. As some prefer sections, but find them objectionable in some respects, we will publish particulars of a simple method of fixing sections in a common super which answers the purpose of both crate and rack.

COVENT GARDEN MARKET.—AUGUST 5TH.

THERE is no noteworthy alteration in the state of the market.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	0 0 to 0 0	Lemons	case 15 0 to 21 0	
Cherries	½ sieve	4 0 10 0	Oranges	100 8 0 12 0	
Cobs, Kent	per 100 lbs.	0 0 0 0	Peaches	per doz. 1 6 8 0	
Currants, Red ..	½ sieve	3 6 4 0	Pears, kitchen ..	dozen 0 0 0 0	
" Black	½ sieve	4 0 4 6	" dessert	dozen 0 0 0 0	
Figs	dozen	2 0 4 0	Pine Apples English ..	lb. 2 0 3 0	
Gooseberries ..	½ sieve	1 6 2 0	Strawberries	lb. 0 3 0 9	
Grapes	lb.	1 0 2 6	St. Michael Pines ..	each 3 0 7 0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 2 0
Asparagus	bundle	2 0 5 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley .. dozen bunches	2 0 3 0	
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsify	bundle	1 0 0 5
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts doz. bunches	2 0 4 0		Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 6
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 8
Leeks	bunch	0 3 0 4	Turnips	bunch	0 6 0 0



THE CLERGYMAN'S FARM.

(Continued from page 102.)

BARLEY, Beans, and Peas afford valuable additions to our mixed corn diet for all the animals of the farm, as well as being useful alone. Barley and Peas may be grown with success upon all soils that are not heavy and wet; but then it may be asked, Ought any farm land to be so much neglected as to be undrained and to lack mechanical division? Certainly it must be acknowledged that it ought not, but the fact remains that much of it is still to be found in an unsatisfactory condition. For the clergyman's farm we do not advise a heavy outlay at the outset, but rather an annual and gradual improvement; drainage, paring, burning, dressing with lime and ashes each being done in its proper season, how much each year being really a question of ways and

means. Undoubtedly if a farm could be taken in hand immediately after harvest, foul land pared, and burned if necessary, or ploughed, hoed, harrowed thoroughly, cleansed from noxious weeds, and all necessary drainage done, it would sooner be brought into a high state of cultivation; which in other words may be explained as efficient drainage, mechanical division, abundant fertility, and freedom from couch grass, thistles, docks, nettles, and other perennial weeds.

To realise fully what is the actual difference in results from good and bad culture we should look closely into the ripening crops of grain now to be found upon different farms, see the root crops, the green crops upon arable land; examine hayricks, drawing careful comparisons, and striving to see for ourselves the causes of failure and success. That the best soil for Barley is a tolerably light, rich, and well-pulverised one is undoubtedly true, and when we attempt its cultivation we should to render the soil as near to this condition as may be. An average crop of Barley is estimated at 48 bushels per acre, which at 55 lbs. per bushel amounts in the aggregate to 2640 lbs., and the straw and chaff have been estimated at 3300 lbs., or $1\frac{1}{4}$ times heavier than the grain. Both as whole and ground corn Barley should be used much more extensively than it is generally, and it should be made to help us avoid the heavy outlay for Maize so common to many farms. The Chevalier Barley is generally considered the best because of its superiority for malting purposes, and about 3 bushels of seed is usually sown to the acre. Thin seeding is infinitely preferable to thick seeding, the straw then coming sturdy and so robust that there is little risk of the crop being beaten down by heavy rain, yet it is notorious that Barley generally is very much lodged this season. This will render much of the grain unfit for malting purposes, and more of it than usual will probably be used for cattle food.

For Beans preference is wisely given to deep rich soil, for it is an exhausting crop, and the land is highly manured for it. Winter Beans are generally considered preferable to spring Beans; but late spring frost is often fatal to the blossom of winter Beans, as was the case this year, many a field of Beans having suffered so much that the crop is worthless. To apply the teaching of this severe lesson to practice we must let the situation of each farm and its degree of exposure or otherwise guide us in our decision as to whether we shall sow winter or spring Beans, a moderate quantity only being grown in proportion to other crops. Bean meal mixed with the best linseed cake is used by many farmers for old sheep now being folded upon the second growth of Clover and mixed seeds, and it is found highly valuable in promoting a plump lusty condition and early ripening for market. It contains 25 per cent. of albuminoids and 44 per cent. of carbohydrates. Crushed Beans are also both nourishing and strengthening food for cattle and horses. Peas may be regarded as more generally useful, and more land is devoted to this crop. We like to have a stack of unthreshed Peas in cut for pigs during winter, both Peas and straw being nourishing food, and the meal may be mixed advantageously with other corn for all animals. This mixing of home-grown corn for home consumption is most desirable, not only from the real benefit derived from it by the animals, but also as a means of keeping down bills for oilcake and corn. Before all things let us strive to render the farm self-supporting, avoiding expenditure of capital altogether if we can after the farm is cropped and stocked, using only the profits arising from the money invested in the land.

How to crop and how to stock is daily becoming a more serious consideration; but the clergyman using his land for the production of farm produce chiefly for home consumption is not so much affected by it as a tenant farmer, yet when the surplus farm produce has to be disposed of it is important that that surplus should be a marketable commodity commanding a prompt sale. Perhaps the best course is always to aim at the production of first-class crops, to keep well-bred

animals—not necessarily of pedigree strains, but rather compact sturdy animals calculated to fatten quickly, and not big coarse animals, loose-limbed and of slow growth. For example, there is much difference even among pigs in this respect, and we have always found thick chubby pigs of close compact growth answer best for home use, as well as for bringing to early maturity as porkers for the London market, when they command a special price, always higher than that given for larger pigs.

(To be continued.)

WORK ON THE HOME FARM.

Between the hay and corn harvest the men have been set to hedge-clipping, trimming the sides of ditches, mowing the litter upon headlands, and clearing out stock yards. Several hundred cartloads of ditch scourings, the accumulation of several years' scourings, upon a neglected farm had become overrun with couch grass, and lay in the form of a wide ridge alongside several fields. It has now been carted into large heaps and burnt to destroy the foul grass and to afford a valuable supply of burnt earth and ashes for some land to be sown with Oats next season. A foul layer in process of being broken up and rendered clean for Wheat has been drained. This land is heavy, and much wanted draining; we had men to spare for the work, an old Whitethorn hedge left untrimmed for years afforded an ample supply of stout bushes close at hand, and so we have made bush drains 2 feet deep and 20 feet apart. Pea harvest and the mowing of Winter Oats and Barley is upon us. Peas have to be watched closely as growth ceases, and cutting is begun soon after the pods and haulm begin changing colour, for if this is not done till the seed is fully ripe much of it will be shaken out of the pods in the loading and carting to the ricks. Corn in the southern counties is fast ripening, and the harvest will soon become general. Would it not be well beforehand to consider if some of the ricks might not be made alongside the fields if there is a sound road close by? This would save much carting at this busy season of the year, and the threshing of the corn could be done in due course upon a fine day.

Avoid the expenditure of money upon young cattle unless they are exceptionally well bred, and can be had at reasonable rates; for it is probable that the importation of beef will increase rather than diminish. It is reported that the Marquis de Mores, who is slaughtering and forwarding dressed beef from various points on the Northern Pacific Railroad, offers to supply by way of the Lakes and the Grand Trunk of Canada 1000 carcasses weekly, to be delivered in Montreal at 3½d. per lb. A halfpenny per lb. more will pay steamer and refrigerator charges to Liverpool or the Thames, so that this practically amounts to an offer of beef wholesale in England at 4d. per lb. on board ship. It must not, however, be thought that the actual consumer will obtain this beef at much below 8d. per lb., for the middleman will inevitably step in between him and the ship's side, and the matter is only mentioned as one of many that are likely to tell against the farmer's interests. For our own part we regard sheep as a much safer investment, and we have recently purchased some full-mouthed ewes for folding upon the second growth of Clover. These sheep cost 25s. apiece; they are large animals, somewhat reduced by having been kept late with the lambs; but with a plentiful diet of Clover and mixed corn we may reasonably hope both to improve the land and to sell the sheep fat to the butcher at a profit.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain
1885. July-August.		Barometer at 394 and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	26	30.329	77.4	67.8	N.W.	65.7	90.4	57.2	126.5	51.2	—	
Monday	27	30.303	74.5	67.0	N.	67.2	86.6	60.1	129.3	54.3	—	
Tuesday	28	30.364	61.3	54.5	E.	67.2	76.2	58.7	122.7	57.9	—	
Wednesday	29	30.329	61.6	54.0	N.	66.8	71.6	57.7	117.7	55.6	—	
Thursday	30	30.294	58.7	54.6	E.	65.7	75.8	56.6	119.2	54.1	—	
Friday	31	30.248	58.0	53.4	N.E.	65.7	75.2	54.2	116.8	54.2	—	
Saturday	1	30.145	61.6	55.6	N.	65.8	69.4	54.3	105.2	54.5	—	
		30.287	64.7	58.1		66.3	77.9	57.0	119.6	54.5	—	

REMARKS.

26th.—A very hot cloudless summer day.
27th.—Hot, bright morning, some cloud in afternoon; cool evening.
28th.—Cool and cloudy, but beautifully bright afternoon.
29th.—Cloudy and cool, but some sun.
30th.—Dull till 11 A.M.; fine afternoon; cloudy evening.
31st.—Dull early; fine midday; cloudy evening.

1st.—Generally dull and cooler.
The temperature on Sunday was unusually high. During recent years temperatures of 90° have occurred only as follows:—

1884, August 11th	..	..	..	..	..	93.0 degrees.
1881, July 15th	..	..	..	..	..	94.6 "
" " 5th	..	..	..	..	..	92.7 "
1876, August 14th	..	..	..	..	..	92.1 "
" " 13th	..	..	..	..	..	92.3 "
" " July 15th	..	..	..	..	..	92.6 "
1874, " 20th	..	..	..	..	..	92.6 "
" " 9th	..	..	..	..	..	90.8 "

As the latter part of the week was cool the mean for the week not remarkably The continued entire absence of rain is becoming serious.—G. SYMONS.



COMING EVENTS

13	TH	
14	F	
15	S	
16	SUN	ELEVENTH SUNDAY AFTER TRINITY.
17	M	
18	TU	Basingstoke.
19	W	Shrewsbury Show (two days).

HYPERICUMS.

DURING June, July, and August one or other of the St. John's Worts gladdens the eye with their bright golden flowers, which are large salver-shaped, albeit there is such a centre-filling of anthers that the flowers appear almost globular, and being borne for the most part in dense corymbs or clusters have a telling effect in the summer sun, the effect being enhanced by their ample, somewhat yellow, rich green foliage.

Though they appear well at the time when the sun is strongest, yet they are in a certain sense shade-loving plants, but they are not seen to advantage under large deciduous trees that leave little moisture to minister to the ample foliage and profuse-flowering properties of the Hypericums. Shade of this description they do not thrive in; but if they can have a position where trees from a distance afford shade whilst their roots do not deprive the soil of moisture, so as to interfere with the growth of the Hypericums, then I readily grant they will do exceedingly well, and the bloom be longer than in the full sun. For shady places they are unique, but the less there is of it overhead the better. Hypericums no doubt like moisture in summer, but that they suffer more than other moisture-loving plants in a hot dry time is not admitted. The sum and substance of the matter is that they are low-growing shrubs, and as such are always better by being associated with their taller growing kindred in front of them to the north or south, or so that they will have their sheltering if not fostering aid.

Under ordinary circumstances the open border or shrubbery is the best place for them, and fine they are. They grow freely in any soil not cold and stagnant from water lodging in it, but succeed best in a light or free soil overlying good drainage or gravel, and if enriched with leaf soil or decayed vegetable matter it is better. They form very beautiful bushes in the front of shrubberies, and so choice are they that no herbaceous border kept in a semi-natural state is complete without them; indeed I can see that we must make a great departure in our arrangement of these plants if we desire to see them in all their natural loveliness, with symmetry added by the thoughtful cultivator.

Our soil is light overlying gravel, and Hypericums thrive capitally: they grow well, bloom freely, and spread rapidly. The richer the soil is made the better they seem to like it, but it is safe to opine that in a naturally rich soil they would make too soft late growth, and be liable to be cut down by severe weather. Indeed a good soil needs no addition to have them fine if it is properly prepared by digging or trenching before planting, with an addition of any manurial matter that can be spared as a top-dressing occasionally. Our shrubberies have every particle of decayed matter removed, and rarely does it or its equivalent find its way back as a surface mulching to protect the roots from the winter frost or the summer heat and enrich the soil. But shrubberies are as a rule neglected. They get nothing, not even timely attention in thinning and pruning. They get crowded, and

so become unsightly; but where the shrubbery is cultivated I question if there is any other part of a garden or grounds that with as little care and expense affords such a variety of objects of beauty and interest over so lengthened a period with every shrub given its due amount of space for development. I mention this more particularly to guard others against falling into the common error of planting shrubs without considering that they will need space for development.

Of the many forms of the genus under notice *H. calycinum* forms a dense mass of foliage about 1 foot high, and when covered with its large bright golden flowers is charming, and is admirable for a front position. *H. olympicum* forms a neat symmetrical bush about 15 inches high, not nearly so bold in aspect as *H. calycinum*, as the stems are slender, yet it spreads quickly, a bush 2 or 3 feet across covered with its numerous flowers, and in succession for six weeks, being beautiful. *H. uralum* attains to a height of 2 feet—I have it nearly 3 feet—and is of graceful habit, and the flowers are borne in clusters of about eight, and having great substance last some time, and are very effective. *H. nepalense* is similar to the last, being equally graceful and certainly as profuse flowering, the flowers being a rich golden yellow. Of the same type as the two last named is *H. triflorum*, which grows about the same height, or 2 to 3 feet, the shoots being long and slender and the flower heads depend or droop, which give it a graceful appearance; the flowers are large, over 2 inches, some nearly 3 inches across. It is from Java, and I cannot answer for its hardiness other than on a south border in light soil about 5 feet from a wall 10 feet high, and it ought to be stated that *H. uralum* and *H. nepalense* are in similar positions, and that they are herbaceous, as also is *H. olympicum*. *H. hircinum* is of shrubby habit, and forms a large bush 3 or 4 feet high, which when covered with its clusters of bright yellow flowers, as it is profusely in July or early August, is remarkably effective, and is not at all particular about position, doing well in any ordinary shrubbery. There is a variegated form of *H. hircinum* that is beautiful in foliage as well as flower.

As flowers in shrubberies are not over-plentiful in summer, the claims of this distinct and attractive family of plants appear to merit general consideration.—G. ABBEY.

GRAPE-GROWING AT BATH.

WHAT will some day become a noted vinery has already been described in these pages, but as most of us who are either personally acquainted with Mr. W. Taylor, or have profited by the many excellent instructive remarks upon various topics which he contributed when at Longleat, are doubtless much interested in his present undertaking, further information will not be unacceptable. Mr. Taylor, it will be remembered, has started Grape-growing for Mr. Alderman J. Chaffin, and a grand vinery, in addition to others already established, has been erected in that gentleman's pretty grounds at Larkhall, near Bath. The position chosen is on a rather sharp declivity with a south-west aspect, a great amount of excavation being necessary before the vinery could be built; but there is no doubt the site is highly suitable for Grape-growing, and as Mr. Taylor has long been an expert in ventilating there is no doubt he will fully utilise what might otherwise have proved a source of danger. The structure, though not quite so large as that at Longleat, may be said to be an improvement on that noted vinery, notably with regard to the substitution of top lap ventilators for the more expensive lantern method adopted at Longleat. The length of the house, which is span-roofed, is 140 feet, and the width 30 feet. It is glazed on an excellent imperishable system invented and patented by Mr. Chaffin.

There are three compartments, the central one much the larger. This is the only division yet wholly occupied with Vines. These were struck from eyes in March last year, and planted early in July. The whole of the sunniest side of the

house is planted with Muscat of Alexandria, and opposite to these all the best black sorts in cultivation are being grown. All made most satisfactory progress, but the Muscats grew much the strongest, and in nearly every instance the rods of these at pruning time were left 7 feet long. This season each rod is perfecting two large bunches, besides forming five stout and short-jointed canes. All the black Grapes were cut down to within 14 inches of the ground, and the Vines are carrying one or more bunches, some of which nearly touch the ground. Some of the bunches of Muscats weigh close upon 4 lbs., while Gros Maroc is about 2 lbs., Black Alicante 3 lbs. in weight, Madresfield Court, Alnwick Seedling, Mrs. Pince, Lady Downe's, and Gros Colman being equally good. The Vines are cropped in this young state—that is to say, before they have been planted twelve months, by way of a check to over-luxuriance, and this in preference to allowing the free extension of lateral growth, which plan finds favour with some growers. Every Vine has a lateral space of about 6 feet, and this they will ultimately thinly fill, but at present they are somewhat closely stopped, leader as well as laterals, the length of each rod being about 14 feet, and the consequence will be the formation of grand well ripened rods that will receive little or no shortening back at pruning time.

Another compartment is at present devoted to Tomatoes and fruiting Vines in pots, the latter having attained rather startling dimensions. One of these, a Muscat of Alexandria, I had the curiosity to measure. It was then fifteen months old, and was being fruited in a 19-inch pot. The circumference of the stem near the soil was $3\frac{1}{2}$ inches and $2\frac{1}{2}$ inches at a height of 3 feet, and in addition to perfecting a heavy crop of Grapes had made surprisingly strong leading and lateral growths. The largest bunch, perfectly set, measured 10 inches across the shoulders, 12 inches in depth, and would weigh close upon 4 lbs. Alnwick Seedling was also doing equally well, and this also was perfectly set.

The third compartment is planted with Tea Roses, and these are now large healthy specimens, producing great quantities of bloom during the winter months, which fetch very remunerative prices. Another house is also devoted to Tea Roses, and these, in spite of the very hot and trying weather, were in the cleanest and healthiest state imaginable. The favourite varieties are Isabella Sprunt, Catherine Mermet, Souvenir d'un Ami, Anna Ollivier, Comtesse de Nadaillac, Devoniensis, Jean Ducher, Madame Falcot, Marie Van Houtte, Perle des Jardins, Niphotos, and Souvenir d'Elise.

The Vines in the two other useful structures from which Mr. Chaffin has cut many winning stands of Grapes were, when taken in hand by Mr. Taylor, in rather a poor plight; but thanks to the masterly measures adopted, are now in excellent condition, and bearing heavy crops of medium sized, well set, and otherwise perfect bunches. The borders in this case are outside the house, and no restriction being placed on the roots, these had wandered to a great distance, the principal portion being found fully 40 feet from the house. Under such circumstances it would have been impossible to grow good Grapes, and a severe shortening of the roots was practised, this being done, if I remember rightly, in October, 1883, or while the Vines were in full leafage. A trench was cut at about 6 feet from the stems, nothing but woody old fibreless roots being found. The whole of these were unhesitatingly cut through and relaid in a breadth of fresh compost. The foliage being shaded from bright sunshine, and frequently syringed, was well preserved, and this was the means of inducing the formation of a number of rootlets on the old stumps, with the result of a marked improvement of the crops secured in 1884, and if the Vines continue to improve, as I have no doubt they will do, these also will perfect examples hard to surpass. These renovated Vines also include all the best black Grapes, as well as Muscat of Alexandria, and very serviceable they now are, affording ample proof of the wisdom of the apparently extra severe steps taken to recover them.

The borders of the large new house being wholly inside, they naturally require, and do already receive, great quantities of water; but supplying this, instead of being a laborious operation, is, by an ingenious contrivance of Mr. Taylor's, quite an easy matter. On the upper side of the houses two immense tubs are fixed, both of which hold several hogsheads of water, and one or both of these can be heated by a miniature boiler, to which they are simply connected by a flow-and-return pipe. A good supply of water is constantly at hand or running in, and at a most trifling cost for fuel the whole can be heated to the temperature suited to the borders, and which is conveyed to the different houses through small connecting pipes and distributed with a portable hose. Then, when liquid manure is required, this can also be added to the water in the large tubs and duly run through the houses, and, on the whole a more labour-saving invention could not well be added to this or other establishments requiring plentiful supplies of warm water. That Mr. Chaffin's vinery will eventually become famous I have not the slightest doubt, and all who are acquainted with Mr. Taylor will join with me in wishing him complete success.—W. I.

TEACHINGS OF THE DROUGHT.

THE lengthened and excessive drought of the present season has brought its own lessons, which are worthy of attention. On a couple of these lessons only I would ask permission to say something, and both of these have been learned long ago by old-fashioned gardeners, though perhaps not so much taken to heart nowadays as they ought to be by the younger men. The one is that we cannot succeed in a season like the present unless a system of deep cultivation is carried out; and the other, that farmyard manure is a necessity in this country, whatever it may be in other more favoured lands.

We might have imagined that the benefit of a deep tilth well cultivated would in itself be so apparent that this old-fashioned practice would never be called in question. However, it has been more than once considered an unnecessary feature of garden management. However, those who have for any length of time systematically abstained from cultivating their subsoils, or done nothing to make a good subsoil, must have had enlightenment on the subject in the present year. In our own case we have certain borders and portions of ground which are never trenched, and certain quarters which are duly trenched, and without exception the different treatment the soils receive in these several portions have been as faithfully indicated by the behaviour of the crops as if each had been labelled. And it is not so much a question of degree—the crop on the dug portions just a little worse than that on the trenched ground—but a question of success and failure; for crops have just been as good on trenched ground this year as in previous years. Peas, Beans, Potatoes, young Strawberries, Onions, &c., we have never had better. But, on the other hand, Peas, Potatoes, and very old plantations of Strawberries have been failures on dug ground. Fruit trees tell the same tale, and so do flowers. Roses though short-lived have been fine; Dahlias, in some places making no growth, are here making marvellous plants for the time of year. In only one case have we employed water, and that for the latest sowing of Peas, the ground in this instance having been moistened in order to insure the germination of the seed and again when the young plants were a few inches high. In the case of these and all other vegetables which have been sown or planted we have merely taken the precaution of sowing or planting deep enough for the seeds or roots to get at once out of reach of the dried upper strata of soil. The roots have naturally kept where the moisture was most abundant.

A somewhat curious phenomenon is apparent in the case of trenched ground as compared with ground which has been merely dug, and it is this. In the case of the dug ground the soil became absolutely dry from the surface downwards, while in the case of ground regularly trenched, with the exception of about a couple of inches on the surface, the soil underneath did not become dry to any appreciable extent. In both instances the hoe was duly employed, and no doubt in the latter case it may be presumed to have played an important part in conserving the moisture in the soil, although in the former it had no apparent effect.

The use of farmyard manure may be said to be not so much a gardener's question as one for the farmers, and that is so. But at the same time there can be no doubt that gardeners are inclining more and more to the employment of so-called artificial manures, and against an enlightened use of these we have nothing

to say. They play a most important part in producing good crops. However, we may be allowed once again to point out the danger (which the present summer has done so much to emphasise) of relying entirely upon these as so many farmers do. It would be safe to say that not 10 per cent. of the artificial manure put into agricultural land in this district will ever be returned to the farmer. For the want of rain to present it to the roots in an acceptable form on the one hand, and on the other from the want of roots to make use of the manure—though these points are reciprocal—the greater portion of bought manures have been practically lost. One of the most alluring inducements for farmers to use these has been the promise that, given a certain amount of plant food in the autumn or spring in the shape of these manures, and you are certain to recover their value with increase in the coming crop. The same inducement has been present to gardeners who employ them. The only danger is when farmyard manure is excluded to the reception of these. As I have just said, in a season like the present artificial manures are practically valueless unless water is artificially applied. On the other hand, farmyard manure, especially the more solid portions of it, are of a very great value. Wherever ground has been highly manured for a series of years, that ground has received an addition to its normal constituents, which in addition to other benefits confers the all-important one of retaining moisture in continued drought. And this part, which is played alike by fresh manure and the remaining portion of manure which has in the course of many years been applied to soils, is a fact which strikes at another modern idea, which with a good deal to commend it does not at the same time convey the whole truth in the matter. I refer to the advice often given not to waste manure by placing it out of reach of surface roots. For my own part I would freely advise people who do not trench their ground not only not to bury their manure deeply, but to go so far as to employ the most of it in the form of a mulching to be afterwards dug in; but where a system of trenching is carried out the whole of the operation becomes changed. We are not obliged to confine the roots of vegetables to a few inches of surface soil, susceptible to changes of season, but rather we have provided for them a vast resource out of reach of disturbing elements.—B.

ESTIMATES OF VEGETABLES:

VEGETABLE MARROWS.

In forming an estimate of the different vegetables I think it can only be arrived at by growing them under identical circumstances, and by taking an estimate of their relative value from some clearly defined standpoint. The conditions most valued in vegetables are quality and quantity of crop, the supply being early and prolonged—a certainty of crop of marketable produce. Someone may remark, "But some kinds of vegetables grown in gardens are valued for quality irrespective of crop." I admit taste in private gardens is very often fastidious, capricious, and arbitrary, and has little bearing on the value of crops from a commercial point of view. I think if the latter were to obtain in the values of vegetables prior to their introduction we should have fewer varieties—shorter lists—admitting of easier selection and manifest advantage in cultivation.

I have a piece of ground on which I decided to make a trial of Marrows, testing their values from the prices secured in the market, and although the season is young the results are so pronounced as to render an exposition not unwarrantable. The varieties were sown at one time and in every respect treated alike, with the result that Long White (short-jointed) is a long way ahead, and certainly is the best for market and general use. Next to this comes Moore's Vegetable Cream, the race being close, if, indeed, we ought not to pronounce a dead heat between that variety and Muir's Prolific Hybrid. Neither can compare with Long White, as they have not the taking size, and the number does not compensate for the discrepancy. Beyond Prince Albert, a green variety, there is nothing further worth to note in what may be styled the long or oval varieties; and to sum up these, Long White is very much the best, first through hardiness, second early and continued successional free cropping, and, third, size, quality, and marketable value, in comparison with which the others are nowhere; but from its being large and common is not so much grown in private gardens as its merits demand.

Novelty is something, often everything for the private grower. Because some new variety is different in shape and of small size it is thought to be "tender and delicious," very different to the long "big things" the gardener has grown for years and still persists in growing simply because reliable. Well, novelty is a very good thing in its way, but when it is had at the expense of

something else that answers much better, then I question the propriety of lauding things which, putting novelty aside, have little to recommend them, indeed are indifferent croppers and of so little commercial value as not to be worth growing. What, not Custard? No. Nor yet Pen-y-byd? Then it belies its name—the Best in the World. Of course I shall be set down as prejudiced against everything but what is big and coarse—a lot for little money. This is not the way the grower nor yet the consumer looks at things. They have an identity of purpose—viz., to obtain the most satisfaction to themselves. The grower seeks a crop that will afford the highest market value with certainty, or the least possible risk of failure through adverse climatic conditions; and the consumer is satisfied only with that combining the most for the money along with quality, for there is no more mistaken idea than that anything will take in the market. I have come to the conclusion that consumers are the best judges, setting values upon produce much in the same manner as is done at exhibitions—viz., the finest specimens possessing the highest quality carry off the prizes, and these bring the highest prices in the market. Estimate the Custard, Hibberd's Prolific, Cluster, Bush or Chusan, and Pen-y-byd by the monetary returns, and it will only take a sending or two to convince the most sceptical of the erroneous estimate formed of the value of many things in private gardens from a consumer's point of view, and of no marketable value.

I make no comparison from the other point of view. Those growing for home use may be satisfied with a Lady Apple better than with a Normanton Wonder, with a Golden Harvey as with a Ribston Pippin; but I hardly see the parallel of the comparison, for if we get a dozen small Apples where we get the big one we have a dozen cores and skins to one of the other, decreasing the value of the first relatively to its circumference, whilst the other is increased proportionately in utility.

I ought to say that I put out the Marrow plants in early May under handlights and in the open early in June of all the varieties enumerated, except Custard, and July's returns are taken as the estimate, and so conclusive is it that I could not forbear making it known. What a difference there is between growing for market and for private use—i.e., between growing to pay and to please. Only fancy getting 3s. 6d. per dozen for Long White and 1s. for Pen-y-byd, and more of the former in number than of the latter; and what is most remarkable of all is the Long White so long despised is now considered the best for table use. Is this a forecast that we are going to cast prejudices to the winds and have a thorough weeding out of many things that only perplex in name or number and cumber ground in gardens? Anyway, I am a thorough convert to utilitarianism in gardens, and hope to give you an estimate of other things from a like point of view, contingent, of course, on your finding a place for this first attempt of—UTILITARIAN.

MR. JAMES CUTBUSH.

I AM sure the severe shock I received on reading of the sudden death of my valued friend, Mr. Cutbush, will be shared by all who knew him, and that will be by a very large circle indeed, for no man was more widely known. For myself, I can truly say that among the many friends whom it is my privilege to count amongst professional horticulturists there is no one whom I have more learned to value and esteem, and no one whom I shall more sorely miss. I have had the pleasure of his friendship for a great many years. We have been associated together in many things, and the feeling that I shall never again be able to return his ever cheery greeting is to me a very painful one.

For a long number of years he has been associated with the successful culture of the Hyacinth, and in years gone by his name almost always headed the list of prizeholders, and he was, I believe, the originator of what has become a very common practice now—having exhibitions at his own nursery when his bulbs were in full bloom; but although these were the most noted portions of his culture, his nurseries were always up to the mark and all his plants well cared for.

In his private life no one was more thoroughly esteemed. A staunch member of the Church of England, and with a kindly feeling towards Christians of all denominations, he was ever ready for any good work which had for its object the welfare of those around him. A warm friend and a cheery companion, he always brightened any company into which he was cast; and although of late years delicacy of health, anxiety about business, and the increasing infirmity of deafness tended to chasten his exuberant spirits, yet they did not rob him of his pleasant and genial ways.

He was a loving husband and affectionate father, and his death must have been a heavy blow to his family, but for himself what more happy one could there be? He was engaged in one of those works of kindness in which he always took delight. He had frequently expressed to me his opinion that his life was very precarious, and I do not think it would have been a surprise to him that death was at hand. This year has been fatal to horticulture; George Baker, Charles Turner, and James Cutbush are

no common loss to the cause the readers of this Journal have so much at heart.—D., *Dial*.

PUSCHKINIA LIBANOTICA COMPACTA.

THIS small genus of Liliaceæ according to Baker's monograph includes only two species—*i.e.*, *P. scilloides* and *P. hyacinthoides*. They are closely allied to *Scillas* on the one hand and *Ornithogalums* on the other, the habit and general appearance of the plants coming much nearer the former.

P. scilloides, under which is included *libanotica*, typical, the variety illustrated in the accompanying drawing, and also *sicula* figured in the "*Flore des Serres*," is amongst the most welcome of our early spring-flowering bulbs, coming in early in March and lasting until the end of April, a time when flowers are most wanted. *P. libanotica* is not unlike *Scilla amoena* in habit, about 6 inches high, throwing up two or three radical narrow lanceolate leaves, and sheathing the flower stem a third of their length. The flowers are collected in a loose cluster or corymbose head, a little larger and deeper in colour than the ordinary *P. scilloides*.



Fig. 52.—*Puschkinia libanotica compacta*.

In the variety *compacta* the head is dense, flowers more numerous, and having a more distinct blue-coloured midrib running up each segment. Dotted here and there on the rockery or mixed border, they look very gay during their season, and we hope to see them treated in the same way as the *Crocus* and *Daffodils* in the woodlands.

Like several other bulbs of similar habit the *Puschkinias* can also be grown in pots with advantage, and if introduced into the conservatory or greenhouse they are useful for arranging in the front of the shelves or stages. When treated in this way they are preferably grown several in a pot, like the *Scillas*, for otherwise they do not produce so good an effect.—M.

PEACHES OUTDOORS.

WE may fairly suppose that the young shoots have gone through the processes of "thinning out" and training; also, that gross shoots have been pinched or stopped. In the early part of the month the fruit commences its last swelling, or, in southern counties, in the latter part of July; and this is the time I select for what may be termed a general stopping of the young sprays. This I have practised for years, and see no reason to depart from it. One effect speedily follows this procedure; that portion of the foliage which had been but recently produced attains a full development, and, of course, is in a position to add to the productive stores of the tree instead of taking from them. We all know that good

Vine-dressers do not encourage the very latest growth on their Vines; they pick them away, for reasons very similar to those urged for the Peach and Nectarine.

It may be readily imagined that stopping the enlargement or extension of a deciduous tree, in July or August, by checking all excessive demands for the ascending sap, must tend to a solidification of the wood; and the latter we call ripening. Since, however, it is seldom that all portions of a fruit tree are equally balanced as to strength, this is the very occasion to establish an equilibrium as far as art can effect it. It so happens that this stopping is highly conducive to this end, when managed judiciously, as I have often proved. Of course, as a general principle, the pinching a shoot in full growth has a direct tendency to stop its enlargement. If anyone doubt this, let him take some plant or tree on which to try the experiment; let him select two boughs, and pinch the one, and leave the other unpinched—such, followed up through a couple of years, will soon convince him of the truthfulness of this point.

Now, judicious "stopping" I have for many years made the groundwork of all attempts at equalising the power of the branches of Peach and other fruit trees. We have stopped the point of every shoot which needed no farther enlargement, and have equally refrained from stopping those which required an accession of sap, to bring them into a position to compete with the superior branches. I urge that all pains be taken to ripen the wood as well as fruit during the month of August. It is scarcely too much to affirm that on this month, more than any other, depends the success of the ensuing year.—E. R.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 105.)

RETURNING to Mr. Salter, we learn that at the period first mentioned in this chapter (1850) the flowers most frequently seen in the exhibitions which are still with us were *Annie Salter*, *Beauty*, *Christine*, *Nonpareil*, *Phidias*, *Queen of England*, &c., and that a great improvement had taken place in the interval of some fifteen years after that date.

Among the principal attractions in the great metropolis during the late autumn months the exhibitions of the *Chrysanthemum* at the Inner Temple must not be omitted. Here there are some thousands of these plants handsomely and effectively arranged in the two glass houses under the respective care of Mr. Newton and Mr. Wright. The former is well known among all *Chrysanthemum* growers as the able successor of Mr. Broome, while the latter occupies the position formerly held by Mr. Dale; and although it is generally believed that Mr. Wright is a comparatively young grower, it is a matter of fact that the extent of his show and the number and quality of his flowers were, last season, quite on a par and as well deserving of complimentary notice as those of his rival. In 1859 the number of varieties grown at the Temple are stated to have been 500, but this is probably a very much smaller number than that which the two exhibitions comprise nowadays.

The collection possessed by Mr. Salter in 1860 amounted to 750 distinct varieties, of which no less than two-thirds were large-flowering kinds, 150 of them having been raised in England, and the remaining one-third were *Pompons*, mostly of French origin.

The chief events in the history of the *Chrysanthemum* have now been brought down to something like a recent date, and as yet the florists of England, France, and the Channel Islands had by careful cultivation produced varieties of a far superior type to anything yet imported from the far east. As a matter of fact, it is extremely doubtful whether it had been considered necessary for the past thirty years or so to introduce anything of the kind from China or Japan excepting the two small-flowering *Pompon* kinds introduced by Mr. Fortune. There was, however, in Mr. Salter's opinion still room for further improvement, and others were also inclined to think so, especially in the varieties not of a white or yellow colour. He says, "Let it not, however, be supposed that this plant has now attained to such a degree of perfection as to leave no room for further improvement. Many additions are still necessary before even our ideal can be reached. . . . The improvements which have already taken place warrant the belief that much more may be achieved, and no enterprising florist will rest satisfied until he sees combined with perfection of form that diversity of colour which at present only exists in his imagination." It is doubtful whether at the time he wrote those prophetic words he was aware of the earliest efforts of a French florist who at that very time was commencing the culture of the *Chrysanthemum*, and who was destined to become in his own particular section the greatest rival Mr. Salter or any other individual raiser ever had, and to whom fuller reference will be made a few pages further on.

Somewhere about the year 1860-2 that enterprising plant collector and traveller, Mr. Fortune, introduced from Japan seven varieties of new and distinct kinds, which he, with his usual intuition in matters of this sort, felt certain would create almost a revolution in the *Chrysanthemum* world. In describing his discovery of them he says of the town of Ah-sax-saw that this place "is most famed in the vicinity of Yedo for the variety and beauty of its *Chrysanthemums*."

At the time of our visit they were in full bloom, and most certainly would have delighted the eyes of our English florists had they found themselves so far away from Hammersmith, the Temple, or Stoke Newington. I procured some extraordinary varieties most peculiar in form and in colouring, and quite distinct from any of the kinds at present known in Europe; one had petals like long thick hairs of a red colour, but tipped with yellow, looking like the fringe of a shawl or curtain; another had broad white petals striped with red like a Carnation or Camellia, while others were remarkable for their great size and brilliant colouring. If I can succeed in introducing these varieties into Europe they may create as great a change among Chrysanthemums as my Chusan Daisy did when she became the parent of the present race of Pompons." It is at this place that the Chrysanthemum, the national flower of Japan, is honoured every year by a special imperial garden party in the palace grounds. We are told that the Chrysanthemums here are unequalled throughout the world, and that some of the plants display from 375 to 430 fully developed blooms at a time.

Mr. Salter, of course, took them in hand, and succeeded in raising a few new varieties, while the Channel Islands growers, Mr. Downton and Major Carey, also added to the number within a very few years. It was, however, reserved for the French florists to make the very rapid strides in the improvement of this class of Chrysanthemum that has taken place, and the enormous number of novelties they have sent out in the past few years show how highly they appreciate the weird fantastic form and brilliant colours that distinguish the more recent productions. We can only give vent to a deep-drawn sigh of regret when we think what they might do if they could only be persuaded to deal with the incurved section in the same marvellous way that they have handled the Japanese; and it is also a matter of curiosity that the French, with their refined taste in so many other things, should look down upon the incurved section with what appears to be almost utter disregard of its beauty.

We have heard that the Japanese varieties had long been cultivated in Portugal previous to their introduction into England, but there is some little probability that those so referred to were more likely to have been varieties of the older Chinese Chrysanthemums, some of which had long loose tubulated petals with which our own florists were well acquainted about the year 1826, as several of those sorts bore so great a resemblance to the modern Japanese, and which if in cultivation to-day would be unhesitatingly placed in that section.

Up to 1865 the influx of the new varieties of incurved, reflexed, and large Anemone flowers continued, and many of our favourites made their appearance up to that date; some of them, such as Antonelli, Belladonna, Beverley, Cherub, Cleopatra, Dr. Brock, Emperor, Empress, Eve, General Bainbrigge, Golden Eagle, Golden Beverley, Her Majesty, John Salter, Lady Hardinge, Lady Slade, Lady Margaret, Little Harry, Miss Margaret, Mr. Brunlees, Mrs. Haliburton, Mrs. Pethers, Nil Desperandum, Prince Alfred, Queen Margaret, Venus, and White Christine being still worthy of mention.

The Chrysanthemum was now probably a more popular flower than ever. Societies had sprung up all over the country to encourage its culture, and besides the numerous local shows and those at the Temple, Mr. Salter's annual exhibition at Hammersmith and Mr. Adam Forsyth's at the Brunswick Nursery, Stoke Newington, were thronged during the month of November by thousands of admirers of the Chrysanthemum.

The new seedlings distributed between the date last mentioned and the year 1870 comprised among Pompons and other sorts Gloria Mundi, Golden Beverley, Dr. Lindley, Ossian, Golden Dr. Brock, Baron Beust, Lady Talfourd, Lord Derby, Faust, Fingal, Isabella Bott, Mrs. Heale, Mrs. Geo. Rundle, Pink Perfection, Rival, Little Harry, Beethoven, White Eve, Plenipo, Orange Annie Salter, all of which are tolerably familiar to us growers of the present day. At the same time it must be remembered that a large number of varieties had been raised, appreciated for a while, and then had gradually disappeared from cultivation, and as there can be but little interest in these it has been considered unnecessary to burden the reader with long lists of varieties no longer known.

We are now approaching the close of the history of a plant that is even now supposed by some to be in its infancy, and before reaching the conclusion of this treatise it will perhaps be permissible to make some slight reference to the subject of sports, as many of our well-known flowers have been obtained in that way. Without attempting to explain the scientific reasons for so curious a variation, a task for which the writer is by no means competent to deal with in a proper or scientific manner, it may be observed that there are numerous plants subject to the phenomenon of sporting, but that there seems to be none so liable to it as the Chrysanthemum. It is not, of course, every kind that sports so freely as others, and from what we can learn nearly all the early imported varieties from China were much more inclined to do so than the majority of those since raised

from seed; the old purple, the expanded light purple, the quilled light purple, the curled lilac, and the buff seem to have been those most sportive in the olden time. There are, too, many cultivators who have never in the course of a lifetime devoted to the culture of the Chrysanthemum been so fortunate as to secure one. A sport is defined by Mr. Beaton, no mean authority, as he lived in a time when some of the greatest changes were made in this popular flower, in something like the following words—viz., that a branch here and there would occasionally give flowers of a different colour from the rest, and when cuttings were instantly made from the sporting branch the new colour (and occasionally, though rarely, the new form) would follow and become permanent. The first sport noticed and fixed in this country originated from the old purple, the plant first introduced in 1790, in the garden of the Bishop of London at Fulham. This was treated in the way described above, and was called the Changeable White Chrysanthemum. Mr. Mean, gardener to Sir Abraham Hume, tells us that it occurred in the year 1802. There are many varieties now in cultivation which were obtained by this means, and most of us are aware that even sports will in their turn produce new flowers in the same way. Among the principal flowers that originated by this curious and interesting variation the following are fairly well known.

Alfred Salter	...	...	from Queen of England
Angelina	...	...	" Lady Slade
Barbara	...	...	" Barbara
Bronze Jardin des Plantes	...	...	" Jardin des Plantes
Canary Yellow Cherub	...	...	" Cherub
Emily Dale	...	...	" Queen of England
Geo. Glenny	...	...	" Mrs. Rundle
Golden Andromeda	...	...	" Andromeda
Golden Aurora	...	...	" Aurora Boreale
Golden Beverley	...	...	" Beverley
Golden Cedo Nulli	...	...	" Cedo Nulli
Golden Christine	...	...	" Christine
Golden Dr. Brock	...	...	" Dr. Brock
Golden Empress of India	...	...	" Empress of India
Golden Geo. Glenny	...	...	" Geo. Glenny
Golden Hermione	...	...	" Hermione
Golden Queen of England	...	...	" Queen of England
Golden Trilby	...	...	" Trilby
Hero of Stoke Newington	...	...	" Princess Teck
Lady Selborne	...	...	" James Salter
Lord Wolseley	...	...	" Prince Alfred
Miss Jeannie	...	...	" Anna de Belocca
Miss Oubridge	...	...	" Mdle. Marthe
Mons. Harman Payne	...	...	" Marguerite Marrouch
Mr. Bunn	...	...	" Golden Beverley
Mr. Cobay	...	...	" Prince of Wales
Mr. Bateman	...	...	" Miss Walker
Mr. W. Piercy	...	...	" Madame Pecoal
Mrs. Bateman	...	...	" Miss Wheeler
Mrs. J. Crossfield	...	...	" White Globe
Mrs. Heale	...	...	" Princess of Wales
Mrs. Marigold	...	...	" Miss Mary Morgan
Mrs. Shipman	...	...	" Lady Hardinge
Mrs. Todman	...	...	" Leon Lequay
Mrs. Weston	...	...	" White Venus
Nellie Rainford	...	...	" Rosinante
Niobe	...	...	" Nil Desperandum
O-Kiku	...	...	" Bismarck
Orange Annie Salter	...	...	" Annie Salter
Rotundiflorum	...	...	" Beverley
Venus (Jap)	...	...	" La Frisure
White Christine	...	...	" Christine
White Queen of England	...	...	" Queen of England
White Trevenna	...	...	" Rose Trevenna
W. Robinson	...	...	" Bouquet Fait.

and others.—C. HARMAN PAYNE.

(To be continued.)

PRUNING FRUIT TREES IN SUMMER.

I DO not believe in beginning this until August. It may be done earlier. Some practise it in June, and many in July, but I am not one of these. When it is done early, and when the shoots are in full growth, in my opinion more harm than good is done. Any shoot which has the top cut off it when it is in full growth immediately throws out a number of young shoots from the buds below where the cutting-off took place, and in the place of having one shoot, as was the case in the first instance, from one to a dozen will come in a cluster, and it is this which is most objectionable. In such a crowd of wood and leaves there will be neither fruit buds nor wood buds of any value formed for another year, and to secure these is the only object to be kept in view in summer pruning. By this time, or a little later, all the shoots have become very firm and pretty well ripened, and when cut back they do not rush into growth again, but the buds, which are more exposed than they were before cutting the tops away, develop more fully, and mature thoroughly into fruiting or leaf buds of the highest quality for next year. This is how we look on the matter, and what we find answer best in practice. No doubt the majority of your readers will understand summer pruning,

but some may not, and we may as well remark on it briefly. All fruit trees which have formed many young shoots lately will be now bearing much superfluous wood, as these shoots if left on until winter would have to be cut off then, but by doing it now the advantages just noted above will be secured. Where it is desired to extend the trees the main growths may be left almost their full length, but where fruit spurs are desired each shoot should be cut in to within 2 or 3 inches from the bottom. Where the shoots are crowded the majority should be cut closer in than this, and only one or two should be left a little longer than the rest. We are just beginning the work now, and will go over the Plums, Pears, Apples, and all the other trees requiring attention, both on the walls and in the open quarters. When carefully done summer pruning lightens the work of winter pruning considerably, and benefits the trees much more.—A KITCHEN GARDENER.

SPECIALTIES AT THE ANTWERP SHOW.

In the notes given last week the leading features of the Exhibition were indicated, but a few of the special classes require some supplementary remarks, which may be most appropriately given under their respective class headings.

BROMELIADS

The large distinct family of American plants—the Bromeliaceæ—is much more extensively represented in continental nurseries and gardens than it is in England, where, outside botanical collections, few are seen in general cultivation. In Belgium a great number of species and varieties are, however, grown, some being as remarkable for the brilliant colour of their flowers or bracts as others are for their curiously marked foliage; and, therefore, a good and representative display was exactly what would be expected at such an exhibition as that just concluded at Antwerp. Not only was this the case in the classes specially provided for them, but in the miscellaneous groups and amongst the new plants they figured prominently. There are some species which are unquestionably ornamental, and there are many others which can only be considered as curious, but our English collections might well be extended by the addition of several fine species. The principal collection was that of twenty-five species, with which the Etablissement St. Dorothée, Ghent, gained the gold medal, value 100 francs. This included some large and handsome plants, very notable being *Tillandsia tessellata*, about 4 feet in diameter, with the leaves beautifully "tessellated." The well-known *Chevalliera Veitchii* was in similar fine condition, and *Pourretia argentea* is distinguished by its narrow, silvery, spiny-margined leaves. *Vriesia fenestralis* and *Mas-sangea musaica* were both noteworthy for their prettily marked foliage, *Vriesia Pastuchoffiana* and *V. Binoi*, but especially the latter, being distinguished by their strong leaves 3 to 4 feet long. These were the most remarkable in the collection, but several others of slightly less merit were included, and in the group of ten with which the same "établissement" gained the leading prize were several handsome *Nidulariums*. Very striking amongst these was *N. anthocrater*, which has very broad, bold leaves, the shorter central ones being of a purplish mauve tint. The rich red *N. Meyendorfi* with *N. pictus* and *N. princeps* were prominent objects, the useful *Echmea fulgens* and *Billbergia rhodocyanea* also adding to the interest of the group. M. A. D'Haene and M. Moens also contributed creditable collections, comprising most of those already named, and, in addition, *Anistrum eburneum*, a rare species with green leaves, upon which were numerous darker spots. All the species with variegated leaves are ornamental, and are generally the most admired, and such might well be added to English collections, for they are easily grown and bear much rough treatment when employed for decorative purposes.

BERTOLONIAS, SONERILAS, AND ANÆCTOCHILUS.

The *Melastoma* family furnish us with several pretty foliage plants, but amongst the best of all, and ranking with these gems of the Orchid order, the *Aræctochili*, are the *Bertolonias* and *Sonerilas*, which are worthy of cultivation wherever beautiful plants are valued. These also in Belgium are specialties with several nurserymen, and particularly at M. Louis Van Houtte's establishment, where a good collection of varieties is grown. They are generally green spotted with silver in the case of the *Sonerilas*, and in the *Bertolonias* rose spots or veins often take the place of the silver markings in the others. M. L. Van Houtte secured the silver-gilt medal in the class devoted to these plants with some charming little specimens tastefully arranged in a glass case with *Selaginellas*. The best of the varieties were *Bertolonia Ohlendorfi*, B. *Rodeckiana*, B. *Van Houttei*, and B. *marmorata*, the last named having dark green and silver-veined leaves; of the *Sonerilas* S. *margaritacea* and S. *Hendersoni marmorata* were the best. M. P. F. Boutmans also had so good a collection that a silver-gilt medal of equal value was awarded him by the Jury. His plants were very healthy, and comprised good examples of S. *Alfred Mame*, deep green spotted with silver; S. *Baronne de Marches*, lighter green with silver spots; S. *Lili*, a pretty variety, of a uniform silvery appearance; and S. *Nelly*, heavily blotched with silver on a dark green ground. The chief *Bertolonias* were B. *gutta rosea punctatissima*, clearly spotted with bright rose, and B. *Echauti*, which has narrow light green leaves veined with silver.

One small but lovely collection of *Anæctochilus* gained M. Vanden Driessche, Ghent, the premier award—a framed silver-gilt medal—in the class provided for them. The plants were as fresh and healthy as could be wished by the most fastidious cultivators, and such as many would be delighted to see in British gardens where weakly leafless examples are rather the rule than the exception. In the collection named Lowi,

argenteus, *macodes*, *petola*, *Dawsonianus*, and *pictus* were the most beautiful in the colouration of their foliage.

PALMS.

It would be impossible to estimate the number of species or varieties of Palms represented in the various classes, and the number of specimens would amount to many hundreds, from those a foot high to the giants of 14 to 20 feet, with great spreading fronds forming a little tropical forest. In the central portion of the pavilion the *Compagnie Continentale* had some remarkably handsome specimens which, though not in competition, amply merited the honorary award of a gold medal, which was the recognition accorded them by the Jury. A dozen large plants were contributed, but amongst them was a pair of *Corypha Gebanga*, a particularly handsome Palm, which when of the size these had reached—namely, 12 or 14 feet in height, is both imposing and elegant, the leaves being fan-shaped, with long drooping points. Most of the others were better-known species, such as *Livistona australis*, *Rhapis flabelliformis*, *Areca sapida*, *Areca Baueri*, and *Kentia rupicola*, all handsome graceful plants of similar size to the two previously mentioned, and though surrounded by many other fine Palms, these stood out prominently. That superb species *Pritchardia grandis* was admirably shown by several exhibitors, but especially by MM. Dalliëre and Moens of Ghent, each of whom had plants of considerable size, with large well-developed fronds. Some good examples of *Cocos Bonneti* were contributed, but one from M. Spae, Ghent, about 12 feet high, with long slender graceful leaves, was uncommonly beautiful, M.M. De Smet Fières also having a specimen almost as large.

The ordinary *Kentias*, *Areca*, and *Cocos Weddelliana* were necessarily in strong force, and formed what may be termed the foundation of the Exhibition, but there were also numbers of rarities in addition to those already named. These were especially noticeable in the classes for new and rare Palms, in which M. Auguste Van Geert succeeded in gaining the premier prize of a gold medal for the following:—*Ravennea Hildebrandti*, *Pritchardia grandis vera*, *Chamaedorea Douranowi*, *Areca Dicksoni*, *Licuala uspenskyi*, *Pritchardia Moensi*, *Areca Kasarinei*, *Calamus Kentiaformis*, *Calamus trinervis*, *Pinanga Sanderiana*, and a *Kortbalsia* from Borneo. M. D'Haene, who followed in this class, also had some good examples of rare species. M. Moens was the only exhibitor of twelve new or rare Palms in the amateurs' class, and he was awarded the gold medal for vigorous plants, of which the following were the most noticeable. *Pritchardia grandis*, *Licuala grandis*, *Kentia Luciani*, *Ravennea Hildebrandti*, *Calamus viminalis*, *Arenga Moensi*, *Brabea havanensis*, *Thrinax Chucol*, *Pritchardia Nylistekiana*, and *Wallichia Moensi*. M. Dalliëre also had a collection which comprised several not named in the preceding, and they are therefore worth mentioning. The most distinct were *Phoenix Andersoni*, *Cocos flexuosa variegata*, *Williamus speciosa*, *Calamus caliocarpus*, *Thrinax graminifolia*, *Phoenix graminifolia*, and *Phoenix hybrida*. Several of these are unknown in British gardens, and in any case will continue scarce for many years to come; in fact there was not one that specially impressed us as being likely to supersede the best of the forms now so largely grown for decorative purposes. However, where a collection is being formed, and the object is to render it as complete as possible, they should all be included, for they possess the attractions which graceful or bold foliage always furnishes.

NOTABLE PLANTS.

A circular group of a variegated *Dracæna* from M. de Craen-Longhé attracted much attention, and the plants were suitably honoured by the award of a framed silver-gilt medal to the exhibitor. It was named *D. Douceti*, and was by some considered as a variegated *indivisa*; the plants differed, however, considerably from the ordinary *indivisa* in the leaves being much more narrow and stiffer, more like the *Yucca aloifolia*, but more graceful than that species. The leaves were also distinctly striped lengthways with green and white, the contrast being very clear, and there can be no doubt that the plant will become a favourite for decoration, as its habit is strong and compact without being too rigid. A silver-gilt medal was also awarded to M. Juchem, Vieux Dieu, for *Dracæna lineata variegata*, which was somewhat like the *D. Douceti* just described, but the leaves were slightly broader with a rather more distinctly marked variegation. It is, however, a decidedly ornamental plant, and either in a large or small state would be useful for many purposes. In the same class a plant of *Zamia tonkinensis* was exhibited by MM. Wartel frères, a very distinct Cycad, and one of the most graceful of the family; the leaves are pinnate, the pinnæ narrow, about half an inch wide, with the margin very neatly and regularly undulated; the general habit is also less formal and stiff than usually prevails in the family. Under the larger class for new plants, *Pandanus D'Haenei* was noted last week, but it was shown by so many exhibitors in this section that it deserves some additional attention. It is a very distinct species, and when the leaves under cultivation attain the size of the dried specimens (4 to 5 feet long and 9½ inches wide) which were shown with the plants, they will have a remarkable appearance. The slight glaucous colouring of the foliage also adds to the attractions of the plant, and the introducer, M. D'Haene of Ghent, has the satisfaction of seeing his name attached to a very distinct *Pandanus*.—L. CASTLE.

(To be continued.)

A ROSE GARDEN.

I HAVE a large lawn, sheltered but not overhung by trees, which I think will be excellent for a Rose garden. I shall be glad if you can give me some idea how to form the beds and the sorts of Roses to grow.

The position is 60 yards long, and about 40 wide, so will hold a large number of Roses. For any information I shall be obliged.—A. B. WELTON.

[The following plan and method of planting the Rose garden at Mentmore will form an "idea," but the design can be modified to suit the position.

As will be seen by reference to the plan and mode of planting, the system has been adopted of massing the very dark varieties together, such as the crimsons; also the deep pinks, pale rose colours, or white or very light Roses in separate beds, the groups being arranged so that the colours are seen to the best advantage, and that the due balance of the design is maintained. The central bed alone is planted in mixed colours, so that the surrounding beds are rendered more distinct. The beds are all on grass. The soil was taken out 3 feet deep, and fresh soil, consisting of three parts of fine old turf and one part of decayed cow dung, was employed for the Roses. After the Roses were planted in February a good mulching of rich dung was given to the beds.

The Rose garden is 130 feet in length by 88 feet in width, the round beds being 9 feet in diameter, and the segments of circles 4 feet. A is a 6 feet gravel walk all round. This walk is covered with an iron trellis 9

No. 5, Lælia, La Reine, François Michelin, Peach Blossom, La France, Madame Chirard, Mdle. de Stella, Souvenir de la Reine d'Angleterre, Duchess of Sutherland, Baronne Prevost, André Dunand, Princess Beatrice, Duchess of Edinburgh, and Michel Bonnet.

No. 6, Mdle. Thérèse Levet, Anna Alexieff, Mons. Woolfield, Baronne Prevost, Abel Grand, Madame Georges Schwartz, and Baronne de Rothschild.

No. 7, Alfred de Rougemont, Duke of Edinburgh, Prince Camille de Rohan, Fisher Holmes, Prince Humbert, Duc de Wellington, Comte Raimbaud, Baron Haussman, and Duchesse de Caylus.

No. 8, Duke of Edinburgh, Baron Bonstetten, Jean Cherpin, John Keynes, Black Prince, St. George, Pierre Notting, and Lord Macaulay.

No. 9, Princess Louise Victoria, Queen Victoria, Olga Marix, Madame Rivers, Coquette des Blanchés, Caroline de Sansal, and Madame Lacharme.

No. 10, Lady E. Peel, Mdle. Maurin, Boule de Neige, Mdle. Bonnaire, Amelie Hoste, Thyra Hammerick, and Coquette des Blanchés.

No. 11, Boule de Neige, Louise Darzens, and Caroline de Sansal.

No. 12, Thyra Hammerick, Amelie Hoste, Elise Boëlle, Gonsoli Gaelano, and Duchesse de Vallombrosa.

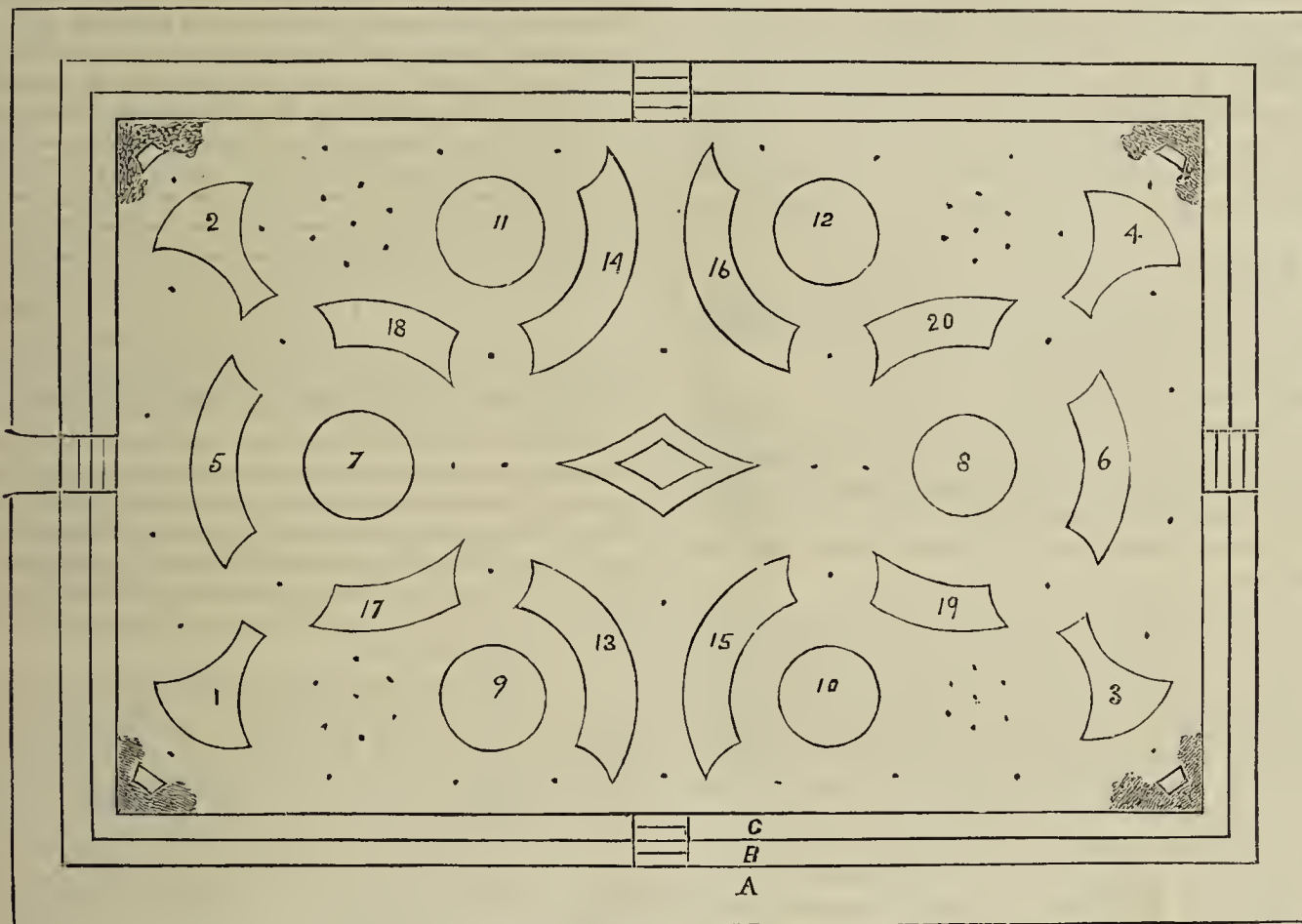


Fig. 23.—ROSE GARDEN AT MENTMORE.

feet high in the centre, and the trellis covered with climbing and other Roses. B is the border where the Roses are planted for climbing over the trelliswork. C is a grass sloping bank, so that the walk is about 18 inches higher than the Rose beds. The dots on the plan represent standard Roses. The Roses for the beds were supplied by Messrs. W. Paul & Son of Waltham Cross. Some are on their own roots, and some on the Manetti stock. All have grown and flowered well. The situation is high and open to the south and west, but sheltered from the north and east. The mode of planting the beds is as follows:—

Bed No. 1, Général Jacqueminot, Beauty of Waltham, Leopold Premier, Maréchal Vaillant, Glory of Waltham, Mdle. Marie Rady, Madame Charles Wood, Firebrand, Etienne Levet, Sénateur Vaisse, François Louvat, Charles Lefebvre, Maurice Bernardin, and Dr. Andry.

No. 2, Mdle. Marie Rady, Duke of Edinburgh, Charles Turner, Comtesse d'Oxford, Princess of Wales, Paul Verdier, Dupuy-Jamain, Mdle. Annie Wood, Alfred Colomb, Prince de Portia, Jean Lambert, Star of Waltham, and Queen of Waltham.

No. 3, Général Jacqueminot, Maréchal Vaillant, Sénateur Vaisse, Beauty of Waltham, Glory of Waltham, Dupuy-Jamain, Comtesse d'Oxford, Dr. Andry, Firebrand, Baron Haussmann, Maurice Bernardin, Etienne Levet, and François Louvat.

No. 4, Mdle. Marie Rady, Paul Verdier, Princess of Wales, Duke of Edinburgh, Comtesse d'Oxford, Dupuy-Jamain, Mdle. Annie Wood, Alfred Colomb, Exposition de Brie, Queen of Waltham, and Star of Waltham.

No. 13, Beauty of Waltham, Mdle. Decour, Madame Victor Verdier Camille Bernardin, La Brillante, Docteur Andry, and Charles Turner.

No. 14, Ferdinand de Lesseps, Madame Charles Crapelet, Alfred Colomb, Général Jacqueminot, Antoine Ducher, Duke of Edinburgh, Comtesse d'Oxford, Madame Charles Wood, and Prince Eugène Beauharnais.

No. 15, Beauty of Waltham, Camille Bernardin, Prince de Portia, Madame Decour, Madame Victor Verdier, La Brillante, Prince Camille de Rohan, Dr. Andry, Charles Turner, and Mdle. Marie Rady.

No. 16, Ferdinand de Lesseps, Maréchal Vaillant, Madame C. Crapelet, Duke of Edinburgh, Exposition de Brie, Alfred Colomb, and Comtesse d'Oxford.

No. 17, Madame Chirard, Reine du Midi, John Hopper, Anna Alexieff, Jules Margottin, Queen Eleanor, Madame Scipion Cochet, Edouard Morren, Madame Boll, and Paul Neyron.

No. 18, Paul Neyron, Paul Verdier, Charles Rouillard, Baronne Prevost, John Hopper, Perfection de Lyon, and Magna Charta.

No. 19, Madame Chirard, Reine du Midi, John Hopper, Jules Margottin, Anna Alexieff, Queen Eleanor, Madame Scipion Cochet, Madame Boll, Edouard Morren, and Paul Neyron.

No. 20, Paul Neyron, Paul Verdier, Baronne Prevost, John Hopper, Perfection de Lyon, and Magna Charta.]

HARDY FLOWERS AT KENSINGTON.—An extensive and beautiful display of hardy flowers is being maintained at South Kensington by Mr. T. S.

Ware of Tottenham, and fresh batches of flowers every day keep the exhibition constantly attractive. Just now Lilliums are very largely represented, especially the much-admired *L. auratum*, together with several varieties, and the old well-known but useful *L. tigrinum* is equally fine. *L. longiflorum* and others are numerous represented, together with a choice selection of the best summer-flowering plants.



GARDENERS who have changed their situations since the last edition of the "Horticultural Directory" was published, are invited to send without delay their new address to the Editor of the "Horticultural Directory," 171, Fleet Street, London, E.C., so that it may be inserted in the forthcoming edition.

— A MEETING was held at South Kensington on Tuesday last to form a Committee in connection with the proposed CHARLES TURNER MEMORIAL FUND. It was resolved that, in consideration of the great services rendered to floriculture by the late Charles Turner, a fund should be raised, the interest on which should be given as prizes for florists' flowers at such shows as should be selected by the Committee. Mr. H. M. Pollett was appointed Treasurer, and Mr. J. Douglas Honorary Secretary.

— A MANCHESTER CUCUMBER GROWER desires the address of "H. H., York," who communicated a note on Cucumbers in our issue of July 16th, 1885. If our correspondent has no objection to comply with the request he can forward his address to this office.

— GRAND NATIONAL DAHLIA SHOW AND THE TURNER MEMORIAL PRIZE.—The Committee for managing this Show have decided that the prize referred to on a former occasion shall consist of a ten-guinea silver cup, the objects of competition to be twelve Show and six Fancy Dahlias. The cup is to be competed for by amateurs only, and must be won three times before it becomes the property of the winner. Further particulars will be announced.

— A FIRST-RATE Grape-grower observes:—"The more we see of ALNWICK SEEDLING AND GROS MAROC GRAPES the better we like them. In looking through a vinery the other day we were pleased to see both in fine condition as regards size and finish of bunch and berry. The former variety, growing on a Lady Downe's stock, is found to set as freely as Black Hamburgh, upon which stock the Gros Maroc is doing admirably in every respect; the flavour which, when the Vine is grown on its own roots, Trebbiano, and such varieties, is spoken of as being 'coarse,' 'third-rate,' &c., is nearly as good as that of well-ripened Hambrughs—the result, no doubt, of the union with that excellent variety. Let those who are dissatisfied with Gros Maroc on account of its flavour inarch it on to a Black Hamburgh stock, and there will be no further cause for complaint providing the treatment be good."

— MR. IGGULDEN sends us the four useful notes following on Roses, Apricots, Tomatoes, and Spinach Beet. Short notes of a similar character on noteworthy subjects are acceptable from all who can obligingly contribute them from time to time.

— "A HOT WEATHER ROSE.—The hot weather has proved very trying to the Roses, and cut blooms are now very scarce. There is one noteworthy exception to the rule, this being the good old Bourhon Souvenir de la Malmaison. This variety, whether against sheltered walls or as dwarfs in the open, invariably flowers early and abundantly, and during August and till frost intervenes we are rarely without plenty good blooms or buds of it. The blooms, pinkish white in colour, are not of very good form, especially when fully expanded, but they last well, very few other sorts equalling them in this respect. On the whole I consider it one of the most serviceable Roses in cultivation.

— "AMONG Apricots there are none to surpass the Moor Park for quality, but unfortunately this variety is much given to gumming, whole limbs frequently dying back in consequence. Hemskerk is rather earlier, possesses a good constitution, crops well, and the fine tempting looking fruit are of good quality. It rarely fails with us, and if one or two trees were grown Hemskerk would be the variety selected.

— "READING PERFECTION TOMATO.—This variety is much liked in the neighbourhood of Frome, and I have seen very fine crops of it both in the open and under glass. Particularly good are the large clusters of it in the late vinery at Fairlawn, the Frome residence of John Bailly, Esq., and I should say it would be a difficult matter to find much handsomer fruit. They are very solid, smooth, round, and a bright rich red in colour—just the type, in fact, that find favour with exhibitors, and those fruits I tasted were very good in quality. It is a very strong grower.

— "SPINACH BEET.—Not only are the leaves of this an excellent substitute for Spinach during the winter months, but it also proves of great value during a dry season like the present. Summer Spinach is simply nowhere, but the Spinach Beet affords abundance of thinnings, and we can also venture to pick the lower leaves of the reserved plants, so luxuriantly do they grow. It is scarcely so good in quality as the ordinary Spinach, but good cooks can make it very nearly like it, and at any rate it is preferable to the New Zealand Spinach."

— THE following reply was given to a correspondent last year relative to his GRAPES NOT SETTING AND STONING. "The bunch you have sent indicates a deficiency of pollen at the time the Vines were flowering. Shaking the Vines, tapping the bunches, and lightly drawing the hand over them, or shaking the pollen on them from other bunches in which it is plentiful, will assist the fertilisation and consequently stoning of the fruit. Judging by the leaf sent, the Vine appears very healthy, and as the other varieties stone well the failure is not attributable to the deficiency of lime in the border, but is a case of defective fertilisation." Our correspondent now writes:—"Many thanks for your information on the Mill Hill Hambrugh Grapes I sent you last year (page 181, August 21st). I have carried out your instructions, and I am thankful to say I have no stoneless berries this year, only one bunch that I left to see the result of fertilisation." This experience may possibly be useful to others who find a difficulty in setting full bunches of Grapes.

— THE WESTON-SUPER-MARE AND EAST SOMERSET HORTICULTURAL SOCIETY will hold their thirteenth annual Exhibition on Tuesday, August 18th, in the Grove and Rectory Field, Weston-super-Mare. The schedule enumerates 122 classes, in several of the more important of which the prizes are very liberal. For instance, four prizes of fifteen, ten, five, and three guineas each, are offered for twelve stove and greenhouse plants, several others of proportionate amounts being offered in smaller classes.

— AT the monthly meeting of the BELGIAN SYNDICATE OF HORTICULTURISTS AT GHENT, on the 11th inst., the following members being present:—MM. A. Peeters, A. de Craen, L. de Smet, Ch. Spae, Em. Vervaeet, Fr. Dehois, Em. de Cock, A. Roseels, V. Cuvelier, and Romain de Smet—certificates were awarded for the undermentioned plants:—To MM. Vervaeet et Cie for *Dendrochilum filiforme*; to M. James Bray for *Cattleya Dowiana* and *Cypripedium Stonei*; to M. A. D'Haene for *Pandanus D'Hanei*; and to M. A. Peeters for *Cypripedium Morganiae*. Several cultural certificates were also accorded to the Compagnie Continentale d'Horticulture and others.

— MR. HUGH HENDERSON sends a short note on the SPLITTING OF GRAPES, in which he says "A Thinker" shirks all his questions," and observes—"It would be difficult to mention any natural law so universally acknowledged among gardeners as the one in question, and it would be as well if our correspondent would bring some facts to prove what he so persistently asserts, that moisture passing through the skins causes Grapes to burst, and that temperature is no agent in the operation." Perhaps sufficient has been said on this subject at present, though we consider it well worthy of the deep consideration of persons who have experienced difficulty in preventing the rupturing of the skins of certain varieties of Grapes. The action of osmosis is not dependent on temperature.

— MR. JOSEPH MALLENDER sends the following summary of METEOROLOGICAL OBSERVATIONS at Hodsock Priory Worksop, Notts, for July:—Mean temperature of month, 60.1; maximum on the 25th, 86.0; maximum on the 29th, 40.0; maximum in the sun on the 26th, 133.7; minimum on the grass on the 29th, 32.7; extreme range, 46.0. Warmest day the 20th, coldest day the 29th; mean temperature of air at 9 A.M., 62.5; mean temperature of soil 1 foot deep, 61.1; total duration of sunshine in month, 166 hours, or 33 per cent. of possible duration. We had one sunless day. Total rainfall, 0.32 inch. Rain fell on five days. Average

velocity of wind 65 miles an hour; it did not exceed 400 miles on any day, and fell short of 100 miles on three days. It was the driest month of any during the last ten years except January, 1880. Temperature about the average, and very similar to last year. Sunshine rather more than last three years, but less than in 1881. Rain very much needed at the end of the month.

— GARDENING APPOINTMENT.—Mr. S. Lyon, recently gardener at Sundridge Park, Bromley, Kent, has been appointed gardener to Viscount Bridport, Cricket St. Thomas, Chard, Somerset.

— TRACHELIUM CŒRULEUM (BLUE THROATWORT).—A correspondent writes:—"This attractive perennial from the Mediterranean region belongs to the Campanula family. It is a sub-shrubby branching plant, from 18 inches to 30 inches high, producing in summer large clusters of pale blue flowers. It is not only a very attractive border plant, but it is also one that deserves to be grown in pots. Thus grown it will compare favourably with *Statice profusa*, which plant it resembles in habit of growth, form, and colour of flowers, either set up in a miscellaneous collection of plants in the exhibition tent or for greenhouse and conservatory decoration. Mr. Molyneux of Swanmore Park, Bishop's Waltham, who staged a well-grown plant of it in his first-prize collection at the late Southampton Show, which was very much admired, finds it very useful and easily grown for the purposes indicated above. It is also a very suitable plant for vases. It is easily propagated by seed, cuttings, or division of the roots; the latter is the best and certainly the quickest way of working up a stock of it, potting the divisions in spring in suitable sized and properly drained pots, in three parts light loam and one of leaf mould, with sufficient sharp sand added to render the whole somewhat porous, and be afterwards grown on in a cold pit or frame like *Spiræas* or such like plants."

— MR. JOHN T. CAMPBELL relates in the "American Naturalist" his discovery of one of the causes of the phenomenon of PARTICULAR TRACTS OF LAND BEING COVERED WITH A SIMULTANEOUS, NEARLY EXCLUSIVE, GROWTH OF TREES OF A PARTICULAR SPECIES. Some have ascribed the phenomenon to a peculiar fitness of the soil to particular kinds of vegetation which he does not find to exist. His explanation is very simple, and is to the effect that the matter lies wholly or mainly in the fact of the ground being in a fit condition to receive the seeds of the various species when they fall upon it. Seeds of different kinds fall at various seasons, and when the ground is in various conditions as to moisture, &c. Those that find the ground in good condition sprout and grow if no accident occurs to remove the plants when very young. Mr. Campbell has tested this view in his surveys in the occasionally flooded bottom-lands of the Wabash River, and illustrates it by following the futures of the seeds of three species of trees. The balls of the Sycamore or Buttonwood begin falling early in the spring months, and if a flood is receding at the time they stick to the soft moist banks wherever they touch them, and particularly along the highest parts of the sand bars. Were it not for the subsequent floods in the same spring no other trees could grow, for these would occupy the ground. But they are easily killed during their infancy by overflows, and this is what happens to most of them. The Cottonwood is the next in order of shedding seed, and if another flood is receding while this is taking place it will have killed all the Sycamores which it has covered, and sprout the Cottonwoods. These in turn may be killed by the next floods. It is the turn of the Maples next to shed their seed and try for the ground. If either of these species succeed in making wood without a flood it will hold the ground, and its rivals will not be able to get a place. Last spring the edges of the successive plantations escaped the next floods after the seeds fell upon them, and Mr. Campbell could see along the river banks three belts of young trees, and distinguish them by their general appearance. The upper belt was of Sycamore, the second (downward) of Cottonwood, and the third of soft Maple. In June a bigger flood came than any that caused the seeds to sprout, and killed all the young trees.—(*American Cultivator*.)

A VISIT TO BARON SCHRÖDER'S GARDEN.

AND this was how it came about. The Horticultural Club had been arranging about its annual outing, and knowing how well its members had been cared for at Slough it was determined to make that again the starting point. The Royal Gardens were talked about, and our President, Mr. John Lee, suggested Baron Schröder's as well, but when we came to think over it we considered, as there were ladies with us, that enough was as good as a feast, that we should find as much at The Dell as would satisfy a very hungry horticulturist, and so we determined on it. It was

on a perfect day—last Thursday—that we met a somewhat less number than usual, for the great heat rather frightened some; and it was, moreover, a great disappointment to us that our "guide, philosopher, and friend," Mr. Harry Turner, was prevented by business from accompanying us. Before starting on our drive through Windsor Park to Baron Schröder's we visited the Royal Nursery at Slough, and enjoyed such a treat as is nowhere else to be had, seeing Mr. Turner's magnificent collection of Carnations and Picotees. House after house was filled with grand specimens in pots; out of doors immense collections in pots also were to be seen, while beds after beds of seedlings of the tree or fancy type were in full flower. Some idea of the magnitude of this collection may be gathered from one piece of statistics alone. In the month of October, when the layers are placed in small pots to winter in, there were 210 frames, each 6 feet by 4, filled with them. Of course all the very best kinds are here grown in quantity, and the grass was in fine condition, having that glaucous look so much desired by growers of this beautiful class. In a rapid survey of the houses the following were noted as being especially fine:—*Scarlet Bizarres*.—Arthur Medhurst, Charles Turner, Fred, George Rudd, John Buxton, Mars, Rayner Johnson, and Robert Lord. *Crimson Bizarres*.—Albert, Chancellor, E. S. Dodwell, H. L. Mayor, J. D. Hextall, John Simonite, and Sultan. *Pink and Purple Bizarres*.—James Taylor, Sarah Payne, and Unexpected. *Purple Flakes*.—Dr. Forster, James Douglas, Mayor of Nottingham, and Squire Meynell. *Scarlet Flakes*.—Annihilator, Flirt, John Ball, Jupiter, Matador. *Rose Flakes*.—Rob Roy, Jessica, Tim Bobbin, and Samuel Norman. *Picotees*.—*Red-edged*.—Dr. Epps, Emily, Grosteen, Horace Major, Mrs. Bower, Queen of Summer, Violet Douglas. *Purple-edged*.—Baroness Burdett Coutts, Clara Penson, Her Majesty, Mary, Mrs. A. Chancellor, Rev. J. B. M. Camm, and Zerlina. *Rose and Scarlet-edged*.—Constance Heron, Fanny Helen, Louisa, Mrs. Payne, Edith Dombrain, and Royal Visit. The yellow Picotees were also very beautiful.

Having taken a good view of these, over which we could have lingered for a much longer time, we re-entered the brakes and drove through the Great Park. We had intended to have visited the Royal Gardens, but we found that this would occupy too much time, and so we made at once for The Dell, where we were met by Baron Schröder's excellent gardener, Mr. Ballantyne, and were conducted to the house, which is most charmingly situated on the skirts of Windsor Forest. From the dining-room window and the terrace there is a most exquisite view of Windsor Castle; you look down through a vista of noble trees over the Dell, from whence the house derives its name, and there in the distance stands out the noble pile of the Castle glittering in the bright sun, and justifying its claim to be one of the grandest, if not the grandest, of all the palatial residences of European sovereigns. Mr. Ballantyne kindly took us into the forest, where from a point of view opposite Miss Seymour's residence, there is if possible a more lovely view, but both scenes will long remain in our memory.

The house is not a large one, but has been built and added to with a good eye to comfort. There is at the garden side of it a long glass verandah, which when filled with flowers must be excessively pretty. At the north side of the house there is a very beautiful fernery, containing many choice specimens of Tree and other Ferns. The grounds are laid out with very great taste, trees judiciously planted, bright vistas through them, and Conifers seem to do remarkably well there. One of our members is a gentleman who is an expert in such matters, and he said that whoever laid it out was an artist, and that he had rarely seen a place more beautifully arranged. There is on the lawn a parterre of light bedding out, but at this time sadly wanting moisture, while all around are choice trees and flowering shrubs of all kinds, including perhaps one of the choicest collections of Rhododendrons in the country, the older varieties having been gradually weeded out and their place taken by all the best seedlings of Waterer and others. The high road to Egham passes close by the grounds, and the garden proper being on the other side, a subway has been made under the road, so that you pass from the pleasure ground to the garden without leaving the place. It is in this garden that the grand collection of Baron Schröder, especially of Orchids, is to be found. There is also a goodly range of vineries, in which there was a magnificent crop of Grapes. One house of Black Hamburgs had been cleared in the Ascot week, but there were houses full of well-developed, beautifully coloured bunches, also Muscat of Alexandria, Foster's Seedling, Madresfield Court, and other good varieties. There were also Peach houses with even crops of luscious fruit, all bearing witness to the intelligence and skill of Mr. Ballantyne.

It is known to everybody that Baron Schröder possesses one of the choicest and most select collections of Orchids in the country, vieing with Sir Trevor Lawrence and Mr. Lee, but July is a bad month to see Orchids in flower. There were, however, some Cattleyas, Vandas, Cypripediums, and especially that beautiful variety of *niveum* which obtained a first-class certificate lately. The whole collection showed that the plants were most carefully looked after, and rewarded their care by great luxuriance and health. In another house there was a beautiful collection of Zonal Pelargoniums, Tuberous rooted Begonias of the very best kinds, and also a large number of the deliciously sweet-scented Tuberose finer than I have seen them for some time, but the plant which struck me as most remarkable was the very finest example of *Alocasia Veitchii* that I have ever seen. The leaves were at least 3 feet long, and perhaps more, the plant about 4 feet through, and the leaves fall down all round in the most perfect manner. I have often seen specimen plants at our great exhibitions, but never one comparable to this. Allamandas and other stove plants were luxuriantly in flower, but we had not time to linger over these, nor to visit the Pine pits, where some splendid fruits are produced; in fact we all felt that our whole day might have been very profitably occupied in

this beautiful and interesting spot. I should say that through the kindness of the Baron we were permitted to see the small but choice gallery of pictures of the modern schools. There are some beautiful examples of Jerome, Paul Delaroche, Meissonier, Alma Tadema, &c., and a wonderful, perhaps unique, collection of signet rings.

After spending a couple of hours here we again started for Virginia Water, and thence on to Ascot, where, at the Royal Hotel, dinner had been arranged for us. It is an old saying, "Good wine needs no bush," and so I suppose this hotel stands in no need of commendation; but in cleanliness, in attention to the wants of visitors, and in moderate charges, I do not think it is to be excelled, and anyone who delights in beautiful English scenery might do worse than sojourn here for a while. We left Ascot at seven, and arrived at Slough in time for the 8.37 train to Paddington, and have again to score a decided success in our club outing, and which has each year afforded those who took part in it so much pleasure.—D., Deal.

THE ORCHIDACEOUS PLANTS OF HEREFORDSHIRE.

[Read at the Woolhope Naturalists' Field Club by C. G. Martin, Esq., President.]

REMARKABLE as our county is for many natural products, it cannot be said that the Orchidaceæ, particularly the rarer species, are so abundant as they are in some other counties in England. It is a defect which need not be regretted, except perhaps by an enthusiastic botanist. A very slight consideration will show that it may be regarded not only with equanimity, but with cheerful resignation. Orchids are seldom found upon the best soils. Where they abound the land is almost certain to be of an inferior quality, or indifferently cultivated. On poor, hungry, water-logged pastures, in wet woods and bogs, or upon thin chalky downs or bare limestone ranges, the Orchids will be generally found growing most plentifully and luxuriantly. The construction of a large proportion of them would lead us to expect this. Plants which have thick, fleshy, bulbous roots and succulent stems require excessive moisture; a large proportion of the Orchidaceous group are of such a nature. Instances are known of pastures that once abounded with Orchids which have altogether disappeared, as the result of thorough drainage and better cultivation. We have no bogs in Herefordshire. We have not a wide extent of comparatively useless moorland. We have no chalk downs. Our limestone ranges are too argillaceous, and too poor in carbonate of lime, to satisfy the fastidious requirements of the higher classes of Orchids. In the British Flora the Orchidaceæ comprise sixteen genera and thirty-nine species. In our county we have nine genera and twenty-one species, with possibly four varieties, which are disputable. Some of these are very rare; but, so far as I know, many of the most refined, the most highly specialised of the Orchids, have never been found in Herefordshire. My own knowledge of the county is very much limited to the district immediately around our city, but I am greatly indebted to the Rev. Augustin Ley for much generous and helpful information as to the habitats of Orchids in other localities, to which I have never had access. Of the twenty-one species recorded for the whole county I have found fifteen in our own neighbourhood.

I will not weary with any scientific description or technical details of the Orchid family which can be found in any "Handbook of the British Flora." I shall endeavour to give a general outline of each plant, and the locality where it has been found, together with anything of special interest in connection with it.

1, *Epipactis latifolia*, or Broad-leaved Helleborine, is common in woods and shady places, and blossoms between July and September. The flowers vary somewhat in colour from purplish-green to deep purple. I have found them in Acornbury Woods, Haugh Wood, and Rotherwas Woods. Mr. Ley reports them from every district into which our county has been divided. There is a very curious feature connected with this flower which deserves recognition. Sir John Lubbock says, "This flower has special attractions for wasps;" and he quotes Darwin as saying that, "If wasps were to become extinct in any district so would *E. latifolia*."

[Var. *E. media*, or Intermediate Helleborine. Var. *E. ovalis*. Var. *E. purpurata*. Babington considers these varieties the same as *E. latifolia*, the differences being so trifling as not worthy of being classed as separate species.]

2, *Epipactis palustris*, or Marsh Helleborine.—This is a beautiful flower. The florets are few, whitish, tinged with crimson, somewhat drooping, and they grow in a lax spike. It is rare, flowers in July and August, and grows in wet meadows and marshes. In our county it has been found at Ridgway Cross, Cradley. Lees, in his "Botany of Malvern," says "it is plentiful at Tedstone, on the banks of the Sapey brook." It has also been gathered on the rough moors, Mansel Gamage, at Burghope, and on the Moseley Common, Pembridge.

3, *Cephalanthera grandiflora*, or Large White Helleborine, is a rare and handsome plant. The flowers grow in a distant spike, and appear during May and June. They are of large size, sometimes as pure as snow, sometimes greenish-white, but more frequently delicately cream coloured, with a small yellow lip marked with raised lines. The leaves are broad and bright green. Until recently it was reported from only two localities in Herefordshire, Huntsham Wood, and Lord's Wood, on the Great Dward. But at our last field meeting Dr. Wood of Tarrington brought some fine specimens which he found in the parish of Canon Frome.

4, *Cephalanthera ensifolia*, or Narrow-leaved white Helleborine. This is a rare plant of mountainous woods on limestone. The Rev. Frank Merewether brought me three or four plants in 1865, to ask me its name. The next day, by arrangement with him, I went to Woolhope, and he took me to the spot in Haugh Wood where he found it. Every year since, about the end of May or the beginning of June, I have gone to the same place and found it growing pretty plentifully. The only other place in Herefordshire where it has been gathered is Huntsham Wood. (Miss Lewis of Ludlow, informs me to-day she has found it at Bringe Wood, near Ludlow, within the county of Hereford). It is a very elegant plant, blossoms somewhat spiked, white, the lip with slightly elevated lines on the disk, and a yellow spot in front.

5, *Listera ovata*, or the common Twayblade.—This, though inconspicuous,

is one of the commonest of our Orchidaceous plants (specimens produced). It is readily distinguished by its two broad, glossy, ovate leaves, sometimes from 3 to 4 inches long, about half way up the stem. It varies in height, according to the locality where it grows, from 6 to 18 inches. The flowers are green, and they form a long loose spike, quite unattractive in appearance. But though it has so modest a bearing, there are few of our Orchids that are more interesting, and none of them show more contrivance and design in their structure. Hooker, Darwin, Sprengel, Sir John Lubbock, Dr. Müller, and others have spent hours at a time in watching its mechanism, and Darwin devotes no less than thirteen pages ("Fertilisation of Orchids by Insects," pp. 139-152) to his description and diagrams of it, and remarks upon it. It has great attractions for insects.

6, *Neottia nidus-avis*, or Bird's Nest Orchis.—This most remarkable plant, in appearance more like one of the Orobanchæ, has its stem, leaves (or rather scales), and flowers all of a dingy-brown hue. It is rather rare, but it is well represented in Herefordshire. It is said to have received its old name of "Bird's Nest" from its peculiar root, which consists of very numerous tufted, cylindrical, fleshy fibres, and are supposed to remind one of the sticks used by some birds in the construction of their nests. This Orchis has been found in every district in our county. The members of the Club gathered them abundantly at our last field meeting in Acornbury Woods, on the 18th of last month. They have been unusually abundant this year in other counties as well as our own.

7, *Epipogium aphyllum*, the yellow-flowered Leafless Orchis.—This might almost be called the Herefordshire Orchis. It is fully described by Mr. Edwin Lees in his "Botany of Malvern." His description is from a specimen sent to him by the Rev. Gregory Smith, and was gathered in a copse called "The Paradise," close to Sapey Brook, at Tedstone Delamere, in 1854. It was discovered and gathered by Mrs. Anderton Smith. It was dug up and placed in the Rectory garden. No other specimen has been since discovered, though carefully sought for. It has been found twice in a wood near Ludlow by Miss Lloyd in 1876, and by Miss Peel in 1878. It is, without doubt, an extremely rare plant. It is known on the Continent, but even there it is most rare. Miss Lewis, of Ludlow, says that she saw the plant found in 1876 and 1878. There were three or four distant florets on the stem, similar to the Bee Orchis, but they were filmy and semi-transparent in appearance. As it has been twice found within the last decade on the borders, if not within our county, we may hope that it will be seen amongst us again; and if it should be I venture to express the hope that it may be permitted to grow and seed, and have every chance of reproduction.

8, *Spiranthes autumnalis*, or Lady's Tresses, is a somewhat rare plant, but may be found in certain districts of our county, about the end of August and during September. It is reported from Lyston, Orcop, and St. Weonards, from Coughton Marsh and Coppet Wood Hill, also between Hoarwithy and Carey. Mr. Ley found it at Hole-in-the-Wall, Mrs. Armitage at Dadnor, and it has been gathered in Gorstley Quarries. In central Herefordshire it is known to grow on the south side of Bishopstone Hill, and the Rev. R. H. Williams says that it grows plentifully at Byford. Mr. Crouch reports it from his district in the north-west; Mr. Lingwood from Llanthony; and I found it at Cublington in the parish of Madley. The flowers are white, with a sweet, though not powerful, scent of almonds. They are spirally arranged, the florets all pointing one way, sometimes from right to left, sometimes from left to right. It is an especial favourite with bumble bees. They begin with the lowest floret on the stem, and climb to the top, extracting the nectar from each, "in the same manner as a woodpecker climbs up the bark of a tree in search of insects."—(Darwin).

9, *Orchis mascula*, or early purple Orchis, the "Cuckoo Flowers" of our childhood and the "long purples" of Shakespeare is probably the commonest of our native Orchises. It is a beautiful plant with spotted leaves and richly dyed petals, and is well known as the earliest of the class. I have often found it in March, and in April it is pretty general on indifferent pastures, in wet woods, in shady lanes, and even on the roadside. Bishop Mant wrote of it—

"In that broad field of springing grass,
First of his lip and horned class,
The early-flowering Orchis show'd
His smooth and spotted leaves, and glow'd
With spiky stalk elate, and head
Of spiral blossoms, purple red."

It is generally admitted that the *O. mascula* is the flower referred to by Shakespeare in Hamlet, Act iv., Scene 7, at the meeting of the Queen and Laertes, when she tells him of the death of Ophelia:—

QUEEN.—Your sister's drowned, Laertes!
LAERTES.—Drowned! O, where?
QUEEN.—There is a willow grows aslant the brook,
That shows his hoar leaves in the glassy stream.
There, with fantastic garlands did she come,
Of Crow-flowers, Nettles, Daisies, and Long Purples,
That liberal shepherds give a grosser name,
But our cold maids do Dead Men's Fingers call them.

The name which Shakespeare delicately hints at, and the other name which he cites, have both been preserved in old Herbals. They are unquestionably Orchids. They could not apply to any other class in the floral world. The identity of the "Long Purples" with the Orchis family has thus been fixed by Shakespeare himself.* He did not write with the precision of a botanist, but with the freedom of a poet. It is probable that he did not know the scientific distinction between one species and another. He looked upon flowers as "charming factors in the general loveliness of nature," and he did not hesitate to use their common well-known popular names. "Dead Men's Fingers" was the vulgar name applied to *O. maculata*, *O. latifolia*, and *Gymnadenia conopsea*, because of their peculiarly shaped, pale, palmate tubers (specimens shown), which are supposed to bear certain resemblances to the human hand. There is a touching old ballad that tells of the sorrows of a maiden who had lost her lover by death, and this name, with a slight variation, occurs in one of the stanzas:—

"Then round the meddowes did she walke,
Catching each flower by the stalke,
Such as within the meddowes grew,
As Dead Man's Thumb and Harebell blew;
And as she pluckt them, still cried she,
Alas! there's none e'er loved like me."—(Roxburghe Ballads.)

* Warburton, who wrote about a century ago, says "Long Purples" is the vulgar appellation for a beautiful species of wild flowers. Their botanical name is Orchis.

10, *Orchis morio*, Green-winged Meadow Orchis.—In our county this is perhaps almost as universal and common as the preceding. It used to be called the "Fool's Orchis" in my boyhood, because heedless and unobservant people were supposed not to discriminate between it and *O. mascula*. The flowers form a loose spike, and may be readily distinguished by their sepals, which, whatever the colour of the florets, are marked with green veins, and curved upwards so as to form a kind of helmet over the rest of the blossom. I have gathered them in damp meadows near to Hereford of every shade of colour, from white to deep purple, and sometimes richly variegated.

11, *Orchis maculata*, or Spotted Paimate Orchis, is as common as both the foregoing. It is a very elegant plant. The flowers are a delicate lilac, and sometimes almost white. They are spotted more or less with purple. So also are their leaves. They grow abundantly in our woods, lanes, and pastures.

12, *Orchis ustulata*, Dwarf Dark-winged Orchis.—I have gathered this pretty peculiar little plant frequently on the chalk hills of Surrey, but never in Herefordshire. It is not unknown in our county, though, unquestionably, it is very rare. Mr. Lingwood found one specimen in 1859 in the meadows by the Wye at the foot of Coppet Wood Hill, and he also found it in one other locality. It has been reported to be growing "in plenty" in a meadow near Colwall, and Mr. Lees received some specimens in 1868 from limestone slopes at Mathon.

13, *Orchis latifolia*, or Broad-leaved Marsh Orchis, is more widely distributed, but is not common. It is described as a tall and somewhat slender plant, the flowers usually deeper coloured and less variegated than *O. maculata*, with a hollow stem, and leaves remarkably erect and pointed. Mr. Lingwood found it at Orcop. Mr. Purchas in a damp meadow near the Castle Brook, Bill Mill. Mr. Ley at Ashe, at Hoarwithly, at Sollershope, and at Eaton Bishop. It has been reported from Boshury, Egleton, and Widemarsh, Hereford.

Var. Orchis incarnata, is very rare. Bentham does not note this as a separate species. Mr. Ley found it growing "in some plenty, in June, 1880, in a marsh at Pont-y-Spig.

Orchis pyramidalis, or Pyramidal Orchis, is one of the most beautiful of the class. Its dense, compact pyramid of exquisite blossoms of a rich deep pink or crimson purple are unmistakable. It is not common in our county. It has been found at Marcle Hill and at Mordiford. Mr. Purchas, Mr. Ley, and Dr. Bull have gathered it at Fownhope. Mr. Ley reports it from Oldbury Hill. It has been gathered at Cradley, at Whithourne, at Castle Frome, and the Mill Copse, Cowligh Park. I found it growing plentifully last year on the Ridgeway, Eastnor Park. Specimens have been gathered in a quarry near Kimbolton, and on the roadside near Berrington Tunnel. It is said to have been found in the western districts of our county, but the only locality given is Bredwardine Hill. At our last field meeting at Aconbury Camp Dr. Wood brought some plants which he found at Canon Frome. Our veteran member, Mr. Edwin Lees, poetically observes, "When in July the elegant marbled butterfly is fluttering about these beautiful Orchids the picture is very exciting to a lover of Nature's harmonies." Professor Darwin has written perhaps more enthusiastically of this Orchis than of any other. He says it is "one of the most organised species which I have examined." After a very minute description of its several parts he continues, "In no other plant, nor indeed in hardly any animal, can adaptations of one part to another, and of the whole to other organised beings widely remote in the scale of nature, be named more perfect than those presented by this Orchis. As the flowers are visited both by day and night-flying Lepidoptera, I do not think that it is fanciful to believe that the bright purple tint (whether or not specially developed for this purpose), attracts the day fliers, and the strong foxy odour the night fliers." One feels while reading his remarks about *O. pyramidalis* that he is describing a complicated, delicate, and exquisite piece of machinery rather than an English wild flower, commonly in many districts regarded as a wayside weed. Douglas Allport has written some pleasing verses upon this lovely flower, only one stanza of which I will quote:—

"Thus, when within my sunless room,
Heartsick and worn with Mammon's leaven,
Thy pyramids of purple bloom
Blush through its loneliness and gloom,
The spirit bursts its living tomb,
And basks beneath the open heaven."

(To be continued.)

NOTES FROM TASMANIA.

THE enclosed letter, giving an account of a voyage out to and first impressions of Tasmania, may be interesting to those who have to stay at home. It is from a constant reader of your paper, and as she is a great gardener and intends residing there for some years, her notes may be interesting. If you would care to have them kindly say so through the paper. I may remind you that June in Tasmania is about equal to our November.—D. G.

"Hohart, Monday, June 1st.—I have just begun to feel that I am safe on land once more now, and therefore it is possible to me to write some sort of a letter, even if only a dull one. The Tropics are not to be forgotten. I never knew what a terrible thing heat was before; it is so altogether different from your heat—such a feverish affair, I felt all the time as if I were exhausted with some dead-lift effort. There was none of the usual languor of heat till it got cooler. We are enjoying Hobart very much. Our chief joy is the garden of the Royal Society down by the river, in the Domain. I never saw anything like the evergreens. It seems almost unnatural to see something like a Holly, for instance, with a good-sized yellow flower, having a delicious scent; then another lovely one, with a blue flower something like your Plumbago in colour, with the shape of a Bluebell; then the most splendid crimson *Tasconias*, otherwise Passion Flowers. Even at this dead season there are endless things to see. In summer it must be a paradise. There is a nice old Irish gardener here who seems very obliging, and he says there is no fault to be found with the garden, only that there is not enough water. Soil and

climate are perfect; everything they get grows, whatever part of the world it comes from. They do not seem to have at all a good collection of Roses, very few indeed, I think, and not mulched or anything. There is a large bush of Madame Willermoz, and I think Mrs. Bosanquet, but it is too late to say. They have very good Chrysanthemums, all outside; but the Dahlias are over. I do not think they have any singles; do not forget to send me some seed.

"We get confused with the seasons being so different. I feel a constant desire to call it December instead of June. The weather is delightful in the mornings—warm, dry, and sunny; but it generally rains a little in the afternoons. It was new to me to see large hushes of Heliotrope in the garden, and to hear that it was never killed by frost, unless put in a very bleak place indeed. Certainly we ought to have a grand garden here. There are fine crops of Oranges and Lemons, so we must have those too.

"The garden we went to at Port Said was a curiosity. We never regret having gone there, it was so very different from any other garden. There were some extraordinary flowering trees of unknown kinds. An Hibiscus was covered with big red Poppy-like flowers, only instead of being flimsy they were, as the catalogues say, 'flowers of great substance and endurance.' They were everywhere down the Canal where there was a house of any kind. Did you notice what splendid foliage there was wherever there was any at all in the desert? I thought it was very remarkable. At the Port Said garden they watered every day, but it looked all parched. There was some poor dried-up Mignonette and Pansies, and some sickly-looking Gladioli. On the other hand there was an immense tree of Lantana. They had some La France Roses, they were a lovely colour, and I think rather less flimsy than yours, but not very large. The foliage of the Roses looked very bad. On the whole it was gardening under difficulties there, although the little bits of plants we see in hothouses appeared there as big as Birches and Hawthorns.

"The people brought splendid bunches of *Maréchal Neil* and other Teas on board at Naples, and even at Aden I saw men with *Maréchal Neil* in their buttonholes. How anyone grew them there heaven knows! Fruit and vegetables are splendid here, but those, they say, are grown by the Heathen Chinee, so I am afraid the Tasmanian is a lazy gardener, for I see scarcely a flower about—a Chrysanthemum or two, and some common Geraniums. Some people here say the Oranges and Lemons at the garden are not worth anything. They get them all from Sydney. I am sorry for that, it would be a pleasing novelty to grow them. We get delicious Pears for 2s. per dozen, smaller 1s. 6d., Winter Nelis the name, well-known to me; so it appears they grow the same varieties as at home."

[We are obliged by this letter, and further notes so interestingly written will be welcome to us and acceptable to our readers.]

CLIMBERS FOR WARM CONSERVATORIES.

A WARM conservatory has the lowest average nightly temperature in winter, ranging from 45° to 50°. Even in severe weather it should seldom fall below 40°. On the other hand, a cool house, where preservation is the chief object, may range from 10° to 5° lower when the weather is severe. In fine mild weather in winter the warm conservatory may average 50° at night. In severe frost it will be safe at from 40° to 45°. In all cases where sun can be had the house may be allowed to rise from 5° to 15° by the heat of its rays, and be early shut up. In fact, air should be given in winter chiefly to keep the atmosphere sweet and prevent the plants getting drawn.

Plant in April or May, as then the plants have got the whole season before them to grow freely, and as, unless the plants were very large, much bloom could not be expected the first year. If planted out, the position, if possible, should be near the heating medium, whether pipes or flues, as this will keep the roots more comfortable. It will also be advisable to make a small pit, say 2 feet square, with bricks, &c., for each plant, and deep enough to allow plenty of rough matter at the bottom communicating with a drain. The separate pit for each will not only tend to prevent rampant unripened growth, but it will be easy to remove a plant without disturbing its neighbour. If not planted out wooden boxes will be preferable to any kind of pots, as the roots will be less exposed to variations of temperature. The soil, in general cases, should be light and open, as luxuriance can always be obtained by surface dressings and supplies of liquid manure.—S. T.

EARLY PEACHES.

I AM glad Mr. Rivers has given his opinion of these, as anything he says on the subject must carry much weight. I am pleased to know of a Peach which will ripen four weeks earlier than Hale's Early, and I will introduce the Alexander this autumn. I have no intention, however, of throwing away Hale's to make room for the Alexander. It has proved itself too trustworthy both under glass and in the open for me to think of that; but if the Alexander prove a good predecessor it will be highly esteemed. Peaches which ripen towards the end of August and during September are common enough, but, like early Peas, the earliest of the early will find innumerable patrons, and varieties which will ripen in an unheated house any time in June cannot be too widely known or generally planted. The climate here is not excessively forcing. It is mild, certainly, but often sunless, and in my opinion Hale's is constitutionally early apart from any influence of climate. I think were the dates on which different fruits ripen throughout the country noted and published in your columns, they would furnish much interesting information for many of

your readers. Shipley Apricot was ripe in the open here on August 1st, and Hemskirke is ready to-day, August 8th. Four or five years ago I gathered fine ripe Green Gage and Victoria Plums from the open walls on August 3rd. This year there will be none really ripe until the last week in August or the first week in September.—J. MUIR, *Margam, South Wales.*

CHOICE ALPINE PLANTS.

SOLDANELLAS.—These form one of the most charming groups among the dwarf alpine plants. Too little known and understood probably are some of the reasons for now and again meeting with them starved in small pots with moss-covered soil, bearing sure evidence of the lingering existence. To pass from a few miserable pieces so generally seen to a fine carpet of either of the species when in full flower, would illustrate in the best possible manner the real beauty of these lovely little alpine plants. They are by no means difficult to grow, but, on the other hand, are of comparatively easy culture, the one great point insuring success being abundant moisture. In dry shallow soils they soon become unhappy, and growth will be anything but luxuriant, but they may be planted with perfect safety in the full sun provided they are in a deep bed of soil of peat and loam, which must be continuously moist. It will not be difficult where rockeries exist to find a suitable position for them, or they will soon be content in the artificial bog, in which place care must be taken that they do not get over-run by Lichens. I have said that under certain conditions they are quite safe in the full sun, and on the other hand they do well in moist shady positions, but wherever they are placed moisture must be forthcoming to do them justice or have them in perfection.

Soldanellas seldom find their way to the exhibition tent, so that there would appear abundance of room for improvement in their culture, and a few well-flowered examples at any of our spring shows would be sure to meet with many admirers, seeing that they are almost, if not quite, unique in appearance. The two species most generally seen, at least where they are to be seen at all, are *S. alpina* and *S. montana*. The first-named forms a dwarf compact carpet of roundish, leathery, and somewhat shining leaves, and from these issue the flower stems, which usually attain to about 6 inches high, terminating with pendant, pale blue, somewhat bell-shaped flowers, usually about four on each stem. The flowers, which are cut into numerous narrow segments, have a most pleasing appearance when seen in anything like specimen form, which, unfortunately, is not an everyday occurrence. *S. montana* is very similar to *S. alpina*, and hardly distinct enough probably to be regarded as species, the only difference being, so far as my own observation goes, is that *montana* is larger in all its parts, of more robust habit, somewhat taller, growing to 9 inches high when established, and the flowers a little bolder. *S. pusilla* is of smaller habit of growth, with reniform leaves, while the corolla is not so deeply divided as in the case of the two first-named. Then we have the exceedingly small *S. minima*, a still rare plant of very slow growth. I have never seen a healthy patch of this, nor have I grown one to my satisfaction; the scraps one gets from importation requiring, as a rule, much care and patience to establish. A position on the rockery in the shade and near the eye is suitable for these plants, and after planting in equal parts of peat and loam, with a good addition of sharp sand, place some stones on the surface to prevent a too rapid evaporation. On many of the great mountain chains of Europe these grow somewhat plentifully, and it is to be regretted that they do not reach us in finer tufts than they do, as by making a start with good sized plants instead of the microscopic scraps one usually receives of these from hardy-plant nurseries, the after attention is comparatively easy. If memory serves me right I believe Mr. Lynch of the Botanic Gardens, Cambridge, grows the Soldanellas in company with hardy *Sarracenias*, *Parnassias*, *Goodyeras*, *Droseras*, and moist-loving native Orchises in peat in a narrow border at the foot of the rootery in the bog garden, and which may be saturated at will.

PRIMULA OBSCURA.—Without exception this is the most floriferous of all the Primulas, flowering continuously for months in succession; not merely in one or two, sufficient to prove that the plant has a flower upon it, but in one unbroken mass of flower spikes, which are continually produced, and develop their pleasing flowers with truly remarkable freedom, and of which the following will serve as an illustration. I was calling on a friend in the neighbourhood of Bath in the early part of the present year, when I was somewhat surprised to find a fine specimen in full flower in an 8-inch pot in the cool conservatory. I was informed that the plant had been flowering for some weeks, was most useful for vase-decoration on account of its lasting qualities and light graceful spikes associating so well with other flowers.

Some three weeks since my friend wrote me saying that the Primula I so much admired had been flowering continuously ever since my visit (when I believe it had some twenty-seven or thirty spikes of bloom) but that the gardener had that day cut off all the flower spikes for fear the plant might become exhausted. Thus, after a period of six months flowering, compulsory means had to be resorted to so as to promote new growth and be ready again for winter flowering; so that apart from its value as a hardy plant, it will become invaluable for greenhouse and conservatory decoration, and by adopting special means in its culture it may become a prominent figure among, and likewise a valuable addition to, winter-flowering plants. Where good plants of this pleasing Primrose exist, the best means will be to give them a shift into larger pots, using good sandy loam, fairly rich, and keep the flower spikes pinched out till the new roots have taken possession of the fresh soil, after which, if treated as a cool conservatory plant, similarly to the Chinese section of Primulas, it will be found to be one of the most useful of recent introductions, and as a perpetual bloomer unique.

ONOSMA TAURICA (Golden Drop).—A choice gem among alpine plants, and one of the most beautiful of the Borageworts. It flowers in May and June, and delights in a moist deep loamy soil with perfect drainage. It should be planted so as to allow it to overhang a projecting ledge of rock with plenty of fissure room for the roots to dive into. My principal reason for calling attention to it just now is that the present is a good time for its propagation; not that I would infer that this is the only season in which it may safely be propagated, far from it, as it may be done any time when suitable cuttings are to be obtained, still I point to this midsummer period because cuttings of the right stamp will be more plentiful than they were at flowering time. When of 3 or 4 inches in length strip them off with a heel attached, and insert in very sandy loam in pots, and place them in a cool shady position under handlights and keep them close. I prefer to keep the knife away from these, for it does more harm than good. Such cuttings as I have described will root freely in about three weeks, when the lights may be removed by degrees and ultimately altogether. Its tubular, somewhat ventricose drooping golden flowers in long cymes, render it a favourite whenever seen in good condition, and indeed it is one of the most desirable and attractive of rock plants.

SILENE MARITIMA FL-PL.—This forms prostrate tufts of glaucous leaves close upon the ground, which, owing to its free and dense growth, soon forms a perfect carpet of its leaves. The flowers are large, pure white and double, somewhat resembling those of a double white Pink. It is perfectly hardy, and a continuous bloomer, easily grown and increased by means of cuttings, which should be secured when about 2 inches long. It grows well in ordinary soils, and on account of its prostrate habit it is suitably adapted for the lower portions of the rockery, where it forms a conspicuous plant for a considerable time during the summer months.

PRIMULA MINIMA.—I doubt not that this plant has been somewhat of a puzzle to many growers of choice alpine plants, and my experience of it is that it requires careful hands and watchful eyes to keep it in good condition. Slugs are particularly fond of this little pigmy, and if they get a good feed, the case, so far as its recovery is concerned, is almost a hopeless one. When in flower it is singularly ornamental, owing to the unusually large rose coloured flowers which spring from its minute rosettes of leaves, and which are nearly an inch across, sometimes hiding the foliage entirely. To grow it well use equal parts of good mellow loam and fibrous peat, to which add some broken brick or mortar rubbish, making the whole compost rather sandy. Give abundance of drainage and plenty of water during spring and summer, and where confined to pot culture let them be firmly potted. If planted out it should be associated with the dwarfiest and choicest of alpine plants.—J. H. E.

SOIL FOR STRAWBERRIES.

Success with Strawberries in pots depends greatly on the quality of the soil. Really first-rate crowns and splendid fruit are only produced in substantial soil. Manure, no doubt, plays an important part in rearing good plants, but nothing, in my opinion, will fully compensate for the want of good soil, and too much attention cannot be given to this. I have grown plants in light soil and they grew freely, but when forcing time came the sandy soil was of little use, and did not produce half the crop or anything like such fine fruits as plants did in very heavy soil. When once established in this they seem independent of manure and develop in a most satisfactory way, both in the case of the plants in autumn and the fruit in spring. As many of your readers will now be potting their spring-fruiting Strawberries they will find it of the greatest advantage to secure some very good loam for them, and if this does not

exist on the place a small quantity should be bought for the purpose. Anyone who has been taking stock of the Strawberry crops in different soils this season must have noticed that plants growing in light soil did not produce such handsome fruit as those on stiff land, and the succession was not so long maintained in the former case as the latter. The same rule applies very forcibly to Strawberries in pots.—J. Muir.

ISMENES.

NOTHING could be more to the point than to give the name *Ismene* to this section of *Pancratioid* plants. The affinity of these with allied bulbs was so suspicious to the mind of Dr. Herbert at the time he instituted this genus, that he expected, sooner or later, that at least some of the members of the family should be torn asunder and come to a tragic end, just such a work as we are bent upon this very day. The genus is altogether Peruvian; those of them marked as natives of Brazil were only garden plants cultivated in Buenos Ayres; there is no record of one of them being found wild in Brazil. Every one of them, without exception, will do better with the same kind of treatment as the old *Jacobaea Lily* (*Sprekelia formosissima*) than any other way—that is to say, to be planted out in front of a hotbouse in April, and to be taken up about the end of October, and kept dry all the winter. *Pedunculatum*, and more especially *Calathinum*, will live out of doors, winter and summer, just like the *Belladonnas*, and flower quite as freely and much earlier; but still, they are much improved by occasional dryings and a change of soil. The great yellow Peruvian Daffodil, *Ismene Amancæ*, does certainly better by being taken up every year. None of them like peat or leaf mould, but they would live in pure sand for a generation if they were well supplied with water during the summer; and it is best to put in a potful of sand, and put each bulb in the middle of the sand at planting time. Another very great peculiarity belonging to them, and to *Choretis* as well, is that their seeds vegetate in ten or fifteen days, but never throw up a leaf the first season; a fang starts away from the seed, like as from the bulb of some kinds of *Oxalis*, and at the end of this fang a bulb will form as large as a wren's egg, without any sign of leaf at all the first season; and that is very likely the reason why these beautiful bulbs are not as common as the *Belladonna*; and the next reason for their being so scarce may be, that their cultivation has not been treated of in popular works, and that most people turned them into the stove, where they soon dwindle and perish.

ISMENE AMANCÆS (The Peruvian Daffodil).—This is the oldest and best known of the genus; a large, clear yellow flower, the coronet or cup is also yellow, and nearly fills the inside of the flower. It has six green midribs, and is jagged on the edges. The tube of the flower is also green. The leaves sheath at the bottom, and form a round column over the bulb. There is a beautiful sulphur-coloured cross between it and *Calathina*, which is figured in "The Botanical Register," vol. xx., plate 1665; and in "The Botanical Magazine" the species is called *Pancratium Amancæ*, vol. xxx., plate 1224. It should always grow in the middle of a heap of sand, and out of doors, and not be planted till the beginning of May, but it will grow in a pot, and even force to flower a month earlier.

ISMENE CALATHINA.—The bulb, leaf, and growth are very much like the last, but the plant is stronger; the flower and cup are large, and pure white; the flower is full 4 inches across; the tube is green, and there are six greenish stripes in the cup, as in that of *Amancæ*. No one knows where it is a native of, but it is more hardy and less fastidious about sand than the last. It was first introduced from the gardens about Buenos Ayres. The seedling between it and the last is fertile, and has crossed again with the pollen of *Amancæ*, and a much hardier plant with a better flower is the result. Then, if *Calithauma* is really an *Ismene*, we have emerald-green, golden-yellow, and the most silvery-white, to mix and vary into all possible hues, for the front borders of our greenhouses and south walls. Add to this the delicious odours in the half-hardy white *Hymenocallis*, not to mention the exquisite fragrance of *H. speciosa*, from the stove, and surely it is worth while to make a fresh start with the *Pancratium*-like bulbs, and not go on for everlasting with such trumpery things as common Tulips and Poppy Anemones.

ISMENE DEFLEXA.—Another Peruvian species, with white reflexed flowers (not green), which comes the nearest to *Elisene*, being, as it were, the connecting link between the two genera, but in truth *Choretis glauca* and *Hymenocallis rotata* are just as true links as *deflexa*, only we must not say so botanically; but let the cross-breeder go to work, and all these links will snap asunder like anything.

ISMENE KNIGHTII.—This is the old, beautiful, glittering, white *Hymenocallis rotata* from Florida, where it grows, near Mobile, in swamps and ditches, very deep indeed in the mud; bulbs of it have been dug out from the depth of 2 feet.

ISMENE MACLEANI.—This is another large white flower, which is one of the plants celebrated by the Peruvians under the name of *Amancæ* and at the foot of the mountain on which it grows is held one of the greatest festivals of the Portuguese Church, at Lima, called the Festival of the *Amancæ*. At this festival they all wear nosegays and other ornaments made of this flower; but they put it into the stove, as usual, in the Botanic Garden, at Glasgow, to where Mr. Maclean sent it, and the probabilities are that they killed it outright. None of the family can bear the stove with impunity.

ISMENE VIRESCENS.—This pretty little plant flowered with the Horticultural Society in the summer of 1840. It was sent to them from Cusco by Mr. Pentland. Many things that were sent by Mr. Pentland from the highlands of Peru have been lost through not knowing what

temperature to give them; and very likely some of the Fellows of the Horticultural Society, to whom *Ismene virescens* had been sent, soon lost it by placing it in the stove. When the flowers are in the bud they are green all over, look like so many green *Coburgias*, but when they open they are whitish or greenish-white inside; rather small for this genus, but very neat, and they emit an agreeable lemon-like scent; the bulb spawns well, and is thus easily multiplied by offsets.—C. B.

SAXIFRAGA GRANULATA FLORE-PLENO.

THE present plant furnishes us with a striking instance of the way in which our native plants are neglected in modern gardens. Many of our rarer British plants are no doubt difficult to cultivate, but the majority of them, and this one in particular, will flourish almost anywhere, the drier and stonier the better. In many old-fashioned gardens we have seen large patches of it in the mixed border, and a prettier sight during the



Fig. 24.—*Saxifraga granulata flore-pleno*.

months of April and May is certainly not surpassed by a large majority of the exotic plants we cultivate.

When the plant represented in the cut (fig. 24) is only an illustration of what may be done with our common Meadow Saxifrage by good cultivation, we need not despair of yet adding to our gardens valuable plants from the weeds we see around us in the fields. It also makes a handsome rockery plant, and when once established, covering dry stony slopes with surprising rapidity, the tubers are all the better for a roasting during the summer. It may be easily increased by division of the roots.—M.

ORCHIDS AT HILLINGDON.

IN noting the success achieved with Orchids in the vinery there, (see p. 87), I stated there were other Orchids which merited notice, and I

will now refer to them briefly. The *Cattleya* house is 30 feet in length and 13 feet in width. One plant of *C. Sanderiana* was bearing a spike of six flowers, and the individual blooms measured 9 inches across. The colour was uncommonly rich, and the specimen altogether a fine one. There were some scores of fine healthy plants of *C. Mendeli* in flower, and they had a gorgeous appearance; indeed I never saw so many fine *Mendeli* in flower at once or in one house, and this is a special and much-valued variety there. The stock did not represent all that had been bought in, as many had been weeded out from imported batches as they bloomed for the first time, and it was only the cream which had been retained, which may account for the good impression they made on me. Some of them 10 inches across were slightly shaded on the petals, while others were as white as snow, with very deep-coloured lips, and these we admired most. There were some hundreds of blooms, and when massed together the effect was quite unique. There was a good batch of *Cypripedium Veitchi* in this house, the plants being remarkable for the very rich colour and fine health of the foliage and the numerous blooms each one was bearing. *Lælia purpurata* was bearing six large blooms on a spike. *Odontoglossum vexillarium* was well represented, one plant, probably one of the best of them, bearing eighteen spikes of bloom, but most of the *Odontoglossums* were to be seen in the house devoted to this genus, which contained about 2000 plants of different varieties, *O. Alexandræ* being largely represented. Many of the plants were growing in shallow pans, and Mr. Hill, the able cultivator, thinks it is quite impossible to overdo them with drainage. In another house we saw many plants of *Phalenopsis amabilis* and *P. Schilleriana*, not in flower, but with capital foliage, large, clean, and healthy. A plant of *Saccolabium guttatum* in this house was bearing thirteen large spikes. There was also a large batch of *Cypripedium Spicerianum*, the plants being grown in shallow pans with plenty of drainage, and the foliage was compact, abundant, broad and healthy. A plant of *Cypripedium niveum*, which was growing in a pan, had twenty-one open blooms, and this, like several more of the best varieties in the class, were exceedingly good plants. So far as I could see and understand, the system of growing Orchids there is a thoroughly common-sense one, extremes of all kinds, such as very high temperatures and the like, being avoided, and it would be quite impossible to meet with a better managed collection of these valuable plants. Master and man take the deepest interest in them, and it is pleasing to record the success which has attended their efforts in selecting good varieties and cultivating the same.—M. M.

AUTUMN-SOWN ANNUALS.

From the middle of April to the middle of June is always our worst time in the flower garden, whether its ornaments be planted in masses, or only in the mixed way. Annuals are uncertain in summer, as we all know, and few people like to trust to more than a very few sorts of them for keeping the beds full for any length of time, too, the first difficulty a new beginner meets with. He is no gardener, but he wants flowers, and would like to try his hand at something cheap to get experience. No plants are cheaper than annuals, and from the present time to the first week in September is the time to sow a number of them.

When the beds and borders of a mixed flower garden are dressed up in the spring, and all the established plants have sticks or labels set to mark the places, all the spare ground ought to be immediately filled with the different kinds of annuals that were sown in the autumn, for they are as easily removed and replanted as Cabbages, and coming into flower just at the time we are most in need of their aid, it is our own fault if we do not come up to the mark six weeks earlier every year than most of us are now in the habit of doing.

Like all other crops, annuals sown in the autumn are liable to be injured by the weather. A very mild and late autumn is much against them, because they grow too rank, and are very liable to be cut off by a very severe winter. The soil should be light and poor, and the situation an open airy spot, away from where fallen leaves are likely to gather in heaps by the wind. This gathering together is the very worst thing I know of for any seedlings; for if such quantities of leaves rest on the seed bed for a week, the little seedlings are either smothered or made so tender and blanched that the first dry wind or cold night finishes them. The soil should not be dug more than 3 inches deep, and the seed should be sown thin; a deep bed is likely to encourage the seedlings to grow too fast and bulky, and so make them more liable to be cut with frost; and if they are thick in the bed, the one helps to draw up the other too weak and spindly. Like many other causes of success in gardening, attention to these little matters is more essential than great skill or practical knowledge.

The best thing to cover seed-beds in the autumn is one-half light soil and one-half finely sifted coal ashes, from which the very fine dust and the rough cinders are taken; the first few rains will wash down all the finer particles of this compost for the roots to work in, and the surface is left gritty and porous, so that the stems and collars of the seedlings have free air and elbow room, instead of being jammed in a sour crust of rank earth, as would be their condition if they were sown on a rich, strong soil. A west aspect is by far the best for them, as then they are less liable to suffer from hard frosty nights, followed by very sunny mornings, or what we call extremes of weather. New seed of many kinds of annuals is not so good to sow in the autumn as old seeds, because the newer the seeds the more strong and healthy the seedlings, and, therefore the more liable to suffer from a hard or long winter.

Red and white *Clarkias* are well worth growing, and no winter kills them when self-sown. *Collinsia bicolor* and *C. grandiflora* are the two best of that family; they also are hardy enough to stand most winters.

The two yellow *Eschscholtzias* are as hardy as Wheat or Barley, and though not annuals they do much better if sown and treated as such, first in September, and secondly about the middle of April; if they are to be transplanted, it should be done when they are quite young. The blue and spotted *Nemophila insignis* and *N. maculata*, also *N. atomaria*, pass over almost any winter, and come into bloom before April is out. *Eucharidium grandiflorum* ought to be grown, and the plants stand a smart winter. *Godetias* are as good as they are gay, and as hardy as a Scotch Crocus, and they will be the brighter in flower, and more manageable in plant if they are planted in poor soil rather than rich; but, recollect, if poor, it must be deep and well worked. Stunted growth is quite a different thing from subdued growth caused by sandy soil well tilled. The flowers of all the *Godetias* show brighter when the plants are in this subdued growth. *Gilia tricolor* is hardy and very attractive; this and *Collinsia bicolor* are the two best lilac. *Erysimum Profiskianum*, when sown in September, planted out in the beginning of March, and trained down to the surface of the bed as it grows, comes into bloom at the beginning of May, and lasts till midsummer, or longer, and, so treated, is one of the very finest beds ever seen in May; but if allowed to grow its own way you might just as well have a bed of seed Turnips. A second sowing of it the first week in April, and again about the end of May, would carry it right through the season till the frost came. Six or seven plants of it put into pots about the new year would come in finely for the greenhouse in April; but it will not stand forcing—the protection of a greenhouse or pit is as much as it can safely endure. *Lasthenia californica* and *Limnanthes Douglasii* are two yellowish kinds, which are grown for making up this colour in May. *Bartonia aurea*, a beautiful clear yellow flower on a weedy-looking plant, sown now, and transplanted into very poor, light soil early in April, will flower in May, and be much better than under any other treatment. The flowers are as rich as those of *Allamanda*; but the plant is no better than a Dock in good soil. *Leptosiphon densiflorus*, a very dwarf lilac, or purple-and-white-mixed flower, stands the winter well. *Lupinus nanus* has quite a different character when allowed to grow on slowly all the winter. It blooms from May to the middle or end of August from seeds sown about the middle or end of September, provided the plants are not allowed to ripen any seeds. Another sowing, about the first week in May, would carry it on to the middle of October. *Silene penula*, *S. compacta*, and *S. Schafta* are the best of the Catchflies, and are always best from autumn sowing. The Virginian Stock flowers in April if sown now, and all the varieties of the branching Larkspur will bloom most part of the summer, if sown earlier in September. Corn-flowers (*Centaurea cyanus*) should be sown now for cut flowers.—FLOWER GARDENER.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 11TH.

A *VARIEO* but not extensive display of plants, flowers, fruits, and vegetables constituted an interesting meeting on Tuesday last, the chief features of which were Mr. T. S. Ware's superb collection of hardy flowers, Messrs. Kelway's *Gladioli*, and Messrs. Rivers' Gooseberries.

SHOW OF PLANTS AND FLOWERS.

The prizes offered for these did not bring a very strong competition, and several of the classes were quite unrepresented. The best competition and the best plants were those entered in the class for six *Caladiums*, in which Messrs. J. Laing & Co., Forest Hill, won first honours with well-grown specimens of some of the most effective varieties in cultivation. The plants were 3 to 4 feet in diameter, with large, well-developed, and highly coloured foliage, the varieties represented being as follows:—*Mithridate*, red and green; *Elsa*, white with green veins and red blotches; *Onatum*, green with red veins; *Candidum*, white with green veins, very distinct and good; *Madame Fritz Koehlin*, white with green and red veins; and *Ferdinand de Lesseps*, green with a red centre. Mr. Chadwick, Hanger Hill House Gardens, Ealing, and Mr. H. James, Lower Norwood, followed, showing smaller plants, but also of good varieties. *Fuchsias* were not of great merit, and second prizes only were awarded to Mr. Lambert, Elingdale Lodge, Herne Hill, for six and four plants, the former standards fairly well flowered and the latter dwarfier compact plants, the best of the varieties in each case being *Conspicua*, *Warrior Queen*, and *Scarcity*. The same exhibitor was first with twelve plants, small but healthy examples, Mr. H. James following.

Of the cut flowers the most important exhibit was the collection of *Gladioli* from Messrs. Kelway & Son, Langport, Somerset, which comprised 100 spikes, nearly all distinct varieties, massive compact specimens, with large brilliantly coloured and varied flowers. Several varieties were new and were honoured with certificates, as will be seen in our list of certificated plants at the end of this report. These were *Milton*, *Galatea*, *Abas*, and *Lorna*, while of others not so distinguished the following were especially worthy of note:—*Irex*, cream, centre crimson, with red streaks; *Queen Mary*, white, crimson central blotch; *Calephon*, salmon scarlet, white centre; *Joseph Broom*, white, streaked with crimson; *Lady Carrington*, very pale pink, a charmingly delicate variety; and *Opiter*, deep scarlet, white centre veins. The *Asters* showed the effects of the weather in their comparatively small size, but they were fresh and bright in colour. The only competition was in the class for twelve *Chrysanthemum* or *Pæony*-flowered varieties. Mr. A. S. Price, Park-side House, Ewell, Surrey; Mr. J. S. Cooper, Windhill, Bishop's Stortford; Major Scott, Wray Park, Reigate; and Mr. W. Smith, Bishop's Stortford, taking the prizes in the order named, the last two having equal third prizes. Mr. T. S. Ware secured the prizes for *Hollyhocks*, their twelve stems of double varieties being exceptionally fine, the blooms large and the colours rich.

Vegetables.—Prizes were offered by the Society for four *Tomatoes* in pots, Mr. Chadwick being the only exhibitor, being awarded the first prize for fairly well-fruited examples of Sutton's Earliest of All and Reading Perfection. Messrs. Sutton & Sons, Reading, also offered prizes for three dishes of *Tomatoes*, twelve fruits to form a dish

Mr. T. A. Beckett, Cole Hatch Farm, Bucks, taking the lead with medium size but highly coloured fruits of Chiswick Red, Stamfordian, and Reading Perfection. Mr. S. Castle, West Lynn, Norfolk, was second with rather smaller and not quite such even fruits of Reading Perfection, Dedham Favourite, Old Red, and Chiswick Red. Neither of these collections were, however, so fine as we have been accustomed to see in the general collections of vegetables, and the same remark would apply to the latter in competition for Messrs. Webb & Sons' prizes, which were awarded to Mr. C. J. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Esher, and to Mr. T. A. Beckett. In the premier collection the following varieties were represented:—Shirley Hibberd's Prolific Marrow, Girtford Giant Beans, Perfection Tomatoes, Veitch's Autumn Giant Cauliflowers, Woodstock Kidney Potatoes, Ne Plus Ultra Peas, Intermediate Carrots, Stamfordian Tomatoes, White Leviathan Onions, Canadian Wonder Beans, Green Globe Artichokes, and Snowdrop Potatoes. These were generally even in merit, but the Onions, Potatoes, and Beans were the strongest dishes. In Mr. Beckett's collection Sutton's Prizetaker and Early Regent Potatoes, New Intermediate Carrots, Chiswick Red Tomatoes, Sutton's King of Cauliflowers, Improved Telegraph Cucumbers, and White Leviathan Onions were the most important dishes.

COMMITTEES.

FRUIT COMMITTEE.—Present Mr. G. Bunyard, in the chair, and Messrs. G. T. Miles, J. Woodbridge, J. Roberts, Harrison Weir, Sidney Ford, R. D. Blackmore, and T. Francis Rivers.

The duties of this Committee were soon performed, as the exhibits were not numerous nor of such importance as to require much consideration for the grand collection of 120 dishes of Gooseberries from Messrs. T. Rivers & Son, Sawbridgeworth, be excepted. This exhibit was a very remarkable one, and probably so large collection of varieties has never been shown by one exhibitor. The award of a silver-gilt Banksian medal was a fitting mark of commendation, especially as with them were included some dishes of handsome Cherries and Peaches, together with trees in pots of Cherries, Plums, &c., beautifully fruited little specimens. Mr. Eckford, Boreatton Park, Baschurch, Salop, sent twenty-four seedling varieties of Gooseberries, which were, however, not considered of particular merit. Mr. T. Laxton, Bedford, also sent fruits of a seedling Gooseberry named Transparent Champagne from the large Red London and Red Champagne varieties, the fruits being white, of medium size, and of good flavour. Mr. G. Walker, Beeches, St. John's Wood, showed a seedling green-flesh Melon, well netted, but of rather poor flavour. Mr. H. Bannister, Cote House, Bristol, had a dish of Apples that are to be sent to Chiswick for comparison with Dutch Codlin, and a few berries of seedling white Grape of Muscat flavour, but of shorter rounder form. Mr. T. Smith, Papworth Hall Gardens, St. Ives, exhibited a seedling Purple Plum that was not considered of sufficient merit to deserve special notice. Messrs. Hurst & Co. Leadenhall Street, showed samples of a good curled Parsley.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair, and Messrs. F. R. Kinghorn, Amos Perry, J. Child, John Fraser, J. James, Charles Noble, J. Dominy, James Smith, H. M. Pollett, J. Douglas, J. Hudson, H. Ballantyne, W. B. Kellock, James Walker, Harry Turner, E. Hill, H. Williams, James O'Brien, Dr. M. T. Masters, and Shirley Hibberd.

A number of new plants gained certificates, and several of these were of remarkable merit, while even amongst those not honoured by the Committee there were plants well deserving of notice. Messrs. J. Veitch & Sons, Chelsea, as usual had some excellent new plants, several of which are described below. Very distinct also were the following—*Davallia retusa* from Sumatra, with loose bipinnate fronds, the stipes reddish, about 2 feet long, the pinnules angular and blunt, somewhat suggestive of the *Salisburia* on a small scale; they are also of glaucous tint on the under surface, which assists in rendering the plant still more attractive. *Platycodon Mariesi* grandiflorum, a very large-flowered variety of this handsome Campanulaceous plant, the flowers fully 3 inches in diameter, of a bright rich purple tint. It is dwarf in habit, with ovate leaves and free-flowering. *Rhododendrons* Queen of Roses and Prince Henry are both fine forms of the greenhouse hybrid section, the former pink and the latter orange, the flowers large and beautifully formed. A collection of hardy hybrid *Gladioli* of the Lemoinei type were also shown, comprising some very distinct varieties, several of which were certificated. Votes of thanks were accorded for spikes of *Pavia macrostachya* and heads of *Clethra arborea*, both well-known handsome trees.

Mr. W. Bull, Chelsea, showed several choice and new plants, obtaining certificates for three. Some graceful Palms were included in this collection. *Calamus perelegans* and *Kentiopsis macrocarpa*, in addition to the *Euterpe* certificated, were notable for their good habit. The *Kentiopsis* was particularly bold, with large leaves and broad pinnæ reddish on the lower surface. *Musenda theifera* has neat white star-like flowers in small heads, very fragrant. *Cycas siamensis* is also a distinct and graceful plant, the leaves being furnished with closed set narrow pinnæ and arching gracefully.

Mr. B. S. Williams, Upper Holloway, contributed plants of his handsome *Amaryllis* Mrs. W. Lee, with fine rose-veined flowers; *Mormodes luxatum punctatum*, white with purple dots, very fragrant and attractive; and a beautiful *Chysis* which was certificated. Messrs. Sander & Co., St. Albans, showed a plant of *Phalænopsis Reichenbachiana*, with medium sized creamy white flowers, marbled with purple and having a pink lip. Mr. Holah, gardener to F. C. Hills, Esq., Redleaf, Penshurst, was awarded a vote of thanks for *Galeandra Devoniana*, bearing six large flowers, the sepals and petals brown, the lip white veined with purple. Mr. White, gardener to C. Dorman, Esq., The Firs, Laurie Park, Sydenham, showed a handsome *Mormodes* named *Dormanianum*, white dotted thickly with crimson, the column being of a darker shade of crimson.

The New Plant and Bulb Company were awarded votes of thanks for a large group of *Lilium auratum* of several varieties, spikes of *Gladiolus Lemoinei*, double *Tuberous Begonias*, and *Caladiums*. Mr. Owen of Maidenhead sent several double *Begonias* named A. F. Barron, creamy tint; Harry Veitch, and Dr. Hogg, pink; and Shirley Hibberd, scarlet. Messrs. Kelway and Sons had a collection of distinct *Gaillardias*, one of which, *St. Blaise*, was certificated. Philip Crowley, Esq., Waddon House, Croydon, showed a plant of *Lomatia propinqua*, for which a vote of thanks was accorded. It has leaves somewhat like a *Grevillea* and long spikes of white flowers which

have the same curious structure that distinguish many other Proteaceous plants. Mr. P. Parker, Clive Road, Norwood, was also awarded a vote of thanks for a large specimen of *Campanula pyramidalis* with nearly twenty long spikes of flowers; and Mr. J. Douglas, The Gardens, Great Gearies, Ilford, was adjudged a similar recognition for a box of fine *Carnation* and *Picotee* blooms.

Mr. T. S. Ware, Tottenham, contributed a magnificent group of hardy flowers, in which *Liliums* largely predominated, especially *L. auratum* and *L. tigrinum*. The collection comprised, in addition, a great variety of choice flowers from the extensive stores at Tottenham, and, together with the Pompon, Show, Fancy, and Single Dahlias, were greatly admired, well deserving the silver Banksian medal awarded for them. Some handsome forms of *Cactus Dahlias* were also included, one named Mrs. C. Hawkins, of a clear pale yellow colour and excellent form, being very striking. The *Phloxes* and *Pinks* were also very carefully selected as representative varieties.

A silver-gilt Banksian medal was awarded for fine collections of wild flowers from pupils of John Henshaw, Esq., Harpenden, each collection comprising thirty specimens neatly labelled with the botanical and popular names, and the natural order to which they belonged. They were exhibited by Messrs. F. Dellar, E. Guess, F. Willis, S. Skillman, and G. Underwood, all of whom deserve much credit for their patience and care in forming such representative collections.

CERTIFICATED PLANTS.

Cattleya Hardyana (G. Hardy, Esq., Timperley, Cheshire).—A magnificent Orchid, supposed to be a natural hybrid, of which one of the parents is no doubt *C. Dowiana* (*C. aurea*), and the other perhaps *C. gigas*, or some state it came in a batch of *C. Dowiana* and *C. imperialis*. The flowers are of great breadth, but the sepals are not very broad, the colour being a pale purple; the lip is 3 inches broad and 5 inches deep, of an intensely rich crimson colour at the tip, gold at the side, and beautifully veined with gold in the centre and throat. It was pronounced by several of the most experienced orchidists present to be the finest *Cattleya* they had seen, and Mr. Hardy has every reason to be proud of his extremely valuable plant.

Sarracenia Patersoni (Dr. A. Paterson, Fernfield, Bridge of Allan, N.B.).—A hybrid between *S. purpurea* and *S. Drummondii*, raised at Fernfield about ten years ago, and of which there are only nine plants in cultivation—one at Sandringham, one at Glasnevin, one at Edinburgh, and six in Dr. Paterson's possession, the plant exhibited at Kensington being intended to be sent to the Royal Gardens, Kew, after the Show on Tuesday. The pitchers are very strong, 12 to 18 inches high, proportionately broad, with a lid 4 inches in diameter and of a uniform rich dark red colour from the top to the base, the lids being veined on a slightly lighter ground colour. It is a very strong-growing handsome *Sarracenia*, and when better known will take its place amongst the finest of those in cultivation.

Cyathea divergens (Veitch).—A New Grenadan Fern, with bipinnate fronds 2 to 2½ feet long drooping round the pot, the pinnæ 3 to 6 inches long with serrulated pinnules. Very handsome and distinct.

Rhododendron Indian Yellow (Veitch).—One of the greenhouse hybrid section. The flowers of good form, of a clear yellow colour, the particular tint being well expressed in the name.

Aristolochia elegans (W. Bull).—Flowers 3 inches across, saucer-like in form, white marbled with crimson purple, a heavy blotch of the same colour being near the mouth of the white tube.

Euterpe plumosa (W. Bull).—An elegant Palm with leaves 3 feet long, with narrow closely set pinnæ about 12 inches long, they arch gracefully, and the general appearance of the Palm is very pleasing.

Alocasia Sanderiana (W. Bull).—Leaves 16 inches long and 6 inches broad, sagittate, irregularly lobed, dark shining green with strong silvery veins and midrib. A bold distinct foliage plant.

Chysis laevis superba (B. S. Williams).—A magnificent variety with rich brown and yellow flowers in two spikes of seven and nine each respectively.

New Gladioli (Kelway).—*Milton*, scarlet with crimson central blotch, large well-formed flower. *Galatea*, very delicate blush tint, an extremely beautiful variety. *Abas*, crimson with a white centre. *Lorna*, brilliant scarlet very showy. All these were of the same character as regards size and strength of spike, and like most of the Langport varieties were exceedingly handsome.

Pelargonium peltatum Souvenir de Charles Turner (R. Owen, Maidenhead).—A fine double variety of a warm cerise tint, free, and of good habit.

Gaillardia St. Blaise (Kelway).—A neat variety with close flower, crimson, edged with a narrow band of yellow.

Tuberous Begonias (Cannell), *King of Crimson*, single, rich scarlet, very large round flower; *Gabrielle Legros*, double, very full pale yellow, good shape; *Antoinette Guerin*, double, white, very good form, pretty; *Blanche Duval*, double, creamy white, and pink tinge in bud.

Hardy Gladioli, Lemoinei type (Veitch).—*La France*, pink, lower petals crimson tipped with yellow; *Number 149*, deep scarlet; *Andre Chenier*, rich dark uniform purple; *Henri Conscience*, pale purple, light centre, and dark blotch, very pretty. These varieties are remarkable for the diversity of shades and the curious contrast of colours they exhibit.

IN THE GARDEN.

PRETTY FACE (*Brodiaea ixioides*).—Perhaps this is more generally known as *Calliprora lutea*, which is, in my opinion, a more satisfactory name for it, as it certainly is very distinct in appearance and colour from the other members of the genus *Brodiaea*; but structurally I suppose its difference is too slight to warrant generic separation. It produces slender flower stems from a foot to 18 inches high, bearing a large umbel of flowers on slender pedicels at the top, which are individually about an inch across, of a deep golden yellow colour, with a brown medial vein in each segment of the perianth. Generally more than one scape is sent up from each bulb, and as they are many-flowered it is a neat and extremely pretty bulb for the hardy flower

garden. Serono Watson says in his "Californian Flora" that it varies from rich yellow to nearly white. Now it so happens that I have bulbs collected from the San Diego district of California which are now in flower with the type, and inside the perianth is quite white, while the back of each division is marked with a reddish-brown midrib. It appears to be rather stronger growing than the type, with great umbels of white star-like flowers, and mixed with the latter it forms an exceedingly beautiful and chaste picture, which I would not be without for a great deal; indeed from what I can learn I have quite a treasure in thus obtaining such a good albino of "Pretty Face." My bulbs thrive remarkably well in a warm position, well drained, in light rich soil near the city of Chester, but I took care when planting to surround them with sand and ashes from burnt garden refuse, and evidently they thoroughly enjoy such treatment.

BRODIAEA LAXA.—This is another very handsome species, producing slender many-flowered stems, which vary greatly in height. Those flowering with me are about a foot high; the perianth is tubular bell-shaped, an inch and a half long, of a rich tyrian purple, but the colour varies. I have seen it much paler, indeed a dull purple or pale blue; it also has its albino form, which is, however, very scarce. I have bulbs but not yet strong enough to flower. *A. Bridgesii* is very near *B. laxa*, but the perianth is not so long, and there are points of difference in the stipe supporting the ovary and the filaments, but these are points which the ordinary gardener cares little about, suffice it if any plant is superficially distinct. These both thrive under the same conditions as *B. ixioides*.

PINK TOM THUMB SCARLET.—About a dozen years since Messrs. Veitch & Sons exhibited this bright little gem at the Richmond Flower Show, and I was very much struck with its distinctness and effectiveness. For years I neither heard nor saw anything of it, and it was with difficulty that I secured a plant of it last year. I understand Messrs. Veitch have quite run out of stock, for what reason I cannot imagine. Is it very difficult to propagate? I should be glad to hear if any reader of the Journal has any experience to relate concerning it. Three small plants in my garden have now a bloom each expanding, bright scarlet, very large for such a pigmy variety, for they are certainly not more than 4 inches high in all. They are doing well, producing a fair supply of grass, which will be carefully looked after, as such a peculiar beauty well deserves spending some little trouble upon.

LILIUMS.—There is such a number of these quite happy in the outside garden. Some should certainly be grown wherever accommodation can be found for hardy bulbs; for instance, such as the old *L. candidum*, *L. testaceum*, *L. chalcedonicum*, *L. colchicum*, *L. umbellatum*, &c. Beginning with *L. candidum*, called in its Italian home the "Madonna" Lily, what is purer? Fancy its tall spikes rising above a bed of dwarf dark Roses. So effective is such a picture that we would go several times a day to admire it. Such a picture I have beheld for many days past in a neighbour's garden, and live with the hope of having something similar in my own next year. *L. testaceum* is one of the most unique Lilies we have, supposed to be of hybrid origin between *L. candidum* and *L. chalcedonicum*. Very likely. It has the habit of the first, with a colour infusion of the second; *candidum* in flower form, with a colour, rich apricot or nankeen, between the two, sweetly scented, abundantly distinct, free-growing in light rich soil, there is no reason why it should not be generally grown, yet I am informed it is getting scarcer every day. *L. chalcedonicum*, often called the Scarlet Turk's Cap, is also much dearer than it was a few years back, but it will always command a good figure, as it does not increase very freely, and is in good and steady demand. It will soon be in flower with me, and its rich scarlet blossoms are always welcome. Mr. E. Jenkins rightly praises *L. pomponium*, which is also scarlet-flowered, but it is a much more slender grower, and earlier in blooming than *chalcedonicum*, and certainly well deserves general cultivation. The Caucasian *L. colchicum* or *Szovitzianum* is one the handsomest and easiest grown, provided it receives liberal treatment. By this I mean plenty of manure in some form or another; it also most enjoys a rather stiff soil. I was at Edge Hall Gardens the other day, and there Mr. Wolley Dod grows it to perfection, and he says his success is due to the use of plenty of manure. Crushed bones are mixed with the soil about the bulbs in liberal quantities, and their present condition speaks well for the treatment—tall stout stems these are, 5 feet high or more in some instances, with large heads of the deep lemon finely spotted flowers. In future treatment of this Lily one need not be afraid of using manurial material when planting. The varieties of *L. umbellatum* are among the very best Lilies for outside culture. They flower very freely, and when estab-

lished form good clumps of dwarf stems supporting heads of bright orange-red flowers. The colour varies in the different forms. Some are all but free from spots, while others are copiously spotted. The best are erectum, Sappho, grandiflorum, and Incomparable, all dwarf and exceedingly showy, well adapted for massing and bedding, but like nearly all Lilies they require a liberal supply of manure, and some good leaf soil is a great help to them. The Panther Lily (*L. pardalinum*) is very showy now. I do not keep the varieties distinct, as I have repeatedly found such a variableness in bulbs collected from the same locality that I allow mine to remain somewhat mixed, certainly there is a difference both in colour and spotting. The type is distinguishable from the brighter coloured variety *californicum*, but they are all handsome and free-growing. Many say this will not do without boggy soil, but that is mere assumption, they certainly will do well in ordinary soil if enriched with manure.—T.

REVIEW OF BOOK.

Greenhouse and Stove Plants. By THOMAS BAINES.
London: John Murray.

THE author of this work has obtained a well-deserved fame as a plant grower and exhibitor, and his production therefore comes with the greater weight, as recording the experience of a successful man. About 500 genera are arranged in alphabetical order. The culture in the majority of cases is given very fully, and a list of species or varieties is added to each. Chapters on general culture are prefixed to the alphabetical portion, and necessarily contain many useful hints. Palms and Ferns are treated separately in these introductory remarks, and in most cases afterwards the author has contented himself when noticing a genus of Palms or Ferns by referring to these general instructions. As regards many Ferns this may occasion some little difficulty, for the culture of such genera as *Gymnogrammas*, *Nothochloenas*, and *Cheilanthes* differs considerably from that required by most others. In a few instances, also, it may be noticed that there is much disparity in the space accorded to genera. Thus we find two columns are appropriated to *Chrysanthemums*, exclusive of a list of varieties, whereas Mr. Baines has thought it necessary to give seven columns to the *Clerodendrons*. These, however, are of comparatively small importance, for the cultural instruction is sound, and perhaps will prove more serviceable where it has been judiciously condensed than in the more extended chapters.

As an example of the style adopted we will extract a short chapter on the

BERTOLONIAS.

These small-growing stove *Melastomads* almost vie, as regards beauty of leaf-marking, with the most charming of variegated Orchids. They are natives of the hot countries of the east, and to grow them well and bring out and preserve their leaf-marking a high temperature is required. They are plants of quite a softwooded character, and do not grow to a height of more than 6 or 8 inches. They strike freely from cuttings made from shoots in a half-solidified condition. They may be struck at any time when obtainable in that state, but are most likely to be in proper condition in spring. Each cutting should consist of at least a couple of joints. Put them in small pots singly in sand, and cover them with a propagating glass, but do not keep them so close as to cause damp, as soft growth of a nature such as these, if too close and moist, is liable to rot. Give as much water as will prevent flagging, keep in a warm stove temperature, and shade when the sun renders this necessary. They will soon make roots, when they should be given more air, and, as they get established, be removed to larger pots. The soil best suited to them is fibrous peat mixed with some sphagnum sand, and crocks. A temperature of from 65° to 70° in the night during the growing season, with a rise by day proportionate to the warmth of the weather, will answer; 60° by night, with 5° or 10° more in the day, will do for the winter. Some growers keep the most delicately marked kinds almost wholly covered with a bellglass, as *Anectochili* are sometimes grown, but this treatment makes the plants very soft and tender; yet they do not do well if placed under drying influences, as where much air is admitted. If in a position of this kind, a propagating glass partially closed over them, so as to somewhat confine the air and prevent its getting too dry, will be an advantage. The plants must always be shaded when the sun is at all powerful; they should be stood where a moderate amount of light will reach them, and the soil must never be allowed to get dry. Little root-room will suffice, but, as the shoots are of a semi-procumbent habit, they must have as much space as will allow them to spread. They do well with the pots plunged in a shallow pan filled with a mixture of chopped sphagnum and sand, in which way, if a number of plants are so plunged, they are very effective.

The undermentioned kinds are all handsome:—

B. guttata.—From South America; has green ovate leaves, the upper surface spotted with rose. There are three forms of this plant, differing somewhat in the appearance of their leaves, but all handsome.

B. Houtteana.—A Belgian variety, most likely of garden origin, with beautiful foliage. Its deeply ribbed, lustrous, olive-green leaves are spotted with rose; the ribs are marked with rose-tinted hues.

B. margaritacea.—A Brazilian plant; has five-nerved ovate leaves, the ground colour olive-green with lines of white spots, the under surface reddish-purple.

B. primulaeflora.—This is a species from Ecuador, with ovate-lanceolate leaves, dark green in colour. It bears very handsome rose-coloured flowers.

B. superbissima.—This is also, we believe, a garden variety. It has large, broadly ovate leaves, in colour dark green, with large rose-coloured spots within the margin and smaller spots on other portions of the leaf.

INSECTS.—We have found these plants little troubled with insects except aphides, which sometimes affect them. Fumigation is the remedy.

The nomenclature is accurate throughout, the type is good, and the book is well bound.

POTENTILLA MENZIESII.

THE order Rosaceæ, to which the genus *Potentilla* belongs, may be regarded as one of the most important of the vegetable kingdom; for it includes within its limit not only some of the handsomest of our garden flowers, but also comprehends all the most valuable of the fruits of the temperate regions, such as the Apple and Pear, and the different varieties of the Peach, Plum, Apricot, and Cherry. Leaving aside, as foreign to our present purpose, the fruit-bearing genera, we may claim for the *Potentillas* a high rank among the ornamental plants of the order.

Of the 150 species and varieties known, all, with scarcely any exceptions, are interesting plants, and a considerable number of them are indeed scarcely inferior in beauty to any of the hardy perennials.

Most of the highly coloured varieties now so common in gardens are hybrids; the flowers of the wild species being, with very few exceptions, yellow or white.

Among those species most deserving of cultivation may be named *P. rupestris*, with pretty pure white flowers produced in May; *P. pyrenaica*, also an early bloomer, of dwarf habit, yielding bright yellow blossoms in profusion; *P. mollissima*, with primrose yellow flowers; *P. Richardsonii*, also yellow, with foliage silvery beneath; *P. atrosanguinea* and *P. formosa*, two Nepaulese species, the former with deep purple, and the latter with pale cherry-coloured flowers. These two species are not only interesting for their intrinsic beauty, but also as being the parents of many of the numerous hybrids which have adorned our gardens for years past. As one of the earliest and best of these we may name



Fig. 25.—*Potentilla Menziesii*.

Russelliana, formerly a very popular plant, but now superseded by varieties with greater breadth of petal and brighter colours, of which *P. Menziesii* may be regarded as the type. Equally desirable are the varieties *Hopwoodiana*, *Macnabiana*, *Smoutii*, *Striata multiflora*, all more or less distinct in colour. But beautiful as these are, they are eclipsed by the numerous double and semi-double varieties of recent introduction, which have the advantage of not closing their flowers so completely as the single-flowered, and their blossoms are also of longer duration. Some of the best of these are *Louis Van Houtte*, large, deep crimson; *Belisaire*, bright vermilion; *William Rollisson*, reddish yellow and orange; *Rosæflora plena*, rich velvety vermilion, edged with yellow; and *Vase d'Or*, canary yellow, all first-class plants, worthy of being added to the most select collection of perennials.

All the species and varieties we have enumerated are perfectly hardy, and of the easiest cultivation, though it cannot be said that they will flourish in any description of soil. They succeed best in a good rich earth of some depth, and require, in summer, a plentiful supply of water, especially about the time the flower stems are thrown up. We have never seen the *Potentillas* grown in beds, but we think that such an arrangement would be exceedingly interesting if a proper selection of plants were made. For the centre of the bed one of the shrubby species, such as *fruticosa*, or *floribunda*, both with yellow flowers, and growing about 4 feet high, would be well adapted; and around these might be grouped the erect-growing herbaceous species and varieties, reserving the trailers, of which there is a fair sprinkling, for the outer circle.

They are all readily increased by dividing the roots early in spring, and as these descend to a considerable depth, care must be taken that the fibres are not broken. Many of the species ripen seeds, from which new varieties may often be raised, and all the seedlings would flower the second season after sowing.

A wide field is here open to the amateur florist, and, with a little care and attention, he could scarcely fail to originate some valuable additions to this ornamental family.

There is an allied genus, of which a few species are occasionally found in gardens, and which fully equal in beauty the *Potentillas* we have named; we allude to the *Geums*. They are distinguished from the *Cinquefoils* by their lyrate leaves, reflexed calyx when in fruit, and more particularly, by the style of the numerous little granular seed-vessels being jointed. *Geum coccineum* (the *G. Quellyon* or *chiloense* of some authors), is an extremely handsome plant.

The properties both of *Potentilla* and *Geum*, as well as of *Tormentilla*, another allied genus, are very similar. Many of the species of the three genera are astringent and aromatic, and are all perfectly innocuous. The common *Potentilla anserina*, or *Silver Weed*, has been used by tanners; and *P. reptans*, another English species, of which a pretty double-flowered variety is sometimes met with in gardens, was formerly employed as a febrifuge.—W. T.

NETHER-EDGE FLORAL AND HORTICULTURAL SOCIETY, SHEFFIELD.

AUGUST 10TH AND 11TH.

THE sixth annual Exhibition of the above Society was held on land adjoining the tram terminus on Monday, the 10th inst.

The exhibitions of this Society have become very popular, and are largely attended, owing principally to the spirited way in which the Committee have provided other attractions in addition to those of the Exhibition. On this occasion the principal attractions consisted in the splendid band of the Scots Fusilier Guards from South Kensington for Monday the 10th, and on the second day (Tuesday the 11th) the fine band of the West York Yeomanry Cavalry, and in the evening a display of fireworks by Messrs. Brock & Co., London.

The two exhibition tents were fairly well filled, and the quality of the exhibits was generally considered to be superior to what has previously been seen at the shows of the Society.

In the open class the principal prize was offered for a group 10 feet by 10 feet arranged for effect, which brought five competitors and a very close competition. The first prize was awarded to Mr. B. Crossland, Richmond Nurseries, for a low and somewhat flat group, consisting principally of a very dense groundwork of *Adiantum cuneatum*, relieved by a few fresh plants of *Bouvardias*, *Tuberous Begonias*, *Crotons* and *Dracenas*, with a moderately good plant of *Cocos Weddelliana* in the centre. The second-prize group, exhibited by Mr. Hiram Shaw, nurseryman, Richmond, which was by many considered to be superior to the one last referred to and the best group shown, had as a centre a fine *Cocos*, around which were arranged a number of good plants of *Campanula pyramidalis*, blue and white, interspersed with *Hydrangeas paniculata* and *hortensis*, *Hyacinthus candicans*, and *Lilium eximium*; also some finely coloured *Crotons* and *Dracenas*.

The old-fashioned Chimney *Campanula* was also freely used in the group to which the third prize was awarded, and which was shown by Mr. Thomas Foggin, gardener to Mrs. G. Wilson, Tipton Hall. It appears to be one of the most effective of plants for this purpose. Messrs. Fisher, Son, and Sibray, Handsworth Nurseries, exhibited a fine group of beautiful and rare plants not for competition.

The competition in the class for six stove or greenhouse plants was not strong. The first prize was taken by Mr. Thos. Foggin with a fairly good six, containing good specimens each of *Stephanotis floribunda* and *Dipladenia Brearleyana*. Ferns were well shown in numerous very fine collections, especially in the classes for British Ferns. In the latter Mr. John Eadon secured first prizes in the classes for twenty-four and for six plants, showing beautifully fresh and healthy specimens, and numerous rare and choice varieties. The second place was obtained by Mr. J. G. Newsham, and the third by Mr. H. Davy, who each staged collections of very high merit. Next to the groups the collections of British Ferns were undoubtedly the finest feature of the show. Carnations and Picotees were shown in fine condition by Messrs. Simonite of Sheffield, and Proctor of Chesterfield. Dahlias were also very good from Messrs. Chas. Storey & Proctor. Roses were not good.

Fruit was only very moderately shown, the best Grapes being shown by Mr. G. F. Shorten, gardener to — Mosely, Esq., and Mr. W. Collier, gardener to J. Eaton, Esq.

There were some fairly good collections of vegetables, Mr. Thos. Foggin securing nearly all the first prizes for the same. An unfortunate occurrence happened, almost immediately after the judging was completed, to the tent containing the local gardeners' and amateurs' classes, which, owing to a heavy gale which was blowing at the time and the exposed situation, suddenly collapsed and fell with force upon the exhibits contained therein, breaking down the staging and destroying most of the plates and dishes with the fruit, &c., exhibited thereon. The plants were also much broken and damaged.

A fresh tent was procured and erected as speedily as possible, but this portion of the Exhibition was irretrievably spoiled. During the afternoon a luncheon was provided in a tent erected for the purpose, and about fifty gentlemen, amongst whom were Mr. Ashmead Bartlett, M.P., Alderman Hunter (ex-Mayor of Sheffield), who presided, Alderman Gee (Mayor of Chesterfield), Alderman Gainsford, and many more influential gentlemen.

ORCHIDS IN AUSTRALIA.

THE following extracts from a letter which I have received from my brother residing in Australia may be interesting to those of your readers who are cultivators of Orchids:—"Thanks for your graphic accounts of the exhibition of the Orchid Congress at South Kensington. The Orchids are a very interesting family of plants. Here, as well as in England, much attention is paid to their cultivation. The late Sir W. MacArthur spent several thousand pounds in building an Orchid house, and he used to give

sometimes from £50 to £150 for rare species from the West Indies and South America. We have *Dendrobium speciosum* and *Calanthe veratrifolia* in the adjacent mountains, but most of the species, excepting some in Queensland and North Australia, are small. The whole number of species now described for Australia are 500. The plant named after me is *Prasophyllum Woollsii*, a small species found by me several years ago.

"My friend Mr. Fitzgerald is publishing a work on Australian Orchids with beautiful illustrations; the Government assisting in the printing."—C. W.

NOTES ON ROSES.

I HAVE read with much interest Mr. Muir's "Notes" (p. 105), and am induced to make some remarks on them. I am not able altogether to agree with him, and someone else may remark the same in my own case. In my experience 1885 is not a first-class Rose year. In this valley of the Mole the May and even June frosts were constant. I never remember so many damaged blooms; in fact, it was the exception for the first buds to come true. With regard to the Crystal Palace Show, it is true it is a 7s. 6d. day, but the smallest exhibitor finds entrance as a matter of course, and breakfast tickets are given with the utmost liberality. In respect of Her Majesty, I fear we are not likely to see her in the boxes at present. My own impression is that this is one of the Roses that will bear starving, and will probably look better when half the size of some of those that have been exhibited. It is any way a most grand Rose, and Mr. Bennett may be congratulated at having now at any rate compelled admiration and acceptance of his Pedigree Roses. His Mrs. John Laing is also grand in substance, but of that light pink colour which does not blend well with others.

I fear I must also disagree about *Merveille de Lyon*. There were many in the class in which I was judging at the N.R.S., but there as elsewhere I hardly saw one where the eye was not apparent. It seems the habit of this Rose beyond all others to show this. Otherwise, as Mr. Muir says, in size and purity it is all that can be wished. The real white A. K. Williams has yet to be found. This was not perhaps an A. K. W. year, though many grand blooms are recorded as shown. This is one of the very best Roses for standing that I know. This certainly was an Ulrich Brunner year, and he will have forced his way into many fresh orders. Lady M. Fitzwilliam is not classed with the Teas; indeed, at one great show it took the silver medal as the best amongst the not-Teas. I think most will agree with Mr. Muir in his closing sentence, that practical notes on the Rose subject are valued and read with interest by Rose growers old and young.—A. C.

THE PITCHER PLANT.

THE variety of the Pitcher Plant (*Sarracenia variolaris*) found in North America is carnivorous, being a feeder on various animal substances.

Mrs. Mary Treat, an American naturalist, made, a few years ago, several experiments upon the plants of this species to be found in Florida; and to the labours of this lady the writer has been indebted, in some measure, in the preparation of this paper.

The *Sarracenia* derives its name of "Pitcher Plant" from the fact of its possessing the following curious characteristics. The median nerve is prolonged beyond the leaves in the manner of a tendril, and terminates in a species of cup or urn. This cup is ordinarily 3 or 4 inches in depth, and 1 to 1½ inch in width. The orifice of the cup is covered with a lid, which opens and shuts at certain periods. At sunrise the cup is found filled with sweet, limpid water, at which time the lid is down. In the course of the day the lid opens, when nearly half the water is evaporated; but during the night this loss is made up, and the next morning the cup is again quite full, and the lid is shut.

About the middle of March the plants put forth their leaves, which are from 6 to 12 inches long, hollow, and shaped something like a trumpet, whilst the aperture at the apex is formed almost precisely in the same manner as those of the plants previously described. A broad wing extends along one side of the leaf, from the base to the opening at the top; this wing is bound, or edged with a purple cord, which extends likewise around the cup. This cord secretes a sweet fluid, and not only flying insects, but those also that crawl upon the ground, are attracted by it to the plants. Ants, especially, are very fond of this fluid, so that a line of aphides, extending from the base to the summit of a leaf, may frequently be observed slowly advancing towards the orifice of the cup, down which they disappear, never to return. Flying insects of every kind are equally drawn to the plant; and directly they taste the fluid they act very curiously. After feeding upon the secretions for two or three minutes they become quite stupid, unsteady on their feet, and whilst trying to pass their legs over their wings to clear them, they fall down.

It is of no use to liberate any of the smaller insects; every fly, removed from the leaf upon which it had been feeding, returned immediately it was at liberty to do so, and walked down the fatal cup as though drawn to it by a species of irresistible fascination.

It is not alone that flies and other small insects are overpowered by the fluid which exudes from the cord in question. Even large insects succumb to it, although of course not so quickly. Mrs. Treat says:—"A large cockroach was feeding on the secretion of a fresh leaf, which had caught but little or no prey. After feeding a short time the insect went down the tube so tight that I could not dislodge it, even when turning the leaf upside down and knocking it quite hard. It was late in the evening when I observed it enter; the next morning I cut the tube open; the cockroach was still alive, but it was covered with a secretion produced

from the inner surface of the tube, and its legs fell off as I extricated it. From all appearance the terrible *Sarracenia* was eating its victim alive. And yet, perhaps, I should not say 'terrible,' for the plant seems to supply its victims with a Lethe-like draught before devouring them."

If only a few insects alight upon a leaf no unpleasant smell is perceptible during, or after, the process of digestion; but if a large number of them be caught, which is commonly the case, a most offensive odour emanates from the cup, although the putrid matter does not appear to injure in any manner the inner surface of the tube, food, even in this condition, being readily absorbed, and going to nourish the plant. In fact, it would seem the *Sarracenia*, like some animals, can feed upon carrion and thrive upon it.

In instances in which experiments have been made with fresh, raw beef or mutton, the meat has been covered in a few hours with the secretions of the leaves, and the blood extracted from it. There is, however, one difference between the digesting powers of the leaves when exercised upon insects or upon meat. Even if the bodies of insects have become putrid, the plant, as has already been stated, has no difficulty in assimilating them; but as regards meat, it is only when it is perfectly sweet that the secretions of the leaves will act upon it.

The Pitcher Plant undoubtedly derives its principal nourishment from the insects it eats. It, too—unlike most other carnivorous plants, which, when the quantity of food with which they have to deal is in excess of their powers of digestion, succumb to the effort and die—appears to find it easy to devour any number of insects, small or large, the operation being with it simply a question of time. Flies, beetles, or even cockroaches, at the expiration of three or four days at most, disappear, nothing being left of them save their wings and other hard parts of their bodies.

The *Sarracenia* is, indeed, not only the most voracious of all known species of carnivorous plants, but the least fastidious as to the nature of the food upon which it feeds.—W. C. M. (in *Nature*).

CACTUSES AT HOME.

IN Utah, *Echinocerus phœniceus*, *Echinocactus Simpsonii*, *Mamillaria vivipara*, var. *neo-mexicana*, and *Opuntia missouriensis*, stand out in their native places and do well with frost 22° below zero; but they grow upon well-drained gravelly hillsides, and are usually covered with snow from Christmas to the following May. So much for the iron-clad Cactus. Then there are *Cereus Engelmanni*, *Echinocactus Whipplei*, *Echinocactus Sileri*, *Echinocactus cylindraceus*, *Opuntia rutila*, *Mamillaria chlorantha*, that grow with the *Agave Utahense* on the sandstone ledges, in many instances with hardly sand enough to cover their roots, and there are two Cactuses that stand out exposed to the fierce heat of the summer sun where hardly a lizard is to be found, with the thermometer down to zero in the winter.

In the Beaver Dam Mountains, west of St. George, growing in the sand on the limestone ledges with *Yucca brevifolia* are *Echinocactus Johnsoni* and *E. LeContei*. In this locality there is but little snow, but the thermometer often falls within 10° of zero.

The question has been asked of me very often lately as to when it rains and when it does not. Snows and rain commence about the 15th of December, and continue until about the 1st of May, when a period of drought sets in, lasting until about the 24th of July. This being a holiday it always rains, and it continues to rain until the last of August. At the higher altitudes where the first-named Cactus grow, frost usually follows a rain, let it be at what season of the year it may. Last night, June 11th, ice formed quarter inch thick, following a very unusual rain storm that came off last week.

A few years since I had a number of *Agave Utahense* that I wanted to keep until I could get orders for them. I planted them with a *Mamillaria vivipara* in a box of clay soil, and told the lady in charge of the place to water them occasionally. I was away for some two or three months. When I returned to get my *Agave* plants to send away I found them swimming in water, and was informed that they had been sitting on a back porch where they got the morning sun only with a pail of water from the well every morning. I expected that they were ruined, but to my surprise they were well supplied with new roots. I have, when collecting Cactus, set out on dry ground in favourable locations what I had left over after filling orders; but I have never had the good fortune to have any of them root as well as the *M. vivipara* set with the *Agave* noted.

A number of the readers of the "Gardeners' Monthly" have asked me to tell them about the soil that our Cactus grow in. *Cereus Engelmanni* arrives to its greatest perfection on the ragged edges of limestone ledges with a soil of clay and gravel. *Echinocactus Johnsoni*, *E. LeContei*, *M. chlorantha* and *Opuntia rutila* delight in a south-westerly exposure on the side of sandy and gravelly ridges with bed rock of limestone. *Echinocactus cylindraceus*, *E. xeranthoides*, *E. Whipplei*, *Opuntia chlorotica*, *M. phellosperma*, are found on the west side of canons facing the morning sun, but never on the east side sand on sandstone ledges generally. *Echinocactus Sileri* on low hills, soil rotten gypsum. *Echinocactus phœniceus*, *E. Simpsonii*, *Opuntia missouriensis*, gravelly soil facing to south-west, or on top of high gravelly hills about the rim of the great basin. *Mamillarias vivipara* and *neo-mexicana* gain their greatest perfection in very tight clay soils amongst Sage brush.—A. L. SILER, Kane Co., Utah (in *American Gardeners' Monthly*).

CARYOPHYLLUS AROMATICUS.

THIS is a commercial plant of considerable importance, and has been known to this country for nearly a century. It is only cultivated in

choice and botanical collections of plants, where it flourishes in a soil composed of loam and peat, and must have a high steady temperature. It is propagated by cuttings inserted in sand under a bellglass. But while we speak of it and know it as a plant in our artificial mode of growing it, yet in its perfected state it is a tree of which the clove spice of commerce is the dried flower buds. Dr. Hogg in his "Vegetable Kingdom" states that the Clove is a tree 20 to 40 feet high, a native of the Moluccas, but now cultivated all over the East Indies where situations favourable to its growth can be obtained, and also in some of the West India islands. The cloves of commerce are the unexpanded flower buds, the corolla forming a ball on the top between the teeth of the calyx. They are first gathered when the trees are about six years old, and are either collected by hand or beaten with reeds so as to fall upon cloths which are placed under the trees to receive them, and dried either by fire heat or in the sun. The fruit, which is a dry berry, also possesses a very aromatic



Fig. 26.—*Caryophyllus aromaticus*.

taste and odour. The use of cloves in domestic economy is well known. Water extracts the odour of cloves, with comparatively little of their taste. All their sensible properties are imparted to alcohol; and the tincture when evaporated leaves an excessively fiery extract, which becomes insipid when deprived of the oil by distillation with water, while the oil which comes over is mild. Oil of cloves is obtained by distilling cloves with water, to which it is customary to add common salt in order to raise the temperature of ebullition; and the water should be repeatedly distilled from the same cloves in order completely to exhaust them.



HARDY FRUIT GARDEN.

STRAWBERRY BEDS.—Important work has now to be done in Strawberry cultivation. If new beds are to be made it must either be done at once or left till next spring—preferably at once if space can be had, but many gardens are so crowded with crops that the planting of Strawberries is put off till autumn, with the unsatisfactory result of the plants not becoming fully established before winter. If the soil is of a close heavy

texture let plenty of fine coal ashes be well worked into it, with enough manure, old and rich, to insure perfect fertility and thorough mechanical division. Then select strong-rooted runners, lift them carefully with large balls of soil and as many roots as possible, plant 1 foot apart in rows 2 feet asunder, give a plentiful watering, and continue to water three times weekly till the end of September. Run a hoe occasionally through the surface of the soil among the plants to keep down weeds and to keep the surface loose and open. If sewage can be had use it in preference to water, our object being to induce a robust autumnal growth and strong plump crowns to afford a truss or two of fine fruit early next season. Of sorts to be regarded as indispensable take Black Prince and Keen's Seedling for a warm corner or southern slope; for the earliest fruit and for open beds Marguerite, Sir Joseph Paxton, James Veitch, Hammonia, Dr. Hogg, Lucas, Sir Charles Napier, President, Unser Fritz, Bicton Pine (white), and Loxford Hall Seedling.

For new gardens, or wherever there is any feeling of doubt about which sorts will answer best for large beds, we recommend the planting of all we have enumerated, as well as small trial beds of all new sorts as they are introduced, so that clear knowledge of the comparative value of each sort may be had, and the best possible selection made. If new beds cannot be made now make nursery beds of runners planted about 9 inches apart in rich soil, and there is nothing better for this purpose than an old hotbed with soil and manure chopped up and well mixed. Keep these beds well watered and free from weeds, and next February or early in March remove the plants to permanent quarters, where they will be found to answer much better than when planted late in autumn. Let the plants of old exhausted beds be at once hoed up and cleared off, and the fruiting beds with the plants in full vigour should have runners and weeds hoed and cleared from between the rows, a heavy dressing of old well decayed manure being applied and at once dug in. This will induce a strong growth of roots, foliage, and crowns, and go far to insure a full crop of fruit next season.

WATERING FRUIT TREES.—To insure a full healthy development of branch, foliage, and fruit the trees must at no time be allowed to suffer by want of water. One thorough watering, followed by a mulching of litter, is better than half a dozen waterings without it. Keep the soil about the roots moist and the foliage clean, and there will be very little risk of loss from blight or disease of any kind.

FRUIT FORCING.

VINES.—*Lifting the Earliest Vines.*—No time should be lost in lifting and relaying the roots in fresh material, as success greatly depends on the formation of new roots before the leaves fall. Advantage should be taken of dull moist weather, and the Vines being carefully syringed and shaded, the roots will speedily take to the fresh compost, as is evidenced by the crisp appearance of the lateral growth soon afterwards, and when this takes place, and one or other of the borders having been left undisturbed, the ventilators may be thrown open with a view to barden and ripen the wood. Root-action should be assisted by an occasional syringing on fine evenings, and to allow the laterals to ramble until the middle of September, when growth should be checked by shortening preparatory to the autumn pruning.

Vines Cleared of Fruit.—Shorten all semi-extensions and lateral growths, carefully preserving the old leaves as the work is performed, and water thoroughly on fine evenings with water from the garden engine to cleanse from dust and insects. The house should be ventilated to the fullest extent day and night unless there is any doubt as to the ripeness of the wood, in which case it will be advisable to allow the temperature to rise by day to 80° or 85°, and rest the Vines at night by throwing the house open. Give sufficient water to inside borders to keep every part of the soil moist down to the drainage. The outside border should receive the annual top-dressing of loam and crushed bones whilst the leaves are on the Vines.

Young Vines for Early Forcing.—These will, from having made their growth early, have the wood firm and brown, and now or soon may be divested of all laterals as a means of inducing rest. Syringe occasionally to keep the old foliage clean and healthy, closing with dry sun heat every afternoon, and throw the ventilators open through the night.

Muscats Ripening.—The Vines will require more light and air; but in the event of red spider appearing, which is unusually troublesome this season, some of the main leaves being injured, a good spread of laterals should be left for protecting the shoulders of the bunches from the direct rays of the sun. The atmosphere should be kept warm, especially in the daytime, with free ventilation in the early part of the day, and enough at all times to insure a circulation constantly.

Late Vines.—Those of the thick-skinned keeping varieties as a rule require a long time to ripen with plenty of heat, which should be provided as far as possible by sun heat, commencing to increase the ventilation from the early part of the day, keeping the temperature through the day at 80° to 90° from sun heat, and allow the ventilators to remain open at night with, if necessary, a little warmth in the pipes to insure a circulation of air. If there is any fear of the borders becoming too dry a good watering should be given in the early part of a fine day, so that by free ventilation any superfluous moisture will be dried up before night.

Late Houses of Black Hamburgs.—The Grapes are swelling rapidly, and should have thorough supplies of liquid manure to both inside and outside borders, or good waterings through a mulching of manure. Do not allow the laterals to extend so as to crowd the principal foliage; at the same time allow a fair extension of the laterals as an incentive to root-action. Ventilate freely from the early part of the day, allow the

heat to rise to 80° to 85° and to 90° after closing, with plenty of atmospheric moisture, and before night admit a little air to allow of the escape of any moisture. No fire heat will be necessary unless the weather be unusually cold. Maintain a good moisture by sprinkling available surfaces at closing time and as necessitated by the weather.

Houses of Ripe Grapes.—Give abundance of air and keep the night temperature low, with sufficient fire heat to prevent the condensation of moisture on the berries. Damp the floors and paths on fine days—i.e., mornings. Black Grapes will be the better for a slight shade for a few hours when the sun is shining on houses that are not well filled with clean healthy foliage.

MELONS.—Late plants, which will now be setting their fruits, should, as soon as they begin to swell, have the fruit thinned to three or four to each plant, leaving, of course, the best situated and most even-shaped. Damping the plants and house morning and evening during bright days, and when the temperature is likely to fall below 70° at night fire heat should be employed to prevent it. Ventilate freely on all favourable occasions, and close about three o'clock with sun heat at 85°, and raise it to 90° with plenty of atmospheric moisture. Fire heat should be employed if necessary to maintain a day temperature of 70° to 75°. Let the plants when necessary have a good soaking of liquid manure, not too strong and in a tepid state, at the roots when the fruit is swelling, which will greatly assist their development. Keep the laterals closely pinched, not allowing them to interfere with the principal foliage, the foliage being kept so thin as to allow of the free access of light and air, thereby securing a proper elaboration of the sap, and consequently firm, heavy, well-flavoured fruit.

Plants growing in dung frames will need water sparingly either at the roots or overhead, as, the days getting shorter, there will be a consequent prolongation of atmospheric moisture. With the soil in a proper condition as to moisture very little will be needed after this, as the roots push into the fermenting material and there find a congenial moisture and a good supply of stimulating food. In ripening Melons in frames much depends on the sun heat; especially is this the case with late crops—therefore every opportunity that presents itself should be taken advantage of by closing early every afternoon, and on bright warm afternoons damp the plants lightly at closing time. In order to assist late plants in swelling their crops linings will be advantageous, and mats over the lights on cold nights.

PLANT HOUSES.

Selaginella denticulata (Kraussiana).—This is without doubt the best of all Mosses to grow for furnishing the surface soil of the various plants used for room-decoration during the winter months. It is useful for a variety of other purposes in arrangements that have to be made effective. To have it in good condition during winter it must be planted in shallow pans or boxes without delay. Hitherto we have found it most useful in pans a little more than 1 inch deep and about 7 or 8 inches in diameter; well-furnished plants in 2 and 3-inch pots are also serviceable. When established in shallow pans it can be lifted with the soil attached to the roots, and then lasts more than double the length of time that would be the case if established in a greater depth of soil, which would have to be removed from the roots before the plants could be used. If sprays are planted thickly in pans and started into growth in a close, moist, heated house or pit, they will quickly take to the new soil and become established. After this the growth will be firmer in a cool temperature, and will last better in rooms accordingly.

Panienum variegatum.—This is very useful for decoration in 3-inch pots, and to have these in the best possible condition for autumn and winter no time should be lost in inserting cuttings thickly. These strike best in a close frame shaded from the sun, and when once rooted may be grown in the stove or any warm moderately moist structure until they grow thickly and are well-furnished plants, when a slightly lower temperature will suit them.

Isolepis gracilis.—Decidedly the best of all green plants for fringing the conservatory or greenhouse stage during the winter months. To have plants luxuriant during that period a number should be divided without delay and placed in 3-inch pots in any moderately rich soil. After potting, the plants should be kept close for about a fortnight, then grown under cool conditions; plants so treated will be ready for use by the middle or end of October. When these plants crowd their pots with roots before autumn they not unfrequently turn yellow during the winter months, and present anything but an attractive appearance. When repotted about this time they usually retain a beautiful healthy green appearance during the whole of the winter months. One or two applications of Standen's or other artificial manure during the winter assists them considerably.

Roman Hyacinths.—The bulbs are remarkably fine this year and cheaper than usual, which will allow of a greater quantity being grown to yield white fragrant flowers for cutting and other forms of decoration. No Hyacinths are more serviceable for cutting than these, and those who require a good supply of flowers should pot bulbs at once, and in batches at intervals of a month until the end of October. If this is done a constant supply of flowers may be maintained from the middle of October until the middle of March. For decoration in pots the bulbs should be placed five or six together in 5-inch pots; if for cutting, thickly together in pans and boxes. One crock will be ample at the base of the pots. A little sand should be placed at the base of the bulbs, and the compost for them should consist of good loam three parts, the other part being composed of leaf mould, decayed manure, and sand. The pots containing the bulbs should be placed outside without watering them, and covered 4 or 6 inches deep with ashes. They may remain in this position for at least

six weeks, when they should be examined, and if full of roots taken out, placed in a frame, and gradually exposed to light and air. Exposure must be gradual, or else the tips of the foliage will become browned.

Narcissus.—The early-flowering varieties, such as Paper White, double Roman, and single Jonquils, can now be obtained, and should be potted without delay. The two former may be placed in 6-inch pots, five or six bulbs in each, while the latter may be placed in the same size as Roman Hyacinths. If required only for cutting, the bulbs should be packed closely together in boxes. The bulbs should be treated exactly the same as recommended for Roman Hyacinths.

THE BEE-KEEPER.

USEFUL HINTS.

I HAVE always endeavoured to give a useful hint now and again in all articles, but in accordance with the wish of a number of readers, gladly avail myself of the opportunity to place these occasionally under the above heading. The great difficulty in giving useful hints is not so much to indicate what to do, but what not to do. This difficulty arises from persons assuming to what they are themselves ignorant of. The first hint I have for this month is to ask all bee-keepers to take nothing for granted, but test and prove everything before putting anything into general execution. By pursuing this course difficulties will disappear. The second hint is to note carefully under what system the bees collect most honey with the best finish. Harken not to, nor be led away by the report of somebody's bees gathering double or treble the quantity of yours. I am just in receipt of a letter from a clergyman who keeps bees to encourage his poorer brethren by giving information and supplying them with bees gratis. This year his hives have each of them given him 126 lbs. of fully finished sections and supers—the former his favourite—while my own hives, better bees than his, are short of that yield. From the reports I have previously had from that gentleman I am certain that had our bees been standing side by side mine would have had the heaviest yield. This is proved by the fact that in my immediate neighbourhood bees wrought on the same principle as that clergyman's have no surplus honey in supers. I repeat, there is no proof of which is the best system unless managed side by side.

I gave my experience last year of sections and supers, and showed the superiority of the latter over the former, determining then to discard sections altogether, which I did almost. One hive I pitched upon to further test that I was right in my conclusions. The one half of the top of this hive I covered with supers, the other half I covered with sections. The result is the same as my previous experience—the supers are filled, and not a bee has as yet entered a section. I have shown this hive to many bee-keepers, amongst them a bee-keeper from Derby and a reader of this Journal, who I know will support the truth of this statement. I am convinced the great majority of bee-keepers at the present day have no practical experience of supers. They employ appliances as they have been taught by others who did not possess the knowledge of both sides of the question; then they in turn teach others, and boast of the superiority of their system over that of which they possess no knowledge of. I have been as successful with sections as anyone could be, but I soon perceived they were a mistake. The fault is the broad bottom bar, with the space between the top of the hive and sections—repugnant or objectionable to the bees, who often prefer to swarm or cluster out instead of entering them, at the best losing time they do not lose when supers are employed.

I have already given an explanation of my divisional supers. I now give instructions how these may be employed in combination with sections, as some prefer these. But perhaps I had better explain a still simpler super for that purpose. The super proper, or I may say rack or crate for sections, serves all the three purposes, while it has the advantages of having the sections more compactly filled than any other way, and the bees do not object entering them,

while it is unnecessary to glaze, or otherwise pack for show or market, than the usual packing between combs, covering the tops with stout paper and lashing two together. When under the eye the whole crateful is seen at a glance, and comb never looks better than in the position the bees built it. Such a crate can have all its sections of one size, or if preferred of various weight.

The super is intended to be square, the front and back to be rebated, or better kept the thickness of top bar, narrower than the sides, which may have a pane of glass. The top bars should be $1\frac{1}{4}$ inch broad. Pieces of angled tin hold these down and close the openings between bars; two or three screw nails with washers beneath hold the whole rigid. The sections must be of the same breadth as top bars, and in three pieces only, *minus the bottom bar*, and for the purpose of allowing a thread to pass freely between top of hive and sections they should be a little shorter than the depth of case—less than one-eighth is sufficient. A staple, nail, or a small wedge should be employed at the bottom of the case to keep the ends of the sections in their proper place—in other words to preserve the $\frac{1}{4}$ -inch distance between the ends and case similar to a frame in a hive.

To fasten the section to the top bar, pieces of tin bent thus—hold them firm and close to the bar.

The broad side is uppermost, and a tacket or hobnail driven on one side of these preserves the required distance between the bars and prevents moving under any movement. One of these on the sections each side is sufficient, but should be an inch road. There are many ways of bending these, but a pair of square-mouthed plyers will serve most bee-keepers.

The Clover season is now past, and while many bee-keepers have a large field, many others, owing to the untoward early summer even in good districts, will have to be content with a moderate yield. There is already a large quantity of honeycomb in the market selling at a fair price. I have just been examining a large quantity of honeycomb in its different form of packages, supers, and sections by the hundred, the latter quite up to the mark for colour and quality; but, seemingly strange, not one of them up to the ideal standard of perfection we read so much about, which I easily understand. Obstinate creatures are these bees! During my peregrinations I visited many honey merchants, who displayed large windowfuls of honeycomb, none of it standing in its original position, all of it bleeding, and many of the combs detached from their bar, exposed to all the dust and perfume of its surroundings, while the flies were holding a rich banquet on its beady surface, much reduced in appearance and value than when it was in the hands of the careful bee-keeper. Many of the honey merchants whom I conversed with showed little inclination to buy more of the same packages, for indeed if people are as fastidious as I am they will hesitate before purchasing the finger-marked comb in sections which will have to be broken up and sold in small pieces. While the above was the tone of all I talked with, every one of them was prepared to purchase supers of from 3 to 6 lbs. in weight, because many people buy these for presents that would not otherwise purchase honeycomb—very congratulating to the ears of the introducer of small supers, and ought to be welcomed by all those who find a difficulty in bees entering sections and finding a market for the same. Surely this simple way of creating a market and teaching people to eat honey is a useful hint, and might have been first instead of third.

The fourth one is perhaps important too as teaching what not to do. Mr. G. Abbey as well as myself have touched on the topic of slaughtering bees; yet in the August number of the *British Bee Journal*, under the head of "Driven Bees," we find, "The bees should be carefully and quietly driven from the skeps, almost to a single bee, and the combs cut out clean and deposited indoors to prevent robbing, and the empty skeps returned to the garden to be cleaned by the bees." Such information coming from one who assumes to

teach the nation betrays his incapacity to do so, and naturally raises the question, Should the teacher and pupil in this case not be reversed? The following is the cottager's useful hint. It is a well-known fact to all cottagers who have kept bees any length of time that by exposing honey, empty combs, or syrup in even very small quantities irritates the bees to stinging for weeks after, incites them to robbing and seeking everywhere for more, losing themselves in thousands in houses and factories, killing each other in the hive in the conquest to win, and disabling every queen the strangers can lay hold of. In short, so fatal to bees is the above practice, that by exposing one ounce or less of honey whole apiaries may be entirely ruined, as has been already shown; yet such is the "useful" hint given by our contemporary. No wonder that such calamitous inventions are sought after as spreading of brood and late breeding, resulting alike fatally. The same *Journal* contains a drawing and explanation of a "mel pel," said to be newly invented and provisionally protected. I have not the number of the *Journal of Horticulture* beside me which to my memory contained a description of a similar machine, and from which many were made both here and elsewhere. Perhaps some of your readers will be able to give the extract. I think it appeared about fifteen years ago. Meanwhile, if any person has a desire to make such a machine they need have no fear they are infringing patent rights; besides, it is desirable to keep a watch that patents are not acquired for others' inventions.—A LANARKSHIRE BEE-KEEPER.

BEES DWINDLING IN A STEWARTON HIVE.

I SHOULD feel much obliged if the "Lanarkshire Bee-keeper" will give information on the following points:—I got a Stewarton hive last autumn, into which I put the bees from two straw hives, and fed it well. The numbers kept strong during the winter and spring, but dwindled quickly during the summer. The hive had two breeding boxes, which I reduced to one, and after a while not over a handful of bees were left in it, with the queen—a Ligurian, which was introduced in autumn. There was a good deal of sealed honey, but the lower part of the combs had no eggs or brood, and the pollen which was in it and the comb had a very foul unwholesome look. The floorboard, sides of hive, and moveable slips were black and damp-looking, and I think the loss of the bees must be owing to want of ventilation. Is this likely to be so? and will he kindly say how the hive should be covered both for summer and winter, and also how best to ventilate it? The hive itself has no provision for ventilation when all the slips are left in. I did this during the winter, and had over the hive a wooden cover, supplied by the maker, which overlaps the floorboard, and has a moveable, but close-fitting, lid, with no ventilation. Between the hive and cover I put a quantity of thick close woollen cloth, but none on the top.

Would it be an improvement to put ventilators on the top of the cover, and both for summer and winter to draw part or all of the slips on top breeding-box, covering with woollen material? What is the best system of ventilating?

I have now two Stewarton hives, which I think of keeping over the winter, and will be grateful for any hints as to their management. They and straw hives, with one bar-frame, I mean to take to the Heather this week.—A. R.

[From the description given by "A. R." I am inclined to think that when introducing the Ligurian queen in autumn the proper precautions had been omitted, and a young queen was raised, remaining unfertilised; hence the reason there was no brood. Much has been written in favour of introducing queens direct, and without the usual precautions that experienced bee-keepers found necessary, but the inexperienced say are unnecessary, because they may be successful with a chance queen. In all cases of introducing queens it is advisable to use every precaution necessary to insure success; without that failure is certain some time or other.

The hive seems to have been badly managed. Too much care had been taken to make the sides comfortable, while the all-important part, the crown or top, had been neglected. If the top of a hive is well covered with dry straw or meadow hay the covering of the sides may be dispensed with. When the crown of the hive is kept warm and dry the bees are able to dispel the vitiated air before it condenses on the top, sides, and floor of a hive. In a state of nature bees fasten their combs to the under side of overhanging rocks or shelves, protected from sun and rain; and though exposed at the sides they live and prosper in such a situation.

Top ventilation, though advisable if done so as not to create a draught, is of less importance than under ventilation. The close-fitting roof and top of a hive barely covered would bring about results as above described. There should be no difference between winter and summer's covering. Free ventilation around the hive at all times is absolutely necessary, while the top of the hive should never have less covering than 3 or 4 inches. Tolerably solid and dry hay, unless for supers, is preferable at all times to

woollen cloths, and but for the dust is better for these too. I recently described an efficient and cheap, though neat, cover for all kinds of hives. The useful hint regarding covering hives is to have them so covered that rain cannot touch any part, while the air circulates freely over every part of the hive or coverings. This attended to with a ventilating floor added, no hive will suffer from our severest winters or hottest summers. It would certainly be a great improvement to have the cover ventilated so as to dry up the moisture generated on the top during winter, and to keep the same cool in summer.

The ventilating floors are made with perforated zinc on the top, with a sliding bottom beneath, and at a distance between from 1 to 2 inches. For taking bees to the Heather safely ventilation both above and below is advisable. With paper and cork packed between the combs, which requires to be removed at the Heather, where the bees rushing out on a strong site would probably never reach their own hive, while robbing, stinging, and queenless hives would be the result.—A LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

Dammann & Co., Naples.—*Illustrated List of Vegetables and Flowers.*
Ant. Roozen & Son, Overveen, Haarlem.—*Catalogue of Dutch Bulbs.*
W. Baylor Hartland, Temple Hill, Cork.—*Little Book of Daffodils (illustrated).*
L. Späth, Berlin.—*Catalogue of Bulbs.*
Waite, Nash & Co., 79, Southwark Street, London.—*Wholesale Catalogue of Flower Roots.*
George Buyard & Co., The Old Nurseries, Maidstone.—*Catalogue of Hyacinths and Dutch Bulbs.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Souvenir de la Malmaison Carnation (Clarke & Co.).—We think you pink sport from the above variety dissimilar from others we have seen, and very good indeed. It is large, fragrant, and pleasing in colour.

Hautbois Strawberry (H. W.).—The Strawberry leaves were quite withered and the fruit crushed. It is one of the Hautbois varieties, the peculiar flavour of which is much enjoyed by many palates. The plants are of easy culture. The flower was withered beyond the possibility of identification. We have received many shrivelled specimens this summer that no one could name.

Fruit Trees for Manitoba (G. A. C.).—We have no data whatever to guide us in selecting Apples and Pears for the purpose indicated. The best thing you can do is to state your requirements to some extensive grower of fruit trees, as most large nurserymen send consignments to America yearly, and no one knows better than they do the best varieties, time to send trees, and the best method of packing them to reach their destination safely and at a suitable time for planting.

Gloxinia Leaves Rusted (S. W. L.).—The drying and curling of the leaves both of Gloxinias and Achimenes is generally caused by too much sun and a dry atmosphere. They cannot be grown well except in a somewhat humid atmosphere, and the pots should always stand on a moist base in summer, and the plants be shaded from bright sun, and they should not be exposed to sharp currents of dry air. With suitable atmospheric conditions and active root-action, in good soil, plants raised from healthy tubers are sure to flourish. Thrips often infest the plants in a dry atmosphere, and in that case there can be no healthy growth.

Insects on Chrysanthemum (J. L.).—We gladly do our best to answer your queries, but are certainly surprised that a gardener of your experience should have enclosed specimens in a slip of paper placed within an ordinary letter. The insects should have been put in a box which would bear pressure, and it would have also been better to have sent each species apart. Your leaping insect, which we may call No. 1, is the frog-hopper (*Aphrophora spumaria*), the mature stage of the too common "cuckoo spit," which appears on many plants in May and June. It is certainly desirable to kill this insect whenever it can be caught. The more quiescent (No. 2) is the larva or grub of a ladybird or coccinella, therefore deserving of encouragement. No. 3 seems to be a small beetle of some kind, too damaged for recognition. It may be injurious, but small holes in the buds of Chrysanthemums are occasionally caused by earwigs.

Croton Leaves Falling (Town Gardener).—When we examined the leaves, before reading your letter, we arrived at the conclusion that gas or some deleterious fumes had found entrance to the house. We observe that you have been damping the house with liquid manure. We have not a doubt that if the liquid is strong the ammonia arising therefrom has caused the injury, particularly as the sun has been bright of late, and houses suitable for Crotons cannot be ventilated so early and freely as vineries can. We have seen Vines injured in the same way that your Crotons are when strong liquid manure has been used for damping, the house closed all night and the lights not opened very early in the morning. With a proper system of ventilation Vines are benefited by impregnating the air with ammonia after the foliage gets firm and the Grapes are swelling after stoning.

Caterpillars on Vines (E. D. C.).—Your Vines, we regret to say, are attacked by a very destructive insect, a species of *Tortrix*, which is fortunately not very prevalent in this country. We are quite familiar with this Vine scourge, having seen an example of its destructiveness in a very fine house of Grapes in Lincolnshire, and it was only banished by the most sedulous attention of the gardener in destroying every moth, chrysalis, and caterpillar he could find. By shaking the bunches the latter fall by a web, and many of them may be caught; also by fumigating a vinery moderately and shaking the Vines the moths are disturbed and succumb to the fumes. It is very important that the house and Vines be thoroughly cleansed in the winter, every portion, Vines, walls, woodwork being washed, and, if the border is inside, removing the surface soil down to the roots and adding fresh. Any plants in the house should be similarly cleansed and top-dressed. If this work is well done the pest may possibly be eradicated, or nearly so, and by prompt action next year in destroying the first moths the house may be cleared of this highly destructive pest. Can you oblige us with more specimens so packed that the Grapes do not crush the moths, as was the case with those you sent?

Cucumbers Failing—Cœlogyne (Trike).—We cannot account for the failure of your Cucumbers unless the soil is too rich or the leaves imperfect, so that the sap is not elaborated and assimilated. Are you sure there is no disease—tubercles on the roots? Place the Cœlogyne in a rather shaded position in a cool stove; or if it has made its growth it will be quite right in a vinery, but not in a position where it will be exposed to a dry current of air. It may be sprinkled daily and the roots kept moist, but not saturated, a sour medium being ruinous to Orchids. If you possess back numbers of the Journal and consult the indexes you will find the culture of this useful and easily grown Orchid described.

Mealy Bug on Vines (Y. Z.).—There is no ready method of clearing mealy bug from Vines when it has been permitted to become established in the bunches. Metbylated spirits applied with a small brush will destroy the insects. The leaves should be gathered from the Vines after they have turned yellow in the autumn and burned. This is far better than allowing them to fall and thus scattering thousands of insects in the house. Pruning should be done early, the rods washed and dressed with tar and clay mixture, every part of the woodwork and walls washed, and plants cleansed as suggested to another correspondent in clearing his house of another Vine pest. It depends on the thoroughness on which the cleansing is done as to whether the Vines are seriously attacked next year or not.

Painting Stage in Vinery (A. B.).—After the Grapes are ripe you may safely have the stage painted, as the foliage of the Vines will not be so readily injured as when in a young state; indeed no injury will ensue either to the Grapes or the foliage providing you ventilate freely by the top and front lights day and night, so as to secure a free circulation of air. The best Grape of the two you name for exhibition at the end of August would be *Alnwick Seedling*, which, when well represented, is a very telling variety, but the other is very good, yet not in season until a later period. Better than either for the time named is *Madresfield Court*, as a rule, judging by the successful examples staged at the leading shows.

Applying Liquid Manure to Roses (Mechanic).—As you wish to avoid diluting with water, the liquid should be applied just after or along with rain, or it may be applied at other times without injury, only keep at a distance of, say, a foot from the stem. Be careful, however, not to apply it in very dry weather, as there is not only great waste in so doing, but the hungry roots will lay hold of it, and even if they are not injured, the manure will have an injurious effect upon the plants, hence we advise its being used only when the soil is moist. It may also be applied in early winter and spring as a means of enriching the soil. We should not use any disinfectant, as there will not be much smell, or only whilst applying (which should be done at night), the soil being the best of all deodorisers, but you may put on a sprinkling of dry soil after each application, so as to absorb any matter remaining on the surface, an inch thick being sufficient.

Crimson Galande Peach (W. H. Divers).—The fruits you have sent are well-grown examples of the above well-coloured and richly flavoured variety, and we are not at all surprised to hear it is a favourite of such a good judge of fruit as Mr. Hopwood is. This Peach is described as follows in Hogg's "Fruit Manual":—"Fruit large, roundish, and rather uneven in its outline, marked with a very faint suture, and pitted at the apex. Skin almost entirely covered with very dark crimson, nearly black. The little on the shaded side that is not coloured is a pale yellow. Flesh very tender and melting, very much and deeply stained with blood-red at the stone, from which it separates freely. Juice very abundant, rich, sprightly, and deliciously flavoured. Flowers small. Leaves with round glands. This is a very distinct and very excellent Peach, and ripens from the middle to the end of August. The tree is a remarkably free grower, and an abundant bearer. It was raised by Mr. Rivers of Sawbridgeworth from *Belle Bance*; but it is a much better grower than that variety."

Chrysanthemum House (Cambridge).—The section you have sent represents a very good house. The only improvement we can suggest is, that four rows of plants on each side would be much more convenient for watering, as the middle row would be difficult to reach from either side, and the plants would be much less likely to lose their foliage from mildew through overcrowding, but if they are tall and clean-stemmed these objections would fall. It is not a good plan to sink the pots down below the ground level. The flowers of Chrysanthemums never finish better than when the

light and air can play well round the pots, and we should make plenty of provision for admitting air at the side for the wind to blow well around the pots on all fine days. The front rows might be plunged about half the depth of the pots. You would thus gain 6 inches in height, in a better way than raising the eaves of the house which might cause drip, and if the path were raised (unless by joists and laths) there would be the same objection—viz., obstruction of the air among the pots. If the height of the plants permit we would raise the two back rows on planks or inverted flower pots to give the proper slope to the bank of flowers. These suggestions are founded on the supposition that the chief aim is to produce well-finished cut blooms for exhibition, the display as a whole being a secondary consideration. A boiler and pipes would be the best method of heating.

Red and White Roscs (*A Lady Gardener*).—You give no idea of the number you require nor of the size of the beds you desire to form and plant. The following are good bright red or crimson Roses:—A. K. Williams, Alfred Colomb, Duke of Edinburgh, Marie Rady, Dr. Audry, Le Havre, Mrs. Charles Wood, Général Jacqueminot, Ferdinand de Lesseps, Prince Arthur, Duke of Teck, Exposition de Brie, Maurice Bernardin, John Stuart Mill, Sir Garnet Wolseley, Thomas Mills, Annie Wood, Madame Ducher, Crimson Bedder, John Bright, Horace Vernet, Lord Macaulay, Duke of Connaught, and Fisher Holmes. Possibly those may suffice. White Roses are much less numerous. Suitable for beds are Baronne de Maynard, Boule de Neige, Coquette des Blancs, François Petit, Louise Darzens, Mabel Morrison, Madame Lacharme, Madame Plantier, White Baroness, Merveille de Lyon, Souvenir de Malmaison, with Niphetos, Alba Rosea, Madame Bravy, and other Tea Roses. The miniature Roses Anna Maria de Montravel and Parquerette are suitable for beds. All the varieties named are not pure white, but some that are not are better than others that are for the purpose indicated. Gloire de Dijon grows well as a standard in most districts, forming a large head, and we have seen Maréchal Niel grown very well in the same way in favourable positions. Rose beds cannot be too plain in outline. We publish a plan of a Rose garden in another column, but it may be too large for your purpose. We have smaller plans, and if we had an idea of the extent of your ground might perhaps insert one if we thought it would be useful to do so.

The Rochford Boiler (W.).—This horizontal tubular boiler is sold by the Thames Bank Iron Company, and is advertised in another column. It is a favourite boiler with many extensive growers of fruit and flowers for sale, but some of them have perhaps erred by having the pipes too long owing to the contraction in cooling. The firm in question may be relied on to give

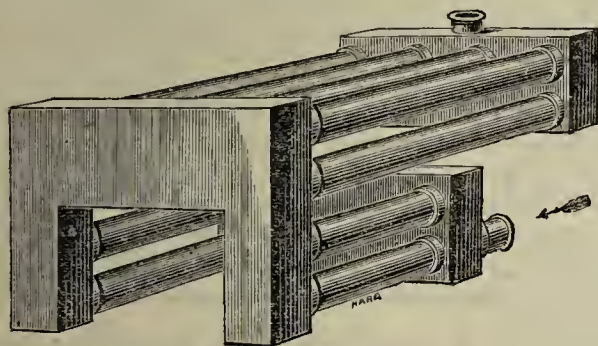


Fig. 27.

sound advice on the subject on which you desire information. As we have received several inquiries for particulars about the boiler from time to time, we insert a figure which clearly shows the nature of the apparatus.

Names of Fruit (F. J. R.).—Your Apple is Irish Peach.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should contain spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. W. L.*)—1, *Tecoma radicans*; 2, *Achillea Ptarmica* fl. pl.; 3, *Rhodanthe Manglesi*. (*W. J. C.*)—1, *Galega orientalis albus*; 2, *Astrantia minor*; 3, *Campanula carpatica alba*; 4, *Spiraea Ulmaria* fl. pl.; 5, *Tradescantia virginica*; 6, *Calceolaria cbelidonoides*. (*C. Thomas, Aberdare*).—1, *Hyophrorbe indica*; 2, *Dicksonia squarrosa*; 3, *Begonia debilis*; 4, *B. Dregei*; 5, *B. metallica*; 6, *Caladium*—we do not name garden forms. (*M. H. S.*)—The white-and-purple flower is *Chrysanthemum coronarium*; the yellow one is apparently a poor form of *Rudbeckia Newmanni*; the other is probably *Cynanchum acutum*, but the specimens were not sufficient to determine them with accuracy. (*U. R.*)—1, *Epipactis palustris*; 2, *Asplenium Adiantum-nigrum*; 3, *A. Tricomanes*; 4, *A. ruta-muraria*. It is a pleasure to name such specimens—the best we have had sent.

Supers on Stewarton Hive (E. A.).—If the under supers are finished, which should be easily ascertained by looking in at the windows provided at the front and back of these supers, all that are filled or partly filled should be removed, as Heather honey is a special article and should be always free from an admixture of other sorts. The under ones removed, and the upper containing comb only, might with great advantage take their place. There is a limit to tiering as well as other ways of management; consequently, it might have been more to your advantage had the fifth super been withheld and those first put on removed instead. This is a course, however, that can only be determined on the spot.

COVENT GARDEN MARKET.—AUGUST 12TH.

HEAVY supplies have been reaching us, but the bulk has been gathered and prices have improved, also large quantities of Grapes and Tomatoes from Channel Islands.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6	2 0	Lemons	15 0	21 0
Cherries	4 0	15 0	Oranges	100 8	0 12 0
Cobs, Kent	0 0	0 0	Peaches	1 6	8 0
Currants, Red ..	3 6	4 0	Pears, kitchen ..	dozen	0 0 0 0
" Black	4 0	5 0	" dessert	dozen	0 0 0 0
Figs	1 0	1 6	Pine Apples English ..	lb.	2 0 3 0
Gooseberries ..	1 6	2 0	Strawberries	lb.	0 3 0 9
Grapes	0 6	2 0	St. Michael Pines ..	each	3 0 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 3
Asparagus	bundle	2 0 5 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	1 0 0 0	Mustard and Cress	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	1/2 sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 5
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Sballots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	busbel	2 0 4 6
Heros	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 0
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0



THE CLERGYMAN'S FARM.

(Continued from page 126.)

POTATOES, Carrots, Mangolds may be mentioned as the three indispensable root crops to be grown on the glebe land, and to them we may add White Turnips and Swedes, as occasion may serve. Second early and late sorts of Potato should be grown in view of affording a supply for the household, and an abundant surplus for cooking for pigs and poultry. Early Rose, Snowflake, Magnum Bonum, and Scotch Champion are safe sorts to plant extensively. New sorts come crowding upon us by hundreds, but we seldom find any of them becoming such general favourites as those which we have mentioned. The chief points requiring close attention in Potato culture are the selection of sound seed tubers of fair size, which must not be suffered to become exhausted by premature sprouting before the planting, but should be laid out thinly in trays in a frost-proof building, and with sufficient exposure to light and air to insure a very gradual growth of sturdy green sprouts as thick as one's little finger. The trays should be portable, so that the tubers may be taken to the field with care, and the planting done without injury to the sprouts. An ample reward for our pains and care is found in the quick, certain, and robust growth which we invariably have from seed so prepared. No failures, no weakly growth have we, and the tubers are so safe from exhaustion upon the trays that we can wait for the planting till the soil is in a suitable condition. Ploughing and cleaning early in autumn, a heavy dressing of artificial manure in spring, ploughing if necessary, stirring with a cultivator or horse hoes, rolling, harrowing to get a fine tilth for the planting, hand and horse-hoeing as Potatoes and weeds make growth, and moulding with the double-breasted plough before the roots have spread far into the soil.

Both Carrot and Mangold seed should be sown by the middle of April. The great difference now visible in the appearance of the crops upon different farms is, in many instances, owing to the time of sowing more than to other details of culture. Sow Mangolds in rich well-worked soil the second week of April, and you may have a few roots bolting to seed, but the bulk of the crop will be heavy and excellent. Of sorts take either Long Red or the best Yellow Globe Mangold. For our own crop we prefer Long Red, having regard to its beneficial effect upon the dairy cows in winter and to the weight obtained per acre, which exceeds that of any other sorts we have tried. It is wise always to

devote more land to the culture of Mangolds than to Swedes—Mangolds being a sure crop, but Swedes are very uncertain, and by a system of pulping and mixing with chaff Mangolds may be rendered excellent food throughout winter. Carrots are highly valuable in winter for horses, cows, lean stock, and sheep, and we regret not finding their culture more common than it is. For light thin soil Red Intermediate answers best, and for deep rich soil Long Red is preferable. The soil should be fertile for this crop, the seed sown in drills early in April, singling done as soon as the plants are large enough, and the hand hoes should follow quickly, for if weeds crowd the young plants they are apt to become drawn and weak. Nothing can be more simple than the culture of this root, and it certainly well repays us for it.

May for the north, June for the south, are the months for sowing Swedes. White Turnips may also be sown then and in the two following months for a late supply, a late crop of Turnips being very useful in spring for store sheep, and it is often obtained by sowing after Winter Oats. In hot dry weather the Turnip fly does much harm; but with a fine seed bed, soil highly manured, and new seed, we may usually avoid much harm from it, and by way of precaution we generally sow about 2 lbs. per acre of White Mustard with it, the quick germination and growth of the Mustard bringing it on for the fly before the Turnip plant can suffer.

Assuming that the clergyman's farm will always have a fair proportion of live stock upon it, including horses, cows, store cattle, sheep, and pigs, the value of an ample store of roots in winter and spring is self-evident. A change of diet is good at all times, but it is especially so in winter when, with the exception of sheep, all animals are confined in yards and sheds. In November Carrots come into regular use for the dairy cows and horses, and there should be enough Carrots for the horses till spring. For the cows sliced, not pulped, Carrots are best, mixed with bran; this, with plenty of the best meadow hay, forms an excellent winter dietary for strong healthy cows. For a change that is both wholesome and nutritious, Drumhead Cabbage and later on sliced Mangolds and Thousand-headed Kale are used; but Turnips are not given to dairy cows at any time. For store cattle an occasional meal of Turnips is a wholesome change, especially in November and December, after which time preference is given to Mangolds. Let us take especial care that our store of both Carrots and Mangolds is a large one. It is by the end of February that we have the full value of such provision impressed upon us. Store cattle kept till then upon hay and straw only become mangy. A regular supply of roots corrects this, and what a help to the hayricks as well as to the animals are plenty of Mangolds then! For the breeding flock they are invaluable, only do not let them be given wastefully. A daily supply of fresh roots should be taken to the fold or pasture, and the quantity strictly regulated by the consumption. Sows and store pigs eat them greedily, and so fond are horses of them that in the eastern counties they are used instead of Carrots. Poultry, too, are very fond of them. It is really surprising to see how soon two or three old hens will consume a huge root of the Mammoth Long Red, and we take care to let them have as many as they can eat. For poultry confined in wired enclosures a root or two given frequently would prove highly beneficial. The roots are not sliced for poultry, but thrown to them uncut, and they soon peck them up.

(To be continued.)

WORK ON THE HOME FARM.

Corn harvest, though somewhat retarded, is now upon us, and on the whole it is an abundant one. As is invariably the case, good farming proves to be the best farming—best in the important sense of full crops upon land highly cultivated. It will, however, be well to consider what, under the present adverse circumstances, we ought to regard as the profitable limit of high cultivation. Results are before us. How have they been obtained? It is only by careful thought, by an intelligent grasp of facts, and by careful comparisons made constantly week by week, and especially now, that we can hope to master fully every lesson affecting our calling

that is worth learning. How to get our harvest work done economically has been a weighty matter. Hornsby's reaping and binding machines are on hire at 4s. an acre. This fact, doubtless, had weight with Norfolk farmers when they decided to "hire the harvest" to the labourers at £7 instead of £8. This amount is supposed, and in point of fact does, closely represent a payment of about 11s. an acre for reaping, binding, and stacking the crops. But an average sum cannot be a fair one, for the farmer with a light corn crop must demur at being compelled to pay as much per acre as another with a heavy one. The question we have now to decide is the comparative cost of a reaper and binder at 4s. an acre, with the addition of 2s. for string, and the cost of stacking, with the old system, and if only a saving of 2s. an acre is effected by the use of improved machinery it must be done. It is idle to talk of harsh treatment of the labourers. A revolution in farming is upon us, and we must either resolve to turn its stern lessons to account or be overwhelmed by it.

The roofs and sides of some dilapidated old barns have been repaired in readiness for the harvest, and all the woodwork has had a dressing of tar. Negligence of outbuildings is a common fault, yet there never was a more expensive one, prompt attention to patching and tarring old buildings saving many a pound. If Peas can be brought to the rickyard sufficiently forward for threshing, it will be done at once. Our statement as to the comparative value of winter and spring Beans proves somewhat unsound, for since writing it we have seen several fields of spring Beans badly attacked by aphides, one field so seriously that the crop is worthless. Winter Beans, on the contrary, are in many fields so good a crop that they will prove very profitable, and the outcry about the failure of winter Beans was certainly a little premature. All our new hayricks have been insured. Land under spring Tares, wherever it has been folded with sheep, has been ploughed as the Tares were used. It will be turned to account at once for White Turnips, or it will be sowed in September for Rye for an early supply of green food next year. White Mustard is being ploughed in as fast as it becomes fully grown, or, rather, when it is in full bloom.

OUR LETTER BOX.

Ear-Cockle in Wheat (Sussex).—Purples or ear-cockle is generally brought into a Wheat field by the galls containing the dense cottony mass of worms being mixed with the seed corn. The gall is really the diseased grain so altered that instead of the germ and store of starch it contains a mass of minute worms. Ripened with the corn at harvest time, so long as the galls remain dry the worms remain torpid, and it has been proved that they retain vitality for a long time, and Professor Carruthers has shown how when the gall becomes moistened with water the worms become active, they penetrate the wall of the gall and escape. Even after they have left the gall they may be dried up and become torpid, and remain in this condition for a considerable time without being killed, for when moisture is applied to them they revive again. You say that of two fields of Wheat sown with one lot of seed one has no cockle and the other is badly affected. We can only suggest that by some accident the galls had been mixed with part of the seed, or else thrown among manure used in the field containing the affected Wheat.

Prickly Comfrey (W. S.).—In November the plants may be divided into as many pieces as there are crowns, reserving a portion of root to each division, planting in rows 30 to 36 inches asunder, and 24 to 30 inches apart, burying up to the crown in loose soil. The ground should have been deeply trenched, and the more manure is worked-in the better the plants will flourish. A good dressing of manure should be given about the crowns after planting, and this should be pointed-in early in spring. The deeper and richer the soil the more space should be given the plants. Comfrey does best in deep damp soil, but the moisture must not be stagnant. Propagation is also effected by cutting the roots into lengths of about a couple of inches, and dibbling them in at the above-named distance, apart, November and February being suitable seasons. Guano, nitrate of soda, and salt are good surface dressings, applying in March.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain
		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885. August.		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	2	30.097	59.0	53.2	N.E.	65.0	72.8	54.5	118.0	53.3	—
Monday	3	30.074	59.2	54.1	N.E.	64.3	66.4	54.0	89.8	53.3	—
Tuesday	4	29.953	61.2	54.5	N.E.	63.0	72.9	49.6	117.6	43.2	0.010
Wednesday	5	29.957	60.5	57.7	N.E.	63.1	66.5	54.4	92.3	48.5	0.010
Thursday	6	29.955	59.7	56.6	E.	62.4	75.4	51.8	114.8	43.9	0.016
Friday	7	29.786	60.9	54.8	S.	62.2	69.2	50.7	115.2	44.1	0.077
Saturday	8	29.875	63.1	57.3	W.	61.4	72.0	52.6	120.2	48.4	—
		29.957	60.5	55.5		63.1	70.7	52.5	109.7	47.8	0.113

REMARKS.

2nd.—Cloudy, but fine.
3rd.—Fair, cool, and cloudy.
4th.—Bright early, then cloudy, with a few drops of rain at 5 P.M.
5th.—Morning damp and misty; afternoon and evening fine.
6th.—Fine morning, then dull, slight rain at 3.30 P.M., thunder at 4 P.M., and occasionally later.
7th.—Fine early; slight thunderstorm with hail at 11 A.M.; afternoon and evening fine.
8th.—Cloudy morning, but very fine afterwards.
Temperature considerably below that of previous weeks, and very near the average. Thunder storms have prevailed in the neighbourhood, but the rainfall here has at present been quite insignificant.—G. J. SIMONS.



COMING EVENTS

20	TH	Salisbury Show	
21	F	Exeter.	
22	S		
23	SUN	TWELFTH SUNDAY AFTER TRINITY.	
24	M		[Cottagers' Show.
25	TU	Royal Horticultural Society. Fruit and Floral Committees at 11 A.M.	
26	W		

ROMAN HYACINTHS.

FOR early flowering there are no Hyacinths to equal these. They are the only ones which can really be depended on to flower freely throughout the very dull months of November and December, and their culture is so easy that all who possess a greenhouse, no matter how small, should grow them. Their price this year is less than usual, and the bulbs are equally good.

This should be an additional inducement for amateurs and every garden owner to grow them extensively, and the absolute certainty of their giving satisfaction may be relied on. The strongest bulbs generally produce from two to four spikes, and the poorest never fail to flower. The blossoms are as white as snow, and they are deliciously fragrant. We would as soon think of being without Camellias or Chrysanthemums in autumn as Roman Hyacinths. They are invaluable for conservatory decoration, and they are charming in a cut state. Altogether they are the most useful Hyacinths anyone can possess.

To insure their flowering early in November they ought to be potted now, and to have them in constant succession during the winter a few dozens, or a few hundreds, should be potted every three or four weeks. We generally put them in in lots of from fifty to 100 from the middle of August until January, and have them in bloom from November until March. The best soil to employ is a mixture of good loam two parts, sand one part, and half-decayed manure one part. The pots should be efficiently drained. From 3-inch to 6-inch pots are good sizes to use. Three bulbs may be put into a 3-inch pot, and from five to six bulbs into a 6-inch pot. When potted the crowns should just be seen above the surface of the soil. The soil should be made firm and smooth, and it must be moderately moist before potting, as we find the bulbs succeed best when not watered immediately after potting.

As soon as potting has been finished the whole of them should be plunged under 6 inches of ashes or cocoa-nut fibre, and it does not matter much whether this is done in a shed, frame, cellar, or in the open against the wall in a sheltered place. As we have plenty of empty frames in the autumn, we generally place them in one of these as closely as they will stand to each other, and cover them when the batch has been completed. In rainy weather the lights are placed over them. About four weeks after plunging the covering should be removed carefully, and it will then be seen that the bulbs have formed strong growths from 1 inch to 2 inches high. The pots, too, will be well filled with roots, and they are then ready for taking into a frame or house to grow on for flowering, which they will quickly do in a temperature of 65°.

It is by repeating this practice that a succession of them can easily be maintained, and those unacquainted with their culture will be astonished at their own success the first season they take them in hand. At times we have put large batches under cover and brought them all out together, and

a number were put in a cold frame to keep them behind those which were put into heat. Where the supply of cut flowers is the only object in growing them, pots may be dispensed with, and large numbers may be put into shallow boxes, but they must all be buried until they form roots, and have plenty of light and a little heat to bring them into flower.—M.

MUSHROOMS.

SUCCESS in the cultivation of these much-esteemed edibles depends in the first place upon the spawn, it being absolutely indispensable to have it of the very best description in an active state, and such being the case it is well to test its quality when it comes to hand by making up a small bed or a box so that it may with safety be used for spawning a large bed, from which the supplies are to be drawn for a considerable time. If this were done much disappointment would be avoided, as there is nothing so aggravating as to make up a bed and after waiting weeks or months find that it is merely a waste of material, time, and labour. When the spawn is received it should be stored where it will keep well. To insure this you must select a moderately dry place, with a temperature of about 50°, packing it close together until it is wanted for use, when it will have to be broken into pieces about 2 inches in diameter, and only those pieces which contain spawn in a proper state should be used in the beds. If the spawn were given this scrutiny and treatment failures would be avoided to a very great extent; indeed I am persuaded that more failures in Mushroom growing are attributable to using spawn in an inert or spent condition than to any other cause. The spawn may have been too highly developed in the bricks and is simply spent; instead of being a mass of small threads, the threads are as large as fine cotton, and the white mouldiness almost absent. It is of no use at all in that state, as it contains no active germs to develop as mycelium. Spawn also spoiled after being received through being kept too moist and too warm so as to cause the development of the mycelium, consequently it is spent in the bricks before it is inserted in the beds; therefore it should be kept dry and cool, yet safe from frost, though frost is not injurious when the spawn is dry. It is also a bad plan to have spawn for a long time in stock. I find it is best fresh, therefore a supply ought only to be purchased sufficient for the season, and it ought to be of the current year's make—securing it early in August.

Mushrooms are a natural crop in August and September, varied by being earlier and later in pastures or places where cattle have been kept; and as the supply at the usual Mushroom season is generally adequate for ordinary requirements we may pass over that period, and face the fact that for the remainder of the year the supply is produced by cultivation. The cultivation of Mushrooms has of late years been considerably simplified, which is in a great measure due to the impetus given by the timely appearance of "Mushrooms for the Million." The alteration more particularly applies to the means and preparation of the materials. Formerly much time and trouble were expended on the material in order to get it into a proper condition—to prolong the heat in a subdued form, which as a matter of course from the frequent turnings and consequent fermentations caused its exhaustion by the time it was considered fit to make up into the beds. This practice has been dispensed with in a great measure by many growers; they use the manure in a fresher state than formerly, indeed I like it direct from the dung-yard or midden, which has been allowed to accumulate from the stables for a fortnight or three weeks. This is cleared of all the long straw; a fork will remove all that is necessary, and it leaves the droppings with quite as much short straw, and being somewhat light or springy a little fresh turfy loam broken up roughly added gives it solidity, and insures it being formed into a firm mass, besides preventing overheating and drying. Thrown in a heap for two or three days it will heat, and should be

put in the beds 18 inches deep. When the heat is sufficient, or in about three days, it should be trodden or beaten down firmly, adding more if necessary to make it of the requisite depth or 18 inches, and a thermometer with the bulb 3 inches beneath the surface will indicate the temperature. If it rise above 90°, as it will in a week, wait until it recedes to 90°, and then insert the spawn 9 inches apart, first beneath the surface, beating down so as to firm the spawn well in the material. In the course of a week or ten days the bed should be earthed, but if the heat declines rapidly it may be earthed soon after, or at the time of inserting the spawn. I put on the soil 3 inches thick in the loose state, which when well beaten down is not more than 1½ to 2 inches in thickness, good turfy loam being used in a moderately moist state so as to form a compact mass. If dry it must be moistened so as to insure its being firm, making the surface smooth with the back of a spade. To prevent it becoming dry and cracking a layer of hay may be placed on the surface about 6 inches thick, and allowed to remain until the Mushrooms appear, as they will in from six to eight weeks from the time of spawning, though I have had them in a month from spawning, but such is not usual, when the hay must be removed altogether. The soil should be kept uniformly moist, avoiding overwatering or its opposite extreme. It is hardly necessary to state that the house should be thoroughly cleansed, every means being taken to destroy woodlice, slugs, &c., which will save much after-trouble.

In order to have a supply of Mushrooms by the time the outdoor supplies are over a bed should be made ready for spawning early in September, and successional beds will need to be made at intervals of a month or six weeks according to the means and requirements of the establishment. A temperature of 50° is suitable for Mushrooms, and the nearer it is kept between that and 55° the more fleshy will be the Mushrooms and the more readily will they be produced.—G. ABBEY.

THE TEACHINGS OF THE DROUGHT.

THE notes by your correspondent, "B.," on the "Teachings of the Drought" during this exceptional period of dryness will be read by observant practitioners with more than ordinary interest, as there are two or three points mentioned therein which should engage our careful and serious attention. It is not in seasons of drought alone that useful lessons are to be learned on the gradually increasing problems of gardening, but also in cold and wet ones. Of the latter we have, however, had abundant experience, and such has already had its due share of discussion; but such a long period of drought as we have experienced this year has not occurred within the last decade or two, and thus we have not had opportunities of making the necessary comparisons between the value of methods of cultivation and quality of crops in dry and wet seasons.

It is more necessary now than it has ever been that gardeners should be able to cope with the difficulties and disadvantages of a dry season, as every year our climate becomes more susceptible to variability, and therefore the difficulty will assume a greater magnitude as years roll on. The quality of vegetable crops, methods of tillage, and value of manures in such a dry season as this are subjects which your correspondent has wisely directed attention to as being worthy of more than a passing consideration. Our experience exactly coincides with that of your correspondent respecting the value of deeply trenched ground in this as in other seasons, and we are sure it will be generally admitted by the most advanced of the anti-trenching advocates that deep cultivation has been of the utmost service in sustaining the growth of vegetables, as well as fruit and flowers, in a marked degree.

It is not in one district alone that we have noted the good effects of a deep tilth, but in various parts of the country also. With ourselves deep trenching is of the utmost value, as owing to a somewhat hungry and gravelly subsoil our vegetable crops would prove a failure in such a droughty season as the present. The vegetable garden under our charge had never, previous to our undertaking its management, been trenched to any great extent, consequently it was only in one or two positions that root crops especially would grow satisfactorily. Observing the nature of the soil, which was exceedingly rich in humus, we

determined to improve and render the whole of it by degrees suitable for the general growth of vegetables. To trench it three spades deep, unless set about systematically, would do more mischief than gain good by turning up the sour subsoil which for years had received the drainage of a liberally manured soil. What was to be done, then, under the circumstances? as it certainly would not do to remove one evil to create a greater. The course we decided upon was this: to trench two spits deep, and with a fork break up the bottom of the trench to the depth of another foot. Over this broken surface the top spit was thrown, then a good layer of manure, and on the top of this the second spit was laid; thus a portion of the subsoil was actually brought up to the surface. The soil was rich in humus and insect life too. The application of lime had not been thought of during the many years of my predecessor's management, consequently it was necessary to give the trenched ground a liberal dressing to sweeten the new soil and in its descent decompose the humus in the new subsoil, which at the next trenching would again come to the surface rich in salts previously locked up in the humus, but now liberated by the action of the lime. We did not apply the lime before trenching, as had we done so we should not have benefited so greatly by its application, as owing to its tendency to sink rapidly its virtues would have descended too far to be of use to us. We preferred to spread it over the ground after it had been trenched and then lightly forked it in some time previous to sowing or planting.

To counteract the evil of planting or sowing the first year in the late subsoil before it had had sufficient exposure to the air, &c., to render it sweet and fertile, we had the drills for seeds drawn wide and deep, and in these previous to sowing we had a portion of wood ashes and old potting soil spread along the bottoms. Then the seeds were sown and finally covered with the same compost. Of course we could only do a portion of the garden each year, but what was done was done well, and we had and have the satisfaction of having excellent crops of vegetables where those of very inferior merit only had been grown in previous years. It was surprising how well roots did on the trenched land. The wood ashes and soil spread in the drills sustained the growth of the seedlings until their tap roots began to descend to the under stratum of manure and rich soil in the bottom. This season, through unforeseen circumstances, we could not get enough ground trenched for the whole of our Carrot crop, consequently a portion had to be sown on trenched and the remainder on dug ground. The two portions will tell their own tale. The trenched portion in spite of the drought is supporting a free and healthy growth with fine roots, whilst the untrenched are stunted roots with withered foliage. Onions, too, on a piece of trenched ground have very fine bulbs, and on digging down a spit deep to-day we found the roots descending below that depth.

The above is conclusive evidence that deep trenching is specially valuable in droughty seasons like the present one. It is also of unquestionable value in Strawberry culture. Quite recently we saw a plantation of Dr. Hogg, one year old, each plant averaging 24 inches in diameter, and these growing in ground which had been trenched 3 feet deep previous to planting. We have great faith in the efficacy of lime applied annually in moderate quantity over the soil of old gardens, providing farmyard manure is used in due proportion too. We have found lime of special value both in its carbonate and phosphate forms for growing the various members of the Brassica family, as it is a sure preventive of that troublesome disease the club. For years past it was deemed next to useless to grow Brussels Sprouts, Savoys, or Broccoli, as they were sure to be attacked with club. Two years ago we took in some pasture land to make an addition to our vegetable quarters. A portion was dressed with lime and a portion undressed. Now the Sprouts in the first-named are quite free from club, whilst those in the undressed are badly attacked by it.

Farmyard manure is the best all-round manure we can employ for the vegetable gardens, and, as your able correspondent says, it certainly supersedes the various types of artificials in dry seasons. Peas have been grand where abundance of it was trenched in, as the roots soon descended in search of it, and thus enabled the main and later crops to defy the drought. Farmyard manure is not, however, always as good as it might be. It is very often too deficient in the essential fertilising properties, but this need not be so in the majority of cases. A little outlay in having suitable tanks built for the reception of urine and the washings of stables would be of immense value, as then the valuable liquid could be emptied over the bulk of manure, which with frequent turnings would render it a grand fertilising material. Mulching has been of great service to us on our light gravelly soil as far as we could carry it out, but unfortunately it is not every gardener who can command manure for the two

purposes. Where there is a deficiency of the latter, recourse can be had with great advantage to the mowings of the lawn, which will answer admirably for mulching Onions and other crops likely to suffer much from drought. We have used a great quantity of the new peat litter which has been used under the horses, and found it an excellent mulch. After it has been trodden under the horses for some time it will be found to contain powerful fertilising properties, and thus in this condition its value will be considerably enhanced for the purpose of mulching.

Pears, Apples, and Plums have suffered to a slight extent with us in consequence of the dry weather, many of the crops of fruit being below the average in size. The Raspberry crop, too, in shallow soils was of short duration. The young growths of fruit trees generally are ripening splendidly, and there is not that tendency to grossness so characteristic of damp seasons. In the flower garden the drought has perhaps been felt the most. The majority of the annuals died very early and thus left many bare spaces. Groups of Petunias, Godetias, Zinnias, and Marigolds seem to enjoy it. Copious waterings late in the evening and early in the morning have been the order of the day.—A KENTISH GARDENER.

TOMATOES.

"THE game of Tomatoes is played out." So wrote one of the best practical gardeners in the kingdom to me a short time ago, and though I attach weight to what he says as a rule, I am bound to confess that, in my opinion, he is not at present in a position to arrive at a sound judgment on the matter on which he delivered his verdict. The most eminent of judges are occasionally wrong, as is proved by subsequent decisions in courts of appeal, and nobody thinks any worse of them. They decide according to the evidence before them, and if that is inadequate the fault is not theirs. I have had some evidence during the past two months that the "game of Tomatoes" is not quite "played out"—at least for the cultivators, as I have to pay 8d. a pound for fruit, and cannot get fresh well-ripened dishes for less. I have passed through the London fruit markets time after time, and found the retail price varying from 6d. to 1s. a pound, but the cheap samples were faulty, and really dearer than the others. The price, then, for good fruit in London and the suburbs has lately been that above-named—8d. a pound, and I suspect it has not been cheaper in the chief provincial cities and towns.

This price has not been received by the growers of the fruit. That is self-evident, because retailers must "live," and so must agents or salesmen; and they do live, and apparently live well. I will grant, what I suspect is true, that they have the "best of the bargain," I am still driven to the conclusion that the cultivation of this fruit is profitable when good crops are ripened in June, July, and early August. Towards the end of the latter month and in September the prices fall, but the cost of production is reduced, and even then I have still to be convinced that good crops are not remunerative.

I do not pretend to know very much about the cultivation of Tomatoes. I have grown a few in a small way, but not for sale. still the yield was so good as to satisfy that the space devoted to the plants would not have been unprofitably occupied had the fruit been converted into money. At even 4d. a pound it would have paid for the land; or, in other words, a one-year's crop of Tomatoes was of decidedly more value than the land it occupied if the freehold had been sold.

Instead of the "game of Tomatoes being played out," I am of opinion that we are only on the threshold of a great commercial industry. So far as I can see, this fruit, that has been hitherto very much of a luxury, will shortly become a necessity of life. Not long ago, on visiting a London "chop house," and by no means one of the largest, it was observable that when a chop was ordered it was taken for granted a Tomato was intended as well. This was not the case a very few years ago. In reply to a question as to the increased consumption of Tomatoes, the caterer observed, "Increased, sir! yes, there is no doubt about that; here it has risen from half a bushel a week to half a ton, and we want more and more." The fruit is also being more largely consumed in a raw state than ever, and this habit is almost certain to grow, just as it has grown in America. Sliced and prepared very much like Cucumber, the fruit is much relished by vast numbers of persons, and the taste for it is certainly growing.

It is quite true that all growers of Tomatoes do not find the crops satisfactorily profitable. Like everything else nowadays, the crops must be heavy and the fruit of the first quality for cultivation to be remunerative. The days of large profits for

garden produce are gone for ever—that is to say, small quantities will not pay, but a moderate profit on greater bulks will enable skilled and enterprising cultivators to reap a fair reward for their labour. English-grown Tomatoes have not been sufficient for the demand of the nation during the past few years, and large consignments have consequently been welcomed from abroad. I have seen purchasers clamouring for them at the auction sales in the fruit markets, the fruit certainly not equal to that grown at home. Bearing this fact in mind I was not at all surprised to read of Mr. Phillip Ladds growing 100 tons of Tomatoes. He is evidently one of those individuals who do not believe in being "beaten by the foreigner." As a consumer, I wish him the success he is sure to win. I should like to see him and other great cultivators have depôts for the sale of their own fruit and vegetables in all populous centres. "Slow coach" cultivators will not agree with this; they call it "spoiling the market," I do not. High prices always did, and always will, check production and restrict trade; lower prices develop it, and make markets prosperous.

"There is not much money to be made out of Tomato-growing with the fruit at 9d. a pound," observed an individual who grew a small quantity and sold them at that price. I say there is a good living profit to be had if half that sum per pound is obtained. I am intimately connected with a hard-working and excellent grower of this fruit, who plants Tomatoes a yard apart, secures the plants to stakes, and from the top of these to string attached to the roof of a large lean-to glass structure. The yield is considered poor if not more than 10 lbs. are gathered from a plant; but more than twice that weight is gathered from many of them, and the culture is decidedly profitable. It would be if only 3d. per lb. were obtained for the produce. Twice the weight of Tomatoes can be grown in that way over the orthodox plan of merely covering the roof as in growing Cucumbers; but in the case alluded to the roof is in a great measure covered too, after the earlier fruit is gathered from the lower part of the plants. It is by this system of high and economical cropping, doubling the produce from a given space, of that once regarded as satisfactory, that compensates for the reduction in price and leaves a balance on the bulk equal to those secured in the "good old times" of great profits and slow returns. The last-named old policy must be reversed, and it will be. There is no other course that can be relied on than to grow maximum crops of whatever is in demand, converting them into money quickly; and cultivators who do not act on this principle will simply be left behind in the keen competition of the world.

The grower of Tomatoes referred to does not grow them for himself. He is no doubt well remunerated for his labour; at least, he is satisfied, and the owner is satisfied too, as an individual well may be in his excellent position. All kinds of fruit and vegetables are grown in the establishment, and grown well, but nothing pays better than the Tomatoes do, if as well.

With another example I am familiar. A gardener in a single-handed place having learned how to grow Tomatoes well contrived to erect a rough house for himself. The proceeds of the crop enabled him to erect another house much larger and better; a portion of the produce of the second house sufficed for a third, a third for a fourth, and so on until he was justified in resigning his appointment, and he is now in a much better position as a Tomato grower for himself than he could ever hope to attain as a private gardener.

I have recently been going round the garden of a London merchant. Like many others of his class he looks at things with a keen business eye, and although the produce of his garden is not sold he appraises it as if intuitively, and is not slow to grumble if a crop is not of more value than it has cost to grow. He values his Grapes, Cucumbers, and Tomatoes, all of which are admirably grown. Such is the force of habit, and his verdict is that "Tomatoes pay better than anything." He has not made many mistakes in his time, or he would not have raised himself from the position of a workman to that of an employer of upwards of a thousand men, and it is not probable that he errs in the relative estimate he forms of his crops. I should like to see more Tomatoes grown, and if grown well they will pay the producers; but I must confess I am writing from a selfish point of view, for I am—A CONSUMER.

DOUBLE IVY-LEAVED PELARGONIUMS.

THE many and varied forms of these extremely useful plants at the present time constitute a valuable group of highly decorative plants, the more remarkable since it appears but the other day when the variety known as *König Albert* stood alone among the doubles. Not so now, however, for during the past few years the numbers of new varieties of this important class are

annually on the increase, so much so that I am at the present time acquainted with something like fifty good double varieties.

To attempt to speak at length or give in detail the uses and variety of circumstances to which these plants adapt themselves would appear somewhat superfluous, since the name which has done so much to popularise them seems sufficient in itself. For hanging baskets, for brackets, for window boxes, for vases in the terrace garden, and in fact any position where hanging plants can be used with good effect, none can be better suited than these. Their thick, fleshy, and somewhat succulent leaves render them capable of withstanding drought to a far greater extent than most plants, for it not unfrequently happens that basket plants often suffer through insufficient waterings, simply because they are not quite so conveniently placed. They thrive well in town houses and smoky districts much better than most plants, while as pillar plants for the conservatory they will vie with any plants I know for general effect; illustrative of which, I may remark that Messrs. Pearson of Chilwell grow them in this way in one of their long span-roofed houses, where they may be seen to advantage growing naturally and flowering in the most profuse manner. The best varieties only are grown in this way, and viewing them from either end of a house 100 feet long they produce a most telling effect. There are still other uses for these plants, for they may be trained on trellises either for exhibition purposes or for home decoration, and as such would prove both novel and charming, and as many varieties grow quickly and produce ample foliage they would hardly fail to produce the desired effect.

Nor must we omit to give them their due as ordinary bedders, and as such they deserve of a more extended or general use. They flower for the most part with remarkable freedom, and are not quite so formal as the Zonal type in this respect. This season we have bedded out many hundreds in several of the best varieties, and considering that our soil is extremely light and stony, and that the weather has been exceedingly hot for weeks, they have proved a great success and form an agreeable change.

Though during the past five or six years the hybridist has been busy among these plants and has been rewarded by many fine forms and great diversity of colour, we still stand in need of a good and pure white, which will take time in fixing no doubt, as the whites at present in cultivation are heavily suffused or veined with pink. I will now briefly describe the leading and most distinct forms at present in cultivation. Albert Crousse, light salmon shaded magenta, very large and double, and one of the most distinct and effective, good vigorous habit, and suited either for pillars or trellises; Anna Pfitzer, this is one of the freest flowering and considerably earlier in coming into flower than any other kind, it is adapted for any purpose, the colour is bright rosy pink, flowers semi-double, and quite a favourite; Candeur is one of the best whites at present, it is a good white and very double; Comte Horace de Choiseul, a strong vigorous grower, having enormous trusses of rich rosy pink flowers, very free and effective, an excellent pillar plant; Comtesse Horace de Choiseul is of a satiny rose colour, having small compact trusses, which are freely produced; Faustin Hellic, though distinct in colour is not so attractive; Gloire d'Orleans has compact trusses of rich crimson magenta flowers, this makes an excellent bedder and is equally good for basket and such work, the trusses are borne remarkably free, and it continues a long time in flower, this is certainly one of the best; Isidore Feral, a most pleasing and delicate satiny lilac, very distinct.

Madame Thibaut, no one who has seen this will for a moment doubt its superiority over all existing doubles; it is extremely handsome and cannot fail to receive due appreciation. Those who had not previously made its acquaintance had a splendid opportunity of doing so at the recent meeting of the Royal Horticultural Society, July 28th, when Mr. Cannell of Swanley contributed a well flowered group of plants; the habit is sturdy and vigorous, and the flowers, which are of a rosy pink, are good in form and produced in bold trusses. Jeanne d'Arc, too, among the newer varieties stands out rather prominently as a good white. The form of the flowers are better than in most varieties—indeed, in the trusses alone there is a marked likeness to a double-flowered Zonal; the same may be said of some few others. Mont Blanc is a white shaded or flushed with pink, of dwarf habit, and free flowering; M. Barrall is a silvery pink, very pleasing, trusses and flowers large, and freely produced; M. Dubus has flowers of a deep reddish pink, very distinct and pleasing; M. Pasteur has rich magenta flowers, well formed and good trusses.

Madame Crousse is a free grower, in colour a charming rosy pink, good for pillars, trellis, or baskets; this and the variety known as Anna Pfitzer are so very near in colour that the two are not desirable in one collection, still both are excellent.

Madame E. Galle has lilac blush flowers, very double; Mdle. J. Wouters is of a beautiful rose, interspersed with carmine, very distinct; Robert Fortune is a bright carmine pink, flowers very double and beautifully formed. In Vice-President Joly we find flowers of a soft pink, slightly suffused blush, very pretty; Gloire de Nancy, moderate sized flowers of rosy lake, quite distinct; Congo is one of the most effective of newer varieties, of good size and substance, and of a light lilac, with rosy centre, the margins being lightened with silvery white, and Abel Carrière has soft magenta coloured flowers, shaded maroon, very fine; Madame Jules Menoreau, rich rosy salmon, well formed; Souvenir d'un Ami, clear rosy lilac, flowers well rounded; Aglai Anderson, rich magenta, silvery reverse; M. Chevereul, rich carmine, bold and telling; Floribunda, deep salmon rose, of good form. Having only a short experience with several of the latter and newer forms I cannot speak confidently respecting them; I may, however, remark that those cited are the best among many new varieties, and are possessed of the good qualities so desirable among these plants—i.e., good constitutions, and so far they appear free bloomers.—J.

MR. TAYLOR'S ALTERED PRACTICE.

MANY of your readers besides myself must be curious to know the reason of Mr. Taylor's altered practice in regard to pruning Vines, as described by "W. I." last week, and who states that the Vines in Mr. Taylor's new charge were propagated and planted last year, that "all made most satisfactory progress," but "all the black Grapes were cut down to within 14 inches of the ground" at pruning time! It will be well within the remembrance of readers of Mr. Taylor's book on the Vine that he has there declared that "he had become a confirmed extensionist," that he explained that extension meant leaving long canes the first year; and in his chapter on "the first pruning" he states that "cutting down the stem of a Vine does not add to the vigour of growth;" adding, "the growth at the end of a young healthy Vine left 12 feet long will not compare unfavourably, even at starting time, with that of a similar Vine which is cut down to the ground." At the beginning of the same chapter he also explains that "having taken the greatest care to grow the Vines through the first twelve months, he dared say it would surprise professionals that he did not choose to follow the fashionable plan of cutting them down, adding, that if he did cut them down, and was asked which part he would throw away, "in his case the top would be the most valuable." These being Mr. Taylor's sentiments so lately as a year or two back, and seeing his Vines last year made "most satisfactory" growth, I ask his reason for reverting to restriction in its most barbarous form, and which he has himself so energetically condemned. Teachers like Mr. Taylor ought to be held to the principles they profess, or be made to explain their vagaries. Nothing could be more damaging to the extension system of pruning Vines than the admission by one of its most earnest advocates that he has himself been one of the first to abandon it and go back to the practice of those he so severely condemned.—J. S. W.

PEA G. F. WILSON.

I WRITE to say what an excellent Pea for dry weather is the G. F. Wilson. I proved it to be so last year and again this season. I am in the habit of sowing four sorts at one time—viz., Caractacus, William I., Veitch's Perfection, and G. F. Wilson; they come in capital succession to each other. This year they were sown on March 12th, and from that time till they came in for use there was only one rain to benefit them, and that was on Whit Monday. Nevertheless, G. F. Wilson Pea maintained its sturdy stout growth, and deep green colour throughout; the pods were filled, with from eight to ten peas in most of them, and when sent to table it was pronounced first-rate in flavour, and a first-class Pea.—THOMAS RECORD, Royston.

BRITISH QUEEN STRAWBERRY.

HAVING to provide a family with Strawberries I grow a good patch of Sir Joseph Paxton and President, but towards the end of the fruit-gathering a dish of British Queen, grown in the village, was presented to me, and I decided to plant a few as a trial. When I had lifted the crop of Potatoes, manured and dug the land at the end of September, the runners were planted in the following fashion:—The runners being very small were planted three in a clump, the clumps being 30 inches apart. They grew well, and produced a very fair crop the following year. I kept them free from runners after I had laid what I wanted, and no digging was done in the autumn, but we gave them a good dressing of manure, in the spring hoed between the rows, again giving them some stable manure, which being rather long acted as straw, and kept them clean. The crop this time was very heavy, the fruit also large, and the flavour good.

Last October having some large runners I lifted them with balls of roots, planting firmly, and they produced a very good crop of fruits this year. These British Queen Strawberries have surprised not a few, myself included, as I was always led to believe it was a very tender variety. I believe the success is due to the ground being in good condition, firm planting, no digging, which destroys the best roots, and lastly plenty of stable manure. My fruiting plants, two years old, I kept entirely without

runners until we had finished gathering the fruit on August 1st.—STEPHEN CASTLE, *West Lynn*.

NATIONAL PEAR CONFERENCE.

I, WITH many others, have received the circular of the Committee of the forthcoming Pear Conference, and those who have not had a circular direct have no doubt seen the announcement of the Conference in the gardening papers. The Conference is to be. As I happen to be one who has a grievance carried over from the Apple Conference of 1883, I feel disposed to air it in order that similar mistakes may be avoided in the coming Conference. The Congress invitation circular of 1883 says that one of the objects of the Apple Congress is "to correct their nomenclature." "Very good I said to myself," "I'll send a few samples that I particularly want the correct names of." I sent some six or seven varieties, and never heard a word about my Apples, not even that they were received, until the publication of "British Apples" in 1884, and in it, to my wide-eyed astonishment, on page 84 I found myself credited with sending up one variety, and to my greater surprise, the one variety which I had put in almost haphazard, and about which I did not care two straws, it being a well-known local Apple. Not a word is said about those I had sent to have their nomenclature corrected, either good, bad, or indifferent, from that time until now. A paragraph of the report on page 5 of "British Apples" says, "The Committee met on several occasions, and, working in sections, made careful examination of the exhibits with a view to the correction of nomenclature, &c., these corrections having been sent to the various exhibitors. It has not been considered necessary to refer to them in the report." All I can say is that I have not received my corrections up to the present date, August 14th, 1884; and if others of the exhibitors have not received theirs, there is, I think, a substantial error or grievance to persons to be remedied in the forthcoming Pear Conference in October next.

In the circular for the prospective Conference the correction of nomenclature is again a prominent object of the Conference. If I send this time I hope I shall receive my corrections within some reasonable time. Would it be too much to ask that a post card, which could be easily prepared beforehand and printed, leaving open spaces for date and number of exhibits, &c., be sent to each sender of fruit? It is a little bit too cool and negligent not to acknowledge in any way one's consignments; and I say again I had no intimation of mine having been received or not until the publication of "British Apples" a year after, save and except that I received from nurserymen who grow fruits largely, and with whom I had no previous acquaintance in the interval, copies of their catalogues.—N. H. POWNALL, *Lenton Hall Gardens, Nottingham*.

[The experience gained at the Apple Congress will enable the Council of the Royal Horticultural Society, under whose immediate direction the Pear Congress will be held, to make adequate arrangements for conducting the business in a more systematic manner than was possible on the former occasion, when there was no past experience to guide in the matter. The officials were overwhelmed, and their duties were not lightened by the misdirection and late delivery of numbers of parcels and by the non-compliance of not a few senders of fruit and letters with the published conditions. We do not suggest that our correspondent was a delinquent in any way; it is more probable that he was the victim of circumstances beyond his control, and which could scarcely be foreseen and provided for. The officials laboured assiduously in discharge of their duties, and did all that was possible under the extreme pressure to which they were subjected to render the Congress generally satisfactory.]

VIOLA PYROLÆFOLIA.

THIS very beautiful dwarf, hardy herbaceous plant, was introduced from Patagonia thirty years ago by Messrs. Veitch, and grown by them and distributed under the name of *V. lutea*. It produces a tuft of small, cordate-ovate, radical leaves, with ovate or linear-lanceolate fimbriate stipules, and produces very large, bright yellow blossoms, each elevated considerably above the foliage on a slender stalk. The flowers have a short blunt spur, and the petals are bearded inside with club-shaped hairs; the lower petal is obcordate, streaked with red lines. It is found in Chili, as well as in the Straits of Magellan; and has been known under the following names:—*V. maculata*, *V. glandulosa*, and *V. lutea megaphyllos*.

NOT ENOUGH MANURE.

If there was any doubt about the great value of solid manure, and the excellent results attending its free use in the garden, this I should say would be effectually dispelled during the present hot summer, but before I treat upon manures I wish to touch upon trenching again. After the remarks anent trenching from my pen, published in these pages, I fully expected to be twitted upon the subject, and I have not been deceived, as several correspondents have recently pointed out good results attending the practice of trenching. It will be remembered that the tendency of my arguments was condemnatory of the general practice of trenching, and in spite of the trying season of 1885 I am still prepared to argue on much the same lines, not, however, from a mere wish to be thought wiser or more consistent than my fellows, but from conviction. I still say the practice of trenching, or even bastard trenching, is not always judicious either for improvement of soils and the consequent increase in the value of

the crops, or by way of preparation for a dry season. If I had not travelled out of this district and seen various other gardens, or even had not tried several experiments in trenching this season, I should not venture a repetition of my old assertions. Whenever I have been in conversation with an intelligent farmer, market grower, professional or amateur gardener, I have sounded them as to the state of their various crops, inquiring particularly as to the preparation of the soil, and the result of my investigations is that trenching is a doubtful practice, much more in fact depending upon a liberal use of manure and a proper surface preparation.

In our garden, for instance, land trenched two spits deep has long been completely dried up, and the Roses, Peas, and Runner Beans which occupy it are now in a wretched plight. On the other hand, where the ground was freely manured and roughly dug early in January, this was thoroughly pulverised, admitting of its being properly broken down to a good depth, and subsequent surface stirrings have preserved the moisture



Fig. 28.—*Viola pyrolæfolia*.

to a surprising extent. Thus without trenching and without any appreciable rainfall since the first week in June, we have not failed with one kind of vegetable. At the present time (August 11th) we have presentable Peas, Beans Broad, Kidney and Runners, Cauliflowers, Globe Artichokes, Spinach, &c., not up to exhibition form I admit, but quite good enough for a nobleman's table. Watering any of the foregoing, with the exception of Peas, was out of the question, and the moisture to support them had to be derived from the fairly well-manured surface soil and the cool unbroken subsoil. Early Potatoes, again, are not so small as might have been expected, while the breadths of *Magnum Bonum* and *Champions* are still healthy and vigorous, and that, too, without the assistance of a particle of solid manure. The ground was well broken up to the full depth of the forks, and that is the secret of the success in this case.

One of the largest farmers on this estate recently informed me that he has invested £2000 in machinery, but took care to point out that steam ploughs or cultivators were not included, nor would they be used under any consideration on his heavy clayey land. I hazarded the opinion that he would not be troubled with much straw this season, and the reply was

to the effect that it would "show above my head;" and as I am about 5 feet 9 inches in height, that Wheat straw is quite long enough; neither will the yield, so I was informed, be at all "short." "How about the root crops?" is the next question, and the reply was that he had twenty acres of Swedes and Mangolds in a highly satisfactory condition, and about the same extent very patchy indeed, and might not be preserved, transplanting being out of the question. In the former case the land had been laid up roughly in time for the cold drying winds to penetrate thoroughly, and soaking rains enabled the surface cultivation to be properly carried out. The other breadth was a failure, simply because it was occupied with Wetches during the winter, and could not be subsequently got into good working order; it was "nubbly" in fact, and "nubbly" ground, no matter how deep it may be, is bound to quickly lose its moisture by evaporation.

Coming near the centre of horticultural advancement, we have further stronger proofs of the necessity of good surface preparation as a precaution against drought. Near Rainham in Essex a large deeply ploughed and heavily manured breadth of land was cropped with Runner Beans, and these early in the season looked very promising, the owner confidently anticipating a much earlier and better crop than would be obtained in a "notchey" breadth of the same vegetable owned by a friend of mine. The latter sent 160 bushel sieves of Beans to market before either the Rainham grower or many other growers, and realised double the price for his "sendings." Of course I asked how he managed this, and he at once made use of much the same expression as the farmer above mentioned; his ground was well manured and thoroughly broken down, whereas the Rainham growers' was "nubbly."

It does not follow that because I do not recommend trenching as a panacea for all evils I am encouraging thriftless or lazy habits; on the contrary, if my advice is followed and more pains are taken in the matter of improving the surface soil, nearly as much labour will have to be expended on it as in the case when trenching is resorted to. The free working of heavy soils will not often be improved by the addition to it of a portion of the subsoil, though the latter may increase the fertility, and I have no great faith in the efficacy of a deep root run. Burnt clay, garden refuse, including the accumulations from the potting bench, coal and wood ashes, leaf soil, peat, sand, and any other available fine material freely added to, and well mixed with, the surface will serve to render it more open and fertile, as well as increase the depth. If the subsoil can be improved by draining, or be gradually rendered fit for bringing to the surface by the addition of various decaying matter, so much the better, but in many cases it is best left alone. Shallow light soils usually rest on a subsoil of a nature totally unfit for bringing to the surface, and in most cases I should prefer to increase the depth of fertile soil by adding various accumulations, marl, road trimmings, and solid manure.

This brings me to my text again—viz, "Not enough manure." How many gardens in the country get sufficient solid manure, more especially that formed in a farmyard? Not one in fifty, I should say, hence the many failures in hot weather, as well as numerous disappointments in all seasons. We ought not to be asked to make bricks without straw, or, in other words, we ought not to be expected to produce heavy crops of superior vegetables and fruits without proper supplies of manure, solid or artificial, as the case may be. Good farmyard manure is considered by all authorities, I believe, to be unrivalled in its composition, its decay when it is mixed with the soil being chemically and mechanically effective, nearly or quite restoring the whole that the soil has been robbed of by almost any crop. That this is strictly the case is very evident, or the market farms, where trenching is not thought of, would have long since become unfertile. It is no uncommon occurrence for the proprietors of these to manure the land at the rate of fifteen to twenty-two horse loads of manure, or, say, at the rate of twenty-five to forty tons to the acre, with perhaps nearly or quite as much for the succeeding crops. They manure heavily and they crop heavily, and one condition must in every case accompany the other, or failure will inevitably result. I have known cases where the land was heavily manured for Runner Beans, and the next season similarly treated for Potatoes, and the crops of the latter have not only paid, as far as weight was concerned for this outlay, but the quality was also good. Poisoned land is an unknown experience with them, as they take out all they put in, and sometimes more.

It must be remembered that the manure they use is not a mass of mouldy semi-decayed straw, nor a heap of solid hotbed manure devoid of nearly every constituent that goes to form a perfect manure, and which I am sorry to say is the kind of manure most plentifully used in the majority of gardens. Market growers use nearly fresh, moist, and frequently steaming hot manure with but little straw in it, but from which little or any valuable properties have been evaporated, or else washed away. Straw half-decayed manure, such as gardeners get from the well-kept stables of the well-to-do classes, may improve heavy land in that it renders it more finely divided, but there is no stability in it, and it must be supplemented with special manures if the land is to be made the most of. The mass of humus that passes for manure, and which we get from the old hotbeds, may serve to preserve the moisture in any soil, and therefore assist in the disintegration of other manures added to or contained in the soil, but it is most deficient in phosphates, salts, potash, and other ingredients contained in a perfect manure, and these must be added or failure is certain. Land is more often poisoned by this imperfect manure than it is by good manure, and in this case an addition of a small quantity of subsoil to the surface, or a dressing of quicklime, nitrate of soda, or other remedies may prove effective in that they either restore or liberate the required ingredients. Given plenty of manure such as the market growers get I would undertake to succeed with vegetables and

most kinds of fruit in almost any fairly well situated garden and during all seasons, and that, too, without trenching. Better have 1 foot of well-worked and freely manured ground than double that depth of partially manured, and which is almost unavoidably "nubbly." For the uninitiated I may add that by "nubbly" land I mean such as consists principally of hard lumps which refuse to separate when the ground is dug or surface-stirred, and which during dry weather quickly part with what little moisture it contains. Even mulching with manure or litter is of little avail in this case.—W. IGGULDEN.

FLORAL DECORATIONS IN LONDON HOUSES.

WHILE in London for ten days lately I had many opportunities of seeing these, and the results were charming. The garden papers have often contained reports of the carpet, Calceolaria, and other beds in the various London parks, but in my opinion details of how some of the best decorations are executed during the London season would be more interesting, and an agreeable change. The flowers used in June and July might be of a different class to what would be in season at other times of the year, but the arrangements could be carried out on much the same lines. Very often in the winter time we country folks have tables to decorate for large shooting parties, and by substituting Camellia blooms for Rose blossoms and other flowers then in season the tables might easily be arranged after the London season style. A great many flowers are not so much wanted in cases of this kind as graceful arrangement, and it is in this that the London florists excel. That my remarks may be as practical as possible I will confine them to one house at present—this is 5, Grosvenor Square, the London residence of W. C. Brooks, Esq., M.P., where on the 8th of July I saw some magnificent decorations. They were carried out by Messrs. Nieman & Cornish, of Orchard Street, Portman Square, and charmed everyone who saw them. In the front hall there was a bank of Palms, including tall *Seaforthias* and *Chamaedoreas*, with bright flowering plants underneath, the principal of these being *Liliums* in great variety, *Crassulas*, and fancy *Pelargoniums*—a rich and elegant group, and the whole was fringed with *Isolepis gracilis*. A little further on some window recesses were adorned with graceful plants of *Cocos Weddelliana*, *Hydrangea paniculata*, *Crotons*, white *Lilies*, and the tall feathery *Chamaedoreas* drooping gracefully over the whole. Outside on the balcony, which also formed a promenade, there were banks of green moss, containing masses of crimson and white *Roses*, which had a grand appearance.

The drawing-room was especially attractive. The mantelpieces and side tables were occupied with many choice Orchid blooms, *Cattleya Mendelli* and *Odontoglossum Alexandræ* being very conspicuous amongst them. Pink *Carnation* blooms were plentifully used, and long spikes of the white *Tuberoses* and *Gladioli*. The *Bride* were displayed on a groundwork of sprays of *Adiantum farleyense*. The recess of one of the fireplaces was faced with a large mirror, bordered with rustic work, and garnished with long sprays of *Asparagus tenuissimus*, *Caladiums*, small *Ferns*, and the whole was most artistically embellished with rare Orchid blooms.

The back windows of the drawing room were taken out, platforms erected outside, and large blocks of ice were built up on these, the margins being fringed with tall reeds, wild grasses, and common *Ferns*; coloured lamps (amber, green, and blue) were lighted behind, and the effect was splendid. Long trays full of water were placed underneath the tables, and these were filled with aquatic leaves and *Water Lilies*. In the boudoir there was an immense *Kentia*, with a tall stem and large spreading leaves, and seats underneath. Another large mantelpiece was surrounded with Orchids, *Liliums*, &c., and the fireplace was converted into a little dell of green moss and *Rose* buds. The corners of the rooms were tastefully filled with Palms, *Ferns*, and *Lilies*, and the appearance of the whole was attractive in the extreme. The rooms were cool, and the atmosphere delicately laden with the fragrance of many flowers.

A day or two previous to the date named above I saw some exceedingly beautiful dinner tables there. Over thirty sat down, and being a large table scope was given to the florists' art, and it was taken full advantage of. The massive gold bowls which stood between the candlesticks were filled with the choicest of Orchid blooms, fresh fronds and sprays of the finer forms of *Asparagus*. An undulating line of *Stag's-horn Moss* was laid on the cloth all round the table, and this was studded with crimson *Roses*. The moss just named is excellent for the purpose, and is brought from one of Mr. Brooks' estates in the north of Scotland. Each of the candlesticks and flower vases along the centre of the table were surrounded at the base with huge wreaths of splendid *Roses*, and small plants of *Caladium argyrites*, Palms, and *Ferns*. The *Roses* were chiefly scarlet and pink. These were obtained by the thousand from some of the chief *Rose* nurserymen, and I am sure all *Rose* growers would have been delighted with the magnificent results obtained by the tasteful and profuse introduction of the queen of flowers.—M.

In reference to this subject the following cutting has been sent us from the *Kingston and Surbiton News*, describing the plant and floral decorations provided by Messrs. Jackson & Son at the Mayor's dinner in Kingston last week.

"The entrance hall was grouped on each side with growing shrubs, while inside the lobby were several small collections, befittingly filling the several corners without causing obstruction or inconvenience, and at the same time contrasting most favourably with the surroundings, and adding brilliancy to the whole. Passing along by the staircase and passage, also highly decorated, into the Mayor's reception room, the eye rested on a most unique and complete arrangement in one of the corners, while in front of the pilasters stood elegant and graceful Palms, Ferns, &c.; *Cocos Weddelliana*, *Dracæna australis*, and *Blechnum braziliense* being most prominent. At the extreme end was a most meritorious collection of rare exotics, the admiration of every beholder. In the background were tall Palms, relieved by a grand weeping variety of *Phormium tenax variegata*; the original variety usually grows rigid and erect, but that under notice has a weeping character, which, combined with the various markings on the foliage, contrasted effectively with *Crotons Disraeli* and *Wiesmannii*, *Dracenas Goldiana* and *terminalis*, and others. Lower down were three neatly trained specimen Heaths, two of *Erica Marnockiana*, the centre one being a grand piece of *Aitoniana Turnbulli*. The groundwork was composed of *Adiantums*, from which sprang several fine varieties of Orchids, notably several magnificent spikes of *Saccolabium Blumei majus*, one spike of which measured upwards of 2 feet in length. There were also several fine *Odontoglossum Rossi majus* and *vexillarium*, with *Masdevallia Harryana*, which were conspicuous by their extreme beauty and curiosity. The whole was edged with well-grown examples of the loveliest of all the Maidenhair family for this purpose, *Adiantum gracillimum*, and made a most effective arrangement indeed. Passing from here through the corridor to the dining-hall, everyone must have been impressed with the simple but at the same time most unique arrangement brought about by the happy thought of utilising as a boundary wall of this passage one side of a building, on which had previously been neatly and regularly trained the Vines growing there. Just at the present time the foliage is of the deepest green, and the small clusters of Grapes added to the novel effect. At the foot, on either side, were small decorative plants, so that the combination seemed quite a fairy scene, rather than the work of man. Thus was Nature adapted so naturally that even experts wondered and inquired how such an effect was brought about, while it formed a cool relief from the warm and magnificent dining-room, which was most elegantly arranged throughout. Every available space was here brought into use to add to the brilliancy of the whole. In each of the corners were small groups; in other places Palms drooped their graceful foliage; while on either side of the Mayor's seat were two groups of miscellaneous plants in semi-oblong form, and in each of which beautiful Orchids were very prominent. *Saccolabium*, *Aerides*, *Oncidium*, and *Odontoglossum* each by their beauty contributed their share; while *Lilium longiflorum*, *Ixora grandiflora*, and the scarlet plumes of *Clerodendron Koempferii*, contrasted most favourably. On the ledge which ran the length of the dais on which the principal table stood, a handsome and varied collection of plants and shrubs was placed; and in front of the ladies' boudoir *Hydrangea paniculata grandiflora*, with *Adiantum cuneatum*, were largely employed. The value of the plants thus employed would mount up to many hundreds of pounds; about 800 Ferns alone were worked in. Mr. Pntt ck and Mr. Sheppard were mainly responsible for the beautiful arrangements, and Mr. Latham, from Messrs. Jackson's gardens at Hampton Court, also assisted.

VINE VAGARIES.

UNDER the above heading I would call the attention of your correspondent "Thinker," and the many other able writers on Vine culture that contribute to the pages of the *Journal of Horticulture*, to a circumstance in connection with Grape culture here which I have observed for some years, but for which I can on no hypothesis account.

Some fourteen years ago we planted a span-roofed house with Muscats. It was found that in this high cold district they did not ripen well in span houses, and we determined to convert the house into a Barbarossa house. We shook out and planted a young Barbarossa Vine beside each Muscat, and inarched the former, which was weak, on the latter, which was strong. The union was in every case effectual, and the progress good. After a time we found that Gros Colman took the market better than great 6 lb. and 8 lb. bunches of Barbarossa, and we put bottle grafts of the former on to each Vine above the junction of the previous two sorts. These took hold, and now the Vines are bearing fine crops in the house, and here comes what to me is a puzzle.

We left some Vines with two legs in the ground, one a Muscat, the other Barbarossa, with the bottle graft above their junction; others we put on the Barbarossa below the junction, and cut away the Muscat, pulling up its roots as far as we could; in other cases we inarched or grafted, more properly speaking, on the Muscat, and cut away the Barbarossa. Thus we have some on the Muscat stock, some on the Barbarossa, and some on both; and while those on the

Muscat and those on the Barbarossa are about equal as to crop, they are at least a month more forward than those on the joint Barbarossa and Muscat stocks. The latter have, if anything, the finest foliage and show most vigour, the crop equally heavy; but while the Grapes on the single stocks are nearly black in some cases, and fit for market, those on the double are perfectly green, and whoever grows Gros Colman knows what this means. We have three examples of the double stock, and all tell the same tale.

The stocks, where they are two-legged, are as vigorous and healthy as those that are on single stocks; they have from four to six bearing rods like the single ones, and every May they are treated the same. Had those inarched on the Barbarossa been the late Grapes I would have blamed the stock, but that idea is barred by the fact that the Grapes on that stock are as early as on the Muscat, and, as I have already stated, a good month earlier than those on the joint Muscat and Barbarossa.—WM. THOMSON, *Clovenfords*.

NEPENTHES.

It would probably be difficult to determine any plants more interesting or attractive than well-grown *Nepenthes* laden with large pitchers. We have observed that no occupants of the plant stove arrest the attention of visitors so quickly as a number of *Nepenthes* in baskets suspended from the roof at the end of the house. These plants are certainly not amongst the most ornamental when they are poorly grown and badly pitched, they are unfortunately more generally met with in this condition than the reverse. I am inclined to believe that these plants are frequently subjected to too much shade, and in consequence they grow rapidly, but do not pitcher freely. Our plants have improved wonderfully in this respect since their removal from the shadiest end to the lightest. If exposed to the full force of the sun the foliage soon turns brown, an indication that the light is too strong for them. But if the rays of the sun are broken and as much light as possible admitted to them it will be found that the growth made is slower, sturdier, and very much firmer, a condition essential to the production of large highly coloured pitchers in larger quantities than is the case with plants grown under almost dense shade, as is too generally practised.

Another mistake frequently practised in the culture of these plants is to allow the growths to run unchecked, for when once fairly started they are not long before they reach the top of the house if left unchecked. When once they commence growing with such luxuriance they cease producing pitchers, and are of no real ornament in the stove. This should not be allowed, but directly a shoot shows signs of running it should be pinched back. The pinched shoot will soon break again into new growth, and pitchers will be again most freely produced. With a little judicious care in pinching the various shoots of a good-sized plant from time to time it will very rarely be found at any season of the year to be destitute of pitchers, which are really the interesting feature of these plants. *Nepenthes* should never be allowed to run up with a single stem, but as soon as they have been rooted and made a few inches of growth so as to become established in their baskets pinch them, and again directly they produce a leaf which will not bear a pitcher. It is surprising how soon a large bushy plant will be produced by this method without loss of time and pitchers, as is the case when the plants are allowed to grow with a single stem and have to be cut back to induce them to break again from the base. Probably *N. Hookeri*, *N. Rafflesiana*, and the large distinct free-pitching variety *N. Mastersiana*, the most beautiful of all, are the most worthy of cultivation. The three produce pitchers of very large size, are good growers, and distinct. Many of the smaller-pitched kinds are worth a place for the sake of variety where any attempt is made at growing a collection.—SCIENTIA.

TWO GOOD WHITE ZONAL PELARGONIUMS.

QUEEN OF THE BELGIANS.—In the remarks in *Journal*, page 107, respecting Mr. Ladds' Nursery, Queen of the Whites Pelargonium is mentioned. This I do not know, but it has induced me to give a line in favour of Queen of the Belgians. I obtained one plant early this season from Messrs. Cannell & Sons, and from the first was pleased with its strong robust appearance. However, having but little heat until March I let the plant alone, pinching the trusses out as they formed. By the end of March I was able to take three strong cuttings, which soon made plants; and being anxious to know what it would do outside I planted one out. One was kept in a pot outside without protection, and I am more than satisfied, not only with its free flowering, but also the pureness of the white flowers, not the least tinge of pink being seen. The plant in the cool house has been admired by all. In addition to the three plants

named the stock plant has furnished me with five other good plants, which are now throwing up fine trusses. It is not often we get spring cuttings so free as these are. I intend having a good stock of this variety, and commend it to the notice of the public as a plant of first-class quality.

LE CYGNE.—This double white I obtained at same time from the same firm as Queen of the Belgians, and as soon as it came into flower there was no doubt as to its quality, both for size of truss, single pips, and pure white colour. I discarded all my older doubles. Madame Ballet and Candidissimum plenum had been my chief stock, but these are not to be mentioned with Le Cygne. I must say the spring-struck plants surprise me with such large trusses of flowers without any special attention. So far every cutting has struck and done well. I intend to propagate it largely, and am obliged to destroy the young trusses, as I want to get a stock.—STEPHEN CASTLE, *West Lynn.*



PROPOSED EXHIBITION OF PLUMS.—It has been suggested that, as a great variety of Plums are fruiting this season, it would prove extremely interesting as well as instructive if examples of as many sorts as possible could be sent to the meetings of the Fruit Committee on the 25th of the present month, and on the 8th of September next. An excellent opportunity would thus be afforded of comparing the merits of the varieties of Plums in cultivation, and also in the correction of their nomenclature. It is known that many inferior varieties of Plums are grown throughout the country, whilst many new and greatly improved sorts are comparatively unknown. Intending exhibitors who cannot be present should address their packages to the Secretary of the Fruit Committee, Royal Horticultural Society, South Kensington. The carriage of the same will be paid by the Society. It is very desirable that young shoots with foliage should accompany the fruit, so as to facilitate identification.

BULBS FOR THE PARKS.—We understand that the Metropolitan Board of Works have this year accepted the tender of Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, to supply their London Parks with Hyacinths, Tulips, Narcissi, &c.

MESSRS. FOSTER & PEARSON, Beeston, Nottingham, request us to state their PLANT HOUSE, FRAMES, BOILER, &c., at THE INVENTIONS EXHIBITION have received a silver medal, no gold medal being given in that section.

THE WEATHER IN SCOTLAND.—Mr. D. Thomson, Drumlanrig, writes:—"This has been the most extraordinary summer here of which there is any record. Excepting a few days in the latter part of July we have not had what could be called a summer's day. Twice in July the thermometer fell to 36°, and once to 34°. On August 14th it registered 32°, and on the 15th, 31°, when Vegetable Marrows, French Beans, and Tropæolums were blackened. Everything is much later than I have any recollection of; for instance, Red Currants are not yet (August 15th) ready to gather for preserving, and Scarlet Runners will not be of size sufficient to use this season." We also learn that in Scotland about Callander there has been a considerable fall of snow. This is an extraordinary contrast to the hot dry weather we have been experiencing in England.

DR. A. PATERSON, Fernfield, Bridge of Allan, N.B., sends us two spikes of CATTLEYAS WARNERI AND DOWIANA, the blooms being magnificent in size and colouring. C. Dowiana was a little past its best, but had been exceptionally fine, the lip nearly 3 inches in diameter and 4 inches long. "They have been in flower for about a month," says our esteemed correspondent, "and I did not like to cut them before, they were so beautiful."

A DURHAM correspondent writes:—"I have read with much interest the correspondence in your valuable paper on the SPLITTING OF FRUIT, and send the following note in reference to the subject. I have the temporary charge of a new vinery planted in June, 1884, and I have only allowed two bunches on each cane, but have had four pot Vines carrying a good crop, and for an experiment I closed the house one hour earlier and raised the temperature 7° by night, with the result that the berries began cracking very badly. I then lowered the temperature to 65° by night, and I have not had a berry crack since. I have miscel-

laneous greenhouse plants in the vinery and pot Tomatoes carrying good crops."

MESSRS. JAMES CARTER & Co., 237 and 238 High Holborn, have sent us some specimen blooms of their CHALLENGE PRIZE STRAIN OF BALSAMS, of which they now have a very pretty display at the Perry Hill Nursery. The blooms were extremely fine, full, and beautiful, the following shades of colours being represented:—Flesh, purple salmon, white, scarlet, crimson, pink, densely spotted purple, white marbled with violet, and white marbled with rose. The blooms were from 2½ to 3 inches in diameter and very symmetrical in form.

A LAMBETH amateur writes—"Some of your readers may like to know that a new Chrysanthemum Society has just been started in the town of Halstead, Essex, called the HALSTEAD AND DISTRICT CHRYSANTHEMUM SOCIETY. The President is Colonel A. S. H. Lowe of Gosfield Hall, and the Vice-Presidents, Geo. Courtauld, Esq., M.P., and J. R. Vaizey, Esq. The first edition of the Society's schedule, comprising eighteen classes, has now been circulated, and the Exhibition will be held on Tuesday the 17th November next in the Town Hall, Halstead. The Secretary is Mr. Edwin Bentall, Halstead."

"S. C." writes as follows:—"I question very much if there is a scarlet variety to equal double Zonal PELARGONIUM F. V. RASPAIL. The habit of the plant is good, it is readily propagated, and is very free flowering. I have called it double, but really it is semi-double, the outer row of petals being quite distinct from the centre florets; the truss is large, and the single pips very fine. As a bedding Palargonium I find Vesta a good variety. I have a few planted out, and like it very much. My plants were very small, but they soon made themselves at home, and have flowered very freely.

"Some seedlings of LAVATERA ARBOREA VARIEGATA were raised in the spring and potted with the intention of growing them in pots; but I soon found that, however ornamental the plant might be, it was going to cost too much for tobacco paper to kill the green fly, so I decided to plant them out of doors. They are now in full beauty as regards foliage. This is a very conspicuous plant as a single specimen, and would do well in shrubberies, but I do not have it too near the flower garden, as it is such a favourite with the aphides, both black and green. The variegation is good, though at one time I thought it would be all green."

MESSRS. E. WEBB & SONS have sent us from Stourbridge sample pods of their new PEA, THE CHANCELLOR. They are large, scimitar-shaped, and crowded with fine peas, but, unfortunately, they were too old for us to form an estimate of their quality.

A KEW correspondent sends the two following notes—"PRIMULA CALYCINA is again coming into flower with us, having already given a good display about two months ago. It seems to have been one of the unfortunate Primroses in the way of synonyms, as it has no less than three—P. glaucescens, P. lævigata, P. integrifolia, besides being often confounded in gardens with P. Wulfeniana and some of the varied forms of P. spectabilis, from both of which the true P. calycina is abundantly distinct even in the cultivated state. It grows from 3 to 6 inches high, forming dense rosettes of beautiful dark glossy leaves, the margins of which are finely serrated and undulated, a reliable distinction when out of flower; leathery in texture, ovate lanceolate, pointed, and tapering gradually to the base. Its large flowers, almost an inch in diameter, are of a clear lilac, and very handsome; from four to eight in a head. It seems to thrive best in a mixture of loam and lime rubble, the latter predominating, on low shelves of the rockery, and having a west exposure. It requires plenty of water during the flowering and growing season. It is easily increased by division, which may be done in the autumn after the growths have been made. A native of the southern Alps, flowering May and June."

"THOUGH long known and cultivated in English gardens, the BERGAMOT, MONARDA DIDYMA, seems to have lost ground within the last few years, for what reason we know not, unless that in the ordinary border in the dry hot seasons it is inclined to dwindle, and a severe winter kills it outright. This state of things we believe is in a great measure due to want of water, there being no wide difference between this and most North American plants as regards treatment. We have tried it in a bog bed along with Droseras, Pinguiculas, &c., with remarkable success, and it is just now throwing out runners a foot long, and so numerous as to form quite a network all round the plant. Under the latter conditions it grows between 3 and 4 feet in height,

with half a dozen leading shoots, which branch and result in a grand display of deep scarlet flowers in large head-like whorls. It has a grand effect amongst foliage plants at the present time. Others are *fis ulosa*, and its variety *purpurea*, the latter being a really handsome plant, and *Kalmiana*, and which do very well on shady borders. They are excellent bee plants, and should be grown by all who combine beauty with utility in the garden. They may be increased by dividing the roots during autumn."

— **AUTOMATIC IRRIGATION.**—In very dry seasons there is a great demand for water upon the gardens, lawns, and conservatories, and any apparatus which effects a saving of the gardener's time must of necessity prove invaluable. Messrs. Merryweather of Long Acre have devised various systems for automatically distributing water. They devised a system of non-corrosive metallic tubes in short lengths mounted upon easy running carriages and connected with flexible joints; the metal pipes being perforated throughout their whole length, so that by simply attaching one end to a hydrant or standpipe the water will run through a length of 60 or 90 feet of piping, dispersing itself on the land through the whole course of pipes by means of the perforations. It is very easy to move the apparatus from place to place at intervals. Another system consists in similar moveable pipes without the perforations; to open at the extreme end, to which a distributing nozzle is attached. The nozzle is capable of throwing the stream in either a jet or a spray at the will of the operator. A third apparatus is both ornamental and useful, as it consists in a portable revolving fountain upon a stand, to which hose may be connected. Garden hose or lead or iron pipe so small as half an inch in diameter can be connected to the inlet coupling, and the water supply taken from the hose system 8 feet or more above the fountain or direct waterworks pressure. The sprinklers are beautifully nickel-plated, and they rapidly rotate by the action of the issuing water, scattering a shower over a wide area. The latter is arranged inverted to screw up to the ceiling of a fernery or conservatory, and thus scatter the water downwards and sideways.

— We are informed that the thirty-eighth TAVISTOCK COTTAGE GARDEN EXHIBITION, which took place in the market on Wednesday last week, was, in point of fact, as good an exhibition as the Society has held for many a year, competition in many of the classes being very keen. The contributions from the country gentlemen were superb. The beautiful display of Roses from the Torquay Roseries should also be mentioned as affording a source of much enjoyment to lovers of horticulture. Mr. W. H. Chichester, of Grenofen, did not send a collection of plants this year, but his stand of beautiful double and single Begonias was a sight seldom to be seen at a cottage garden show. The vegetable exhibits were quite up to the mark as regards excellence, although there was a slight falling-off in the numbers as compared with former years. Some magnificent bunches of Grapes stood out conspicuously among the collection of fruit, which is always the weakest point in connection with the Tavistock Show. The Devon and Exeter Bee-keepers' Association held its first Exhibition in connection with the Society, which excited much curiosity. The market was tastefully decorated, and reflected credit on those who accomplished the task. The Duke of Bedford, the patron of the Society, attended by Mr. Wing and Mr. Rundle, visited the Show, and evinced much interest in the Bee-keepers' Exhibition. The President for the year, Mr. W. S. Rosevere, J.P., was also present. The members of the Committee, and Mr. H. E. Monk, the energetic Secretary, did all they could to insure the success of the Exhibition.

— **WRITING** in reference to BORDERS OF HERBACEOUS PLANTS, "A Gardener" observes that "Many gardens where the culture of hardy plants is made a specialty have proved a partial failure. This is not always due to mismanagement, but is the result of the dotting system, which does not render a garden the most effective or the most enjoyable. A collection of these plants for flowering at various seasons of the year do not and never will commend themselves to the flower-loving public when dotted in beds and border. The beauty of a plant in flower is destroyed by two or three, or probably more, of its neighbours that have died or dying down to leave the ground bare and vacant half the season, or only to look untidy during that period. There can be no doubt whatever that these plants display their real beauty and true character much better when kinds flowering about the same time are massed or associated together about the grounds, the surroundings being suitable, than when planted on the dotting system. The system I mean will readily be understood by the following example or two. At this season what could be more beautiful than a good group of the old *Lilium candidum* display-

ing its pearly white fragrant flowers against a background of dark green Hollies or Portugal Laurels, or a large group of Delphiniums surrounding, say, *Acer Negundo variegata*, or the latter in the background? Any light, scarlet, orange, yellow, or intermediate colours show themselves to perfection with dark green shrubs for a background."

THE TURNER MEMORIAL PRIZE.

THE report in the Journal states the Committee have decided that the cup given by subscription in memorial of the late C. Turner is to be won three times at the National Dahlia Show. As a subscriber to the fund, I consider it to be a prize; if so, why should it be made so uncertain? Will you kindly allow me space to ask who is to guarantee that the funds may be found to support that Show, or that the Crystal Palace Company may continue their grants? also will any person stage their best flowers for so uncertain a prize which may be never again able to produce such? Nature any season cannot be depended upon. If it is to be a challenge cup it should have been with a sum in addition, by subscription, say 10s. for every competitor. Under the present terms those who have subscribed are to be supplemented by persons who have not contributed anything. Trusting the Committee will reconsider the subject and allow nurserymen and amateurs to compete who subscribe, the amount to go to the winner, and the cup to be held over for three winnings after.—THOMAS GARRATT.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 131.)

THE introduction of Mr. Fortune's Japanese varieties does not appear for some few years afterwards to have been generally so much appreciated as the subsequent improvements in that class have been. English florists up to the date of their appearance had set up a standard of perfection, of which the incurved variety was the type, and undoubtedly from a purely florist's point of view that particular section comprises the flowers mostly deserving of such an opinion. Mr. Salter probably felt the same way inclined, for when he announced the distribution to the public of almost the first set of this species he raised, he somewhat apologetically observed that although they were not what are termed show flowers they were still very interesting. Notwithstanding, however, the opinion of Mr. Geo. Glenny and others of the period, the Japanese was not allowed to be doomed to total extinction, as might possibly have been the case had not the public and visitors to the exhibitions been surprised and delighted with their curious form and brilliancy of colour. To this fact may almost be attributed the renewed and unceasing interest evinced by the flower-loving portion of the community at the time in which we are now living, and for the same reason a fresh impetus was given to those growers and raisers who had made the Chrysanthemum their study and business. Their efforts now seemed to be redoubled, and for years past so great has been the improvements and so numerous are the fresh additions, that the Japanese section bids fair to become the most important and extensive one, if it is not so already. Among those first sent out, which still remain with us, are *Baronne de Prailly*, *Bronze Dragon*, *Comtesse de Beauregard*, *Grandiflorum*, *Madame Godillot*, *Striatum*, *Yellow Dragon*, *Comet*, and *The Daimio*, which were presently succeeded by *The Mikado*, *Hero of Magdala*, *James Salter*, *Dr. Masters*, &c.

In 1869 the nursery at Hammersmith was required for railway purposes, and to the great regret of all enthusiastic growers of this plant, Mr. Salter, who had been established there for over twenty years, retired from business and died in a few years. This was deplored by all who knew him for many reasons, and there was nowhere for the public to see the novelties of the day excepting for a year or two at the establishment of Mr. Forsyth. This well-known grower, although a very able and skilful cultivator, was in no respects a raiser in the same sense of the word as Mr. Salter. It was thought that when Mr. Forsyth ultimately went to New Zealand, where he still lives and grows the Chrysanthemum with the same enthusiasm as of yore in his home at Otago, that the Chrysanthemum had had its day, and for several years it seems to have been rather under a cloud. But the Japanese varieties were yearly increasing and pushing their way to the front, by which in a great measure the popularity of the Chrysanthemum has been and will be sustained for years to come.

In the Channel Islands of late years the raising of seedlings appears to have been much more neglected than it was a quarter of a century ago, for, with the exception of Mr. Downton, the raiser of *Elaine*, *Miss Eyre*, *Mulberry* and *Fair Maid* of Guernsey, and Major Carey, who is now the only one of importance left, there have been no important additions for some time from that part of the world. Major Carey's seedlings, from information obtained by the kindness of a relative residing in Jersey, appear to have been—in 1875, *Beaumont*, *Belle of Japan*, *Emperor Nicholas*, *Sir Isaac Brock*, and *Yokohama Orange*. 1876, *Diamond*, *Bijou* of Guernsey, *The Khedive*, *Peter the Great*, and *Red Gauntlet*. 1877, *Ethel*, *Sultana*, *The Czar*, and *Sarnia*. 1881, *Mrs. Chas. Carey*, *Victoria*, *Hackney*, *Holmes*, and *Japanese Violet*.

In 1881 Messrs. Veitch & Sons imported from Japan six new sorts called Bend Or, Comte de Germiny, Delicatum, Duchess of Connaught, Kæmpfer, and Thunberg, all of them being so well known as to require no comment on their merits. Two or three years later Messrs. Mahood & Son were successful in raising some seedlings, and the three varieties sent out by them, bearing the names of Mrs. Mahood, Joseph Mahood, and Mrs. Townsend, are stated to have been selected from over 300 seedlings raised by them.

Mr. Salter's retirement was probably the reason why so few purely English-raised Chrysanthemums of all sections have been obtained since he discontinued the work, although there have been some very valuable contributions both before and after that event by the florists of this country, Mr. Rundle, Mr. Bull, and Mr. Hayes being some of those who are specially worthy of mention. Mr. Alfred Salter, the son of the great raiser, is still engaged in continuing the work begun by his father, and during the past two or three years has distributed Annie Holborn, Comet, Distinction, Gloria Solis, Salterii, Maid of Athens, Mary Salter, Rob Roy, Tubiflorum in the Japanese section, and a few other kinds.

There remain also to be mentioned among raisers of our own country, Mr. Cullingford, Mr. N. Davis, Mr. Geo. Stevens, and Mr. Teesdale, whose flowers may be found described in any of the catalogues issued by the nurserymen who are in the habit of dealing to any extent in this plant.

We must now take one more look at the French, and it is with no little regret that the author is compelled for the sake of brevity to limit his account of their recent triumphs.

A few words must therefore suffice. For the past twenty years those French florists who have taken up the culture of the Chrysanthemum have been working at their improvement steadily but surely. They have not only produced varieties of far greater superiority to any of the earlier kinds, but they have been instrumental in producing varieties for which in brilliancy of colour may be said to be unparalleled.

This, it should be borne in mind, does not apply to the incurved kinds, but more particularly to the Japanese and Pompon varieties. They have created a new race hitherto unknown which we call the Japanese Anemone, and of this class, although consisting of something under a dozen distinct sorts, much may be expected. The most prominent raisers in France of very recent times, with some of whom the author is in personal communication, are

Dr. Audiguier, the raiser of Dr. Barrié, Joseph Durban, L'Infante d'Espagne (syn. Soleil Levant), Mlle. Blanche Pigny, Mons. F. Marrouh, Mons. J. M. Pigay, Souvenir du Maréchal Niel, Silvie, Madame Berthe Pigny.

Mons. Boulanger, who has sent out Gloire de Mazargul, and several other sorts not very generally grown at the present time in this country.

Mons. Victor Lemoine, who raised Fulgore, several Pompons, and large-flowering varieties.

Mons. Bernard, who sent out Gloire Rayonnante, M. Frémy, Reine Margot, was also the raiser of a few Pompons and others.

Mons. Bouchariat, noted principally for his Pompons, some of which belong to the liliputian class.

Mons. Lacroix, not to be confounded with the amateur of the same name, a comparatively new raiser whose best known flowers are Mlle. Moulis, Souvenir de la Reine Mercédès, Parasol, Mlle. Lecroix, Flocon de Neige, Tendresse, the splendid incurved Jeanne d'Arc, the Japanese Anemone, Fabian de Médiana, wrongly printed in English catalogues Fabias de Maderanaz.

Mons. Marrouh, to whom we are indebted for Madame Clémence Audiguier, Marguerite Marrouh, Mons. Marrouh, Madame Clos, Madame Thérèse Clos, Marie Jolivat, Mlle. Cabrol, Sœur Dorothée Souillé, and Souvenir de l'Ardenne.

Mons. Pertuzes, whose flowers are not very well known in England, excepting perhaps Timball d'Argent and Triomphe de la Rue des Châlets.

Mons. de Reydellet, an amateur raiser of great promise, whose new Japanese Camieu received a first-class certificate last autumn at the Crystal Palace. He has altogether in the last few years raised and distributed a large number of varieties amounting now to upwards of 100—C. HARMAN PAYNE.

(To be continued.)

HAMPTON COURT.

It would be difficult to find flower gardening carried out in any part of the kingdom, whether in private or public gardens, on the same high standard of excellence as in the public parks and gardens of London. Most provincial public gardens have little high-class flower gardening, while in many fine parks not a flower is to be seen, but in and about the great metropolis every endeavour is made to render these public resorts as gay and attractive as possible. That the public most highly appreciate

the floral decorations provided for them, is proved by the fact that hundreds of thousands wend their way annually to Hampton Court, alone to examine and criticise the "hedding." It was with this object that I made my way to these gardens, which have become so widely famed of late years for its carpet and other bedding. Those who reside in the country and have not visited these parks, can form only an inadequate idea of the enormous amount of care and labour required to provide a change in the arrangement of the plants and the design of the beds. It is astounding how Mr. Graham succeeds in making new and suitable designs year after year, but such is the case, and it is plainly evident that one less skilled in the art of flower-gardening would certainly fail, or have to fall back upon old designs. There is, however, no trace of failure at Hampton Court, and no lack of elegant designs, for the carpet beds are this season more beautiful than ever.

Carpet bedding and beds filled with Pelargoniums are not the only styles of flower gardening carried out in these gardens; on the contrary, a great diversity of plants is employed. For instance, the long border skirting the Palace and terrace walk, probably half a mile in length, has the wall covered with Roses, Clematis, Flammula, and very beautiful this is at the present time, and other climbing plants, while half the length is filled with a choice assortment of hardy herbaceous plants, while the remainder is arranged with subtropical plants at the back, the front is planted with a line of Beet, next to this a row of Pelargonium Flower of Spring, and edged with Ageratum Cannell's Dwarf. Beds are filled with Roses dotted about the grounds, and large beds and borders, forming a background to many of the flower beds, are filled with a large and choice collection of herbaceous plants. Carnations and Picotees are represented by about seventy varieties, while Phloxes and Lilium auratum are amongst the most conspicuous of the hardy plants in flower. Very noticeable also in these borders was a species of Achillea—sent to Mr. Graham by Mr. Ware—that attains a height of about 4 feet, and produces large heads of its bright golden flowers. This is a beautiful decorative plant for this season of the year. Another bed, which is merely mentioned to show the variety of the arrangement and the style of planting, had been beautiful with the old Lilium candidum, and a little earlier in the season with Delphiniums planted amongst them. The latter having been cut down close to the ground after flowering will soon be in full beauty again. Another beautiful bed for autumn in this department is planted with an early-flowering Japanese Chrysanthemum Madame Desgranges, edged with a wide band of Aster Amellus bessarabicus, one of the finest of the Michaelmas Daisies. Other very fine autumn beds might be noted, but I shall leave this department with a mere mention of Lilies that are largely grown, being raised by thousands, and under the system pursued will flower freely in about three years. I am not in a position at present to state the method of propagation and culture pursued by Mr. Graham, but have no hesitation in saying that the discovery he has made and is practising, will revolutionise Lily culture entirely when publicly known, and bring them within the reach of all who have a few square yards of garden.

Amongst mixed beds and those in which Pelargoniums formed the principal feature, one planted with Pelargonium Mrs. Pollock in the centre, mixed with Viola Favourite and edged with Coleus Verschaffeltii, was very conspicuous. Another striking arrangement was formed with Flower of the Spring Pelargonium, carpeted with Viola Tory and edged with Pelargonium Golden Harry Hieover. Another beautiful arrangement was planted with Pelargonium Black Douglas carpeted with Viola Blue King, the combination of these two being really charming. A broad band of Coleus Taylor's Pet, a dark dwarf compact grower, admirably adapted for flower gardening, edged with Alyssum saxatile variegatum completed the design. Perhaps the most perfect bed of these mixed arrangements was formed with Pelargonium Bijou, carpeted with Viola Favourite and edged with Iresine Herbsti. The companion bed to the last described was even more beautiful, the arrangement being exactly the same. A very striking bed was planted with Pelargonium Lord Gifford and edged with P. Manglesi variegatum. The first mentioned variety in this bed is worthy of special note; it is in colour very bright scarlet, large flower and truss, very free, brighter and more vivid in colour than the old Vesuvius, which has stood unrivalled for hedding purposes so long. Another charming bed, and one that will daily improve until cut off by frost, is planted with Veronica Andersoni variegata, mixed with Iresine Herbsti, and Verbena venosa, edged with Iresine Herbsti, and a narrow band of Stellaria graminea aurea.

Very conspicuous was a bed of Pelargonium Amaranth, pink, edged with P. Manglesi variegatum in flower, which showed a marked improvement over other beds edged with this variety and the flowers removed. An effective and telling bed was formed with Pelargonium Manglesi variegata, Iresine Herbsti, Verbena venosa, and Viola Favourite, mixed together and edged with Iresine Herbsti. Conspicuous was a bed of Veronica Andersoni variegata carpeted with Verbena Hampton Court Crimson, edged with Ageratum Perle Bleue, a decided improvement on Cannell's Dwarf. This variety is very dwarf and compact, and does not appear to run back, the same as is the case with the above variety. Mr. Cannell of Swanley recommended Perle Bleue to Mr. Graham's notice, and it has proved all that it was represented to be. All who desire a good dwarf variety for flower gardening should procure this variety, for it is decidedly the best of all dwarf-growing Ageratums. A good scarlet Pelargonium that figured conspicuously amongst others was H. M. Stanley, Pelargoniums Lucius, Rose of Allandale, Surprise (full of bloom), and Warrior comprised some of the very finest used in the beds, while the dark Henry Jacoby was also strikingly effective. Two other mixed beds only will be noted, the first being planted with Abutilon niveum maculatum,

Iresine Lindenii, and Verbena venosa, edged with Iresine Lindenii; the other being planted with Tuberous Begonia Worthiana, recommended to Mr. Graham from Swanley, and tried for the first time. It is a beautiful scarlet variety, laden with bloom, and worth a place in all gardens where

latter being very full of flower, in fact more beautiful than they are generally seen, while the Violas have not grown too strongly to crowd the Pelargoniums amongst which they are planted.

Of all the beds in the garden it is clear that the public most appreciate



Fig. 29.—Lord Beaconsfield Raspberry. (See page 162.)

these beautiful plants do satisfactorily. The beauty of this bed was greatly enhanced by the groundwork of Viola lutea grandiflora major, a bright large yellow-flowered variety. Considering the dryness of the season it is surprising how well the Violas and Begonias are doing, the

those carpeted, for where one stops to examine any of the other beds hundreds surround and admire the carpet beds. It is not necessary to stay long to be certain of this, for the condition of the grass shows at a glance the effects of the traffic round these charmingly tasteful arrangements. Whatever may be said against carpet bedding by the advocates of hardy plants these will never replace it, and even if an attempt was made to employ them under the best arranged plan they could never produce the same beautiful effect as carpet beds when well done. The public enjoy and admire these carpet beds, and it would be simply madness to dispense with them for the purpose of employing hardy plants, however useful and beautiful they may be in their way. Certain positions are very useful for these plants, as can be seen by their adoption in these gardens, but the beds cut out in the turf as at Hampton Court are not suitable for them. One of the most beautiful carpet beds was planted with a raised oval bed of Echeveria Peacockii in the centre, at each end were groups of Pachyphytum roseum, and between these and the oval Alternanthera aurea nana, a beautiful bright yellow narrow-leaved variety, much superior to A. aurea both in colour and appearance. This is perfectly new, and was sent to Mr. Graham by Messrs. Cannell & Sons. At each end were a small circle filled with Kleinia Haworthii, a beautiful silvery variety that does not wash green by rain, but retains its distinct silvery colour, and very effective it is for carpet beds. The four central panels, two on each side the oval, were planted with Alternanthera amabilis. In the panel between these and the outer edge Leucophyton Brownii was conspicuous, while the four corners were formed with Abutilon vexillarium variegatum, the lines of the panels of succulents and Leucophyton being formed with Alternanthera grandis, Mesembryanthemum cordifolium variegatum forming the groundwork of the bed, which was edged with Echeveria secunda glauca and Sedum glaucum. It would be very difficult to determine whether the bed just detailed or the one to be described was the most attractive, both having beautiful designs and being so admirably finished; we came away undecided which really was the premier bed. The centre of this bed formed a Maltese cross planted with Sempervivum montanum, slightly raised, with an edge of Echeveria Peacockii, surrounded with Alternanthera grandis. Two small circles

half way between the centre and end of the bed were filled with "Cotyledon schaphyllus" margined with a narrow band of Alternanthera aurea. The panel between the circle and cross were planted with Pachyphytum roseum, the line being formed with Alternanthera amœna, while the one at each end of the circle was planted with Leucophyton Brownii. On each side of the circle at both ends were angular figures with circular ends pointing towards the centre filled with Alternanthera amabilis. The cor-

responding figures with the round end towards the centre were filled with *Alternanthera aurea*. The two central panels between these, with rounded ends to correspond, were planted with *Leucophyton Browni*. The groundwork running through the whole bed was the same as the bed above described, and the margins of the beds were also the same. This was a charming bed, and also another similar, in which *Leucophyton Browni* filled the outer panels in the place of *Alternanthera aurea*, with other similar slight alterations in the succulents and varieties of *Alternanthera* used, the groundwork, if I remember rightly, being formed of *Herniaria glabra*, the best of all green-foliaged plants for this purpose. Another very effective bed, which may be termed the snake bed from the fact that one formed the scrollwork on each side of the bed. The central scrollwork was formed with *Alternanthera aurea*, the corner pieces of this scrollwork being filled with *Alternanthera purpurea*, a very dark, effective, and distinct variety, while across the centre were small panels of *Iresine Wallisi*, a beautiful plant with dark foliage for carpet beds, being very dwarf, compact, and much after the style of *I. Herbstii*, but considerably smaller both in growth and foliage. The artistic scroll at the ends was formed with *Alternanthera grandis*, while a small panel of *Alternanthera amabilis* was conspicuous on each side *Iresine Wallisi*. The snake was formed of three bands, the centre one being *Alternanthera paronychioides major* with *A. purpurea* on each side, the groundwork of this bed being formed with a hardy plant, *Veronica incana*, and very beautiful and even it was, and contrasted admirably with the dark and yellow *Alternantheras* employed, the bed being margined very similarly to the two beds already described.

Another very effective bed had for its groundwork *Sedum glaucum* and *Mesembryanthemum cordifolium variegatum* figured and panelled with *Alternanthera grandis* and *A. paronychioides* and *A. aurea nana*, while *Leucophyton Browni* was principally used towards the ends, the centres being formed with "*Cotyledon schaphyllus*," *Kleinia repens*, and *Pachyphyton bracteosum*. The last bed that will be noted had circular centres formed with *Leucophyton Browni* and *Alternanthera grandis* alternately, panelled between with *A. paronychioides major* and *Mesembryanthemum cordifolium variegatum* margined all round with *Alternanthera*, the same as named above, the angles being filled in with *Herniaria glabra*, which also forms the remaining portion of the groundwork. All round the bed are a number of beautiful *J's* wrong side up planted alternately with *Mesembryanthemum variegatum* and *Alternanthera magnifica*, the last but one mentioned running all round the bed, which is margined with *Echeveria secunda glauca* and *Sedum glaucum*.

The number of carpet beds noted only form a very small portion of those to be seen at Hampton Court, which are in splendid condition, and have been admirably executed throughout. It is impossible to find a fault either amongst the plants, their arrangement, or the designs themselves. The beds are well filled, and have that excellent finish about them that renders these beds so striking and beautiful. They are decidedly better than I had anticipated finding them, considering the dryness of the season, which tells somewhat against these beds unless a large amount of labour is spent in keeping them well supplied with water. Many people are under the impression that carpet bedding cannot be done without using a large quantity of *Pyrethrum* (Golden Feather), which entails so much labour in pinching, yet in these gardens not one plant has been used.

It is difficult to describe these beautiful carpet bed designs to be thoroughly intelligible without figures, but all who desire can obtain them in Mr. Graham's little book, and the name of every plant employed, with other useful information, for the price of 1s.

It only remains now for me to thank Mr. Graham for his kindness, and congratulate him on the success he has achieved, and it is to be hoped that such an able and intelligent horticulturist may long be spared to carry out the work in which he is engaged. These notes would be incomplete without some reference to the old Vine, which looks as well as usual, and is again carrying about 1200 bunches. There is no fear of this famous old Vine suffering or being neglected under the care of Mr. Jack, who is a genial man and a good gardener.—B.

LORD BEACONSFIELD RASPBERRY.

WHEN a Raspberry is certificated by the Fruit Committee of the Royal Horticultural Society the variety must be considered meritorious. The variety in question was thus honoured in 1881, and excellent dishes of it have been exhibited during the present season. Messrs. Hieatt and Son of Covent Garden sent us fruiting sprays, some of them bearing over a length of 18 inches. The fruit is borne on long single axillary peduncles—that is, there is one fruit on a long slender stalk issuing from the axil of every leaf. That was the character in all the sprays we examined, but whether the peculiarity is constant we have no means of knowing. The fruit was large and of excellent quality, and the plant appears to be a vigorous grower. The specimens sent to us are fairly represented in the engraving, and the Lord Beaconsfield Raspberry appears worthy of being tried in gardens with other good varieties.

STOCKBRIDGE HOUSE, ULVERSTON.

STOCKBRIDGE House, Ulverston, North Lancashire, is an Elizabethan mansion of considerable age, and its surroundings show the great difference that exists between the ancient and the modern mansion

grounds. Here Nature has been assisted by Art to constitute a beautiful effect. We remember the mansion some thirty years ago as the residence of the Rev. Canon Gwilym, brother-in-law to Miss Strickland, authoress of the "*Lives of the Queens of England*," and as that lady resided much at Stockbridge House, no doubt much of her great work would be written there. Then no attempt was made to assist Nature by Art, but since the estate came into the possession of Miss Petty, its present owner, it has undergone a wonderful metamorphosis. When you enter the grounds you feel yourself isolated from the world, although but a stone's throw from the streets of Ulverston. Such is the privacy secured by a tasteful arrangement of trees, comprising Hollies, Yews, towering Pines, pink and white Hawthorns, Rhododendrons, Chestnuts, Walnuts, Laurustinus, Laurels, *Araucaria imbricata*, &c., the whole bordering a wide sweeping lawn of the greenest hue. Here and there are tastefully set out beds filled with choice varieties of flowering plants, and the larger trees have an inner fringe of flowering herbaceous plants, the whole being arranged with true artistic eye to harmonise colours. There are two large rockeries formed of limestone blocks taken from the neighbouring moors, and in the stones the rainfall of ages has wrought fantastic shapes. These rockeries are filled with a variety of Ferns, all of which are in a flourishing state, most of them collected in the district, the rockeries being bordered with *Echeverias*.

At the west end of the house is a group of nine giant forest trees—Elm, Beech, and Chestnut, which afford grateful shelter from summer's sun and heat. The viney is remarkably well stocked, Mr. Armer, the gardener, being a successful Grape exhibitor. They comprise Black Muscat, Golden Champion, Black Hamburgh, Trentham Black, Muscat of Alexandria, Mrs. Pince, Alicante, and Madresfield Court. In this house are also a number of excellently grown foliage and flowering plants. The Peach trees show a fair crop. The kitchen gardens are fully utilised, the walks being bordered by Apple trees, trained horizontally, and not above 30 inches high, full of fruit. A number of pyramid fruit trees, 8 feet to 10 feet high, are literally loaded with fruit. They comprise Hawthornden, Small's Admirable, Tower of Glamis, Warner's King, Cox's Pomona, Jolly Beggar, Cellini, &c. The vegetables are all freely grown, promising, and not a yard of soil seems to be lost in cultivation. The whole arrangement both of grounds and garden points a useful lesson of what may be accomplished by good taste on the part of the owner—for the lady is her own architect—when it is combined with skill on the part of the gardener.—R.

HERBACEOUS PLANTS.

IN looking over some beds of mixed herbaceous plants recently, with a view to remark on particular forms, or combinations of forms, I was in the first place struck with the grace and elegance which prevailed in all spots where what was termed spiry forms prevail. To give an idea of the forms I allude to, I may point to such as the *Liatris spicata*, the *Chelone barbata*, and some of the *Veronicas*, as those commonly termed *incana*, *carnea*, or *incarnata*, &c.; some of the *Lythrums*, *Dracocephalum speciosum*, *Anthericums*, *Aconitums*, &c. I am persuaded that many of our friends must have been struck with such forms, independent of colour; forms which perhaps convey impressions of airiness, sprightliness, and elegance. Now, begging pardon of our gorgeous *Geraniums*, *Lobelias*, *Verbenas*, and such like, these forms are not to be altogether despised; if we do not esteem them now, another generation is at hand which assuredly may do so.

If, then, such spiral forms prove a relief in beds of herbaceous, why not call in the assistance of forms in our modern massing system? The chief thing that wars against the practice would appear to be what may be termed a floral prejudice, arising from previous mental associations. The beautiful blue *Inula glandulosa*, one of the finest blues we possess—what a colour for bedding purposes! but no one could for a moment tolerate the enormous mass of Comfrey-looking foliage. But then *Phloxes* are not vulgar-looking; and many other herbaceous plants, when mixed by a massing system, would, I conceive, lose much of their mere border character.

There is the old *Chelone barbata*, at all times a dressy plant, and, I believe, a favourite with everybody. This elegant plant was highly esteemed half a century since. Why cannot this be worked up in a mass? It possesses high qualifications assuredly. Elegance of form, a character of foliage by no means commonplace, and lovely orange-coloured blossoms, which, dangling from slender pedicels, give a delightfully airy appearance to the whole; added to this, a minimum amount of foliage, both as regards individual size in the leaf and their collective amount. By-the-by, the latter is a great essential in flowers for bedding purposes; proportion here (as in most other things) being necessarily one of the elements of the beautiful as distinguished from the picturesque.

Another singular old herbaceous plant I may point to as possessing peculiar features for the massing system, I mean the old *Liatris spicata*, one of the most dressy and manageable things in existence, and no vulgarity about it. This excellent plant; although introduced to our gardens many years ago, is by no means general, but for what reason I cannot imagine. It has one most singular property; it is, as its name implies, a spike-flowering plant, but, contrary to the common mode of development in spike flowers, it commences blooming at the top of the spike and works downwards. Thus there are no raw-looking terminal points to wait for; its dressy character is shown at once in the upper outline. This plant appears to me to be peculiarly adapted to work up in a massing system; and I must continue to think that if our modern bedders would condescend to leap the barrier which separates our exclusives—the *Verbenas*, *Pelars*

goniums, &c.—and let them mingle with the throng, that such spiry forms would prove of infinite relief to those clumpy masses of blue, scarlet, &c., which it is extremely probable will soon be liable to innovation, whether from taste or fashion. This *Liatris* is a pale purple, which, if not of the most conspicuous character, possesses the merit of "freshness." The plant commences blooming in the middle of June by ordinary culture, but everybody knows that such plants, in order to carry out a special object, may be made to blossom a month earlier.

Now that I am about calling on old acquaintances, I may point to some of the *Veronicas*, as distinguished amongst spiry forms. There has been such a confusion of names in this genus, like the *Asters* and some others, that I am almost afraid to point to species applicable to the case in hand. Those I would name amongst spiry forms are such as are commonly called *V. carnea*, or *V. incarnata*, *V. incana*, and some other spiry kinds. I freely confess that their colours are not glowing, but their forms are elegant, and will be found of some service in the modern bouquet. At the time I write, we have some herbaceous beds with several of these *Veronicas* in blossom, and were they removed the beds would not carry half their present effect as to outline, &c. Some of the *Lythrums*, too, are spiry and elegant; but as to massing, there is so much of the ditchweed about their foliage as would give a vulgar appearance. They are,



Fig. 30.—*Pentstemon cordifolius*.

however, of much utility in the mixed herbaceous bed or border. The old *Draccephalum speciosum* is of this character, but would not come in with any massing system on account of its extreme lateness. This, like the latest *Asters* and some late *Phloxes*, is of much importance in borders, where it is desirable to carry out gaiety to the very edge of winter. The *Anthericum*, too, especially that with such slender flower stems and narrow grass leaves, and which used to be called either *A. liliastrum* or *liliago*, is a most genteel-looking plant of the spiry class; and from its pure white and lengthened flowering might be worked up in mixed masses where white was requisite. It has a beautiful effect near the margin of herbaceous or shrub borders.

If it be argued that such herbaceous plants grow too high, why they may be readily dwarfed by being potted and the pots plunged. One of the chief causes of the decadence of the herbaceous tribes was doubtless the neglected and exhausted state in which they but too frequently appeared previous to what is termed the bedding system becoming general. But *Phloxes*, for instance, in an old shrubby border, probably full of tree roots, and those receiving annual culture, are widely different. The former, with a profusion of lean stems, betokening exhaustion, with flowers of half-size and little colour, and which, of course, prematurely cease blossoming; the latter bold-looking, healthy, showy, and enduring. Indeed, the same may be said of most of these tribes, being like many a pot plant, although long known, when placed under high culture and well brought out.—N. R.

PENTSTEMON CORDIFOLIUS.

A PRETTY half-shrubby hardy plant of spreading habit, having downy stems. The leaves are small, green, shining, cordate-serrate. The flowers grow in large, leafy, one-sided panicles at the end of the shoots; the calyx is covered with glandular hairs; the corolla nearly $1\frac{1}{2}$ inch long, the tube almost cylindrical, the upper lip straight, the lower lip three-parted; colour, a rich dull red. Suitable for rock, banks, or against a wall. In-

troduced from California, mountains of Santa Cruz, in 1848. Flowers from June to October.

JOTTINGS FROM CLOVERLEY.

A DAY in the country occasionally certainly does those good who live in the neighbourhood of a town where everything is covered with soot, and vegetation has a difficulty to live. Some time ago an opportunity presented itself of visiting Mr. Heywood's beautiful home in Shropshire, where the luxuriant growth of the trees and shrubs, during the three or four years that had elapsed since a former visit, astonished me. I was aware that trees and shrubs flourished in such a genial home, but was scarcely prepared to find towering young specimens, perfect in health and shape, that had added yards to their stature. It is useless to plant in the neighbourhood of a smoky town the choicer forms of Conifers and shrubs, for they would only linger for a year or two, and during the greater portion of that time would be unrepresentable, miserable objects.

I could not help thinking during a quiet walk early in the morning that the Conifers and shrubs that were so freely planted twenty years or more ago would never look more beautiful than they do at the present time. With many shrubs and fine Conifers, age does not, in my estimation, improve their appearance. The beauty and luxuriance of youth which is so characteristic appears to pass away, and year by year they are very liable to grow thin, and thus become less interesting and beautiful after they once attain a certain stage. Symmetrical specimens of *Wellingtonias*, *Cupressus*, *Piceas*, and others, from 15 to 30 feet high, well furnished and thick, are noble ornaments about the pleasure grounds, whether viewed individually or collectively. Large quantities of these pyramidal-shaped trees massed together have, no doubt, a formal appearance, but in the grounds in question, what would be objectionable in this respect is broken by a great diversity of vegetation. For instance, large Oaks and other forest trees freely exist, while there are large round clumps of Portugal Laurels, *Rhododendrons*, Ghent Azaleas, and others, which add change and diversity to the scene, thus rendering the grounds attractive at various times and seasons.

It is surprising how *Rhododendrons* flourish as they do about the grounds and park, for in many places they have only a few inches of fertile soil for their roots to occupy on the surface. Beneath is a solid bed of hard clay, yet it would be impossible to find more healthy or luxuriant growth. When these plants are lifted it is impossible to get any depth of ball, the roots all being in a thin shell upon the surface. The secret of success lies in the fact that there is no digging about the roots to destroy them, as is generally the case in the majority of gardens. The plants spread their branches upon the grass, and, being thick, the foliage that falls from them and the surrounding trees is allowed to remain and decay. This not only keeps the surface roots moist during dry weather, but the decayed matter soon becomes a mass of roots, and proves just the material in which these plants make themselves at home. Whether upon light or heavy soil nothing better for *Rhododendrons* can be freely incorporated with the soil than large quantities of leaf mould in a half-decayed state. I have repeatedly proved that this prevents plants suffering from drought to a very large extent on light sandy shallow soils. It is surprising how moist the surface roots are kept, and how quickly they work into a good layer of decayed vegetable matter spread upon the surface in spring when the ground beneath is moist. When this is not done the surface roots are partially or totally destroyed during long spells of dry hot weather, especially if the plants have not much foliage.

Amongst the young plants of *Picea nobilis* I observed a great dissimilarity, some of them having a much more beautiful glaucous hue than others, being so distinct in this respect that at first I thought them distinct varieties. If one lot of plants had been grafted and the others seedlings, the marked difference in this respect might easily have been accounted for, but I suppose it is only natural that seedlings should differ as much in *Piceas* and *Cupressus Lawsoniana* as in any other plant.

From a distance the luxuriant mass of *Cupressus*, *Piceas*, Yews, *Abies*, *Wellingtonias*, Portugal Laurels, *Rhododendrons*, and other dark-foliaged evergreen shrubs and Conifers had a somewhat heavy sombre appearance. This could be wonderfully improved by the introduction of Golden Hollies, Yews, *Retinosporas*, and other light and yellow-foliage plants. *Acer Negundo variegata* does splendidly. Why not introduce more of it, for it is one of the most beautiful trees that can be grown for positions in which it will do well? Probably the row of symmetrical young plants that I noticed elsewhere of *Retinosporas plumosa aurea* and *Taxus elegantissima* are intended for this purpose, where they would be more suitable than in the position they now occupy. They have only been nursed in the richer soil of the kitchen garden until they attained some size, and are intended for some more prominent position. *Cupressus Lawsoniana erecta viridis* was growing alternately with the above, and most handsome it is; but those who grow it must be careful of heavy falls of snow, for it will open the plant by weighing down its branches and thus spoil its beauty. These were truly magnificent young plants, the two former resembling pillars of gold 5 or 6 feet high.

The last thought about trees and shrubs was suggested by the leader in the *Journal* fully twelve months or more ago. At Cloverley, as well as in hundreds of other gardens where vegetation is very luxuriant, the trees and shrubs are becoming crowded. This is merely alluded to in the hope that it may be the means of inducing some to recognise the evil of allowing shrubs and trees to injure one another in this way. It is useless to continue thinking that they should be thinned, action is needed without delay. If plants are too large for lifting the axe should be applied, not grudgingly, but liberally yet judiciously. Unless this is done soon in the

gardens under notice many noble young specimens will be ruined. The trees and shrubs certainly look well, mingling together their luxuriant branches and fine foliage, and it seems a pity to touch them, but they will not remain in the same condition as they are now. If noble trees are wanted, and the future beauty of the grounds considered, some sacrifice must be made; if not, in a few years the trees will be mere mop poles, bare and unsightly at the base. Every plant should have room to display its true character without being encroached upon by its neighbour, for one good plant duly proportioned is more pleasing than a hundred loose badly developed specimens. In exposed positions, Hollies, or whatever evergreens are found to do well, should be freely cut to keep them compact and thick, with plenty of light and air surrounding them, and then they will be found to brave storms with little or no injury.

Thinning should be done judiciously, for somewhere in the grounds alluded to an old Oak was very noticeable, from the fact that his gigantic branches were spreading over and smothering some common Laurels and a flourishing young Cupressus Lawsoniana or two. My advice in this case, after studying the position carefully, is, Spare the giant even if he destroys the smaller members, for there are plenty of them, and if not, they can be replaced in from ten to fifteen years. The Oak, when once down, could not be replaced, even in a century, by the most luxuriant growth.

The collection of Ivies on the outer wall of the kitchen garden attracted my attention during a previous visit, and upon returning home I sought out a wall upon which I could plant a collection. Before doing so, however, I thought again about the matter, as my experience with choice kinds in an exposed position had not been satisfactory, and so determined to plant the common Irish Ivy, which is the best of all green varieties when well managed. Of small marbled cut-leaved forms, Caenwoodiana has proved hardy, a good grower, and one that retains well its small but beautiful foliage. The two should never be mixed on the same wall, for the first-mentioned would smother the latter, and if not allowed to do so the wall would present an uneven appearance. Many of the variegated and fancy varieties, although strikingly beautiful, soon become thin and bare at the base, and if they do this at Cloverley, what would they do in smoky exposed positions where the air is polluted by sulphuric acid?

The flower garden is a large geometrical design laid out with Box and gravel walks, in close proximity to the mansion, and was certainly very neat. When carpet bedding was in its glory I used to admire this style of gardening, and thought it the most lovely of all. My views have changed since then, as carpet bedding, according to my idea, should only be admitted for the sake of change and variety, unless the wishes of others compelled compliance. My idea of what a garden ought to be, is one in which there is a little of everything from which a basketful of the most fragrant flowers can be gathered at will. I have before my eye a model garden in which there is always plenty of flowers from early in the season until they are cut down by frost. The secret of success lies in a judicious selection, and a number of really good plants in preference to a greater variety, that would only add confusion and give a much less display. But there is considerable variety in the gardening at Cloverley, and the carpet bedding is very suitable for the place it occupies, and looks much better than if the beds were filled with a mixture of herbaceous plants. There is a garden devoted to Roses, a small rockery of Ferns for a change, and a large garden for herbaceous plants.

I must just note, in concluding, a large house of Black Hamburg Grapes that were very good at the time of my visit. Many other things of interest might be alluded to, but I remember reading a full account of this fine garden in your pages a few years ago. It is evident that great credit is due to the owner, as well as to the gardener, Mr. J. Jones, for the former must have a strong love for gardening, or this large and beautiful place would not have been in the admirable condition in which I found it.—V.

WHITE FLOWERS IN GARDEN DECORATION.

IN the various improvements which florists' flowers have undergone the last few years, it must be admitted that but little has been done to obtain things purely white; the dazzling scarlet, rich purple, or gay yellow, have been more sought after than the simple colour whose claims to our notice it is my purpose here to call attention to; and as the number of plants blooming white is no ways meagre, a few remarks on the disposal of them may not be out of place.

I should think there are few visitors to a flower garden by twilight but who have been struck by the gay appearance a large plant of the double white Rocket has at that time; a large white Campanula (whose name I cannot call to memory), is equally conspicuous, as also are all other free-blooming white flowers, while their more gay brethren of the blue, red, and other dark hues, appear little different from the foliage they wear; if you go into the greenhouse the effect is the same, the white Azalea, pale-coloured Cineraria, and similar things attracting your attention. Now my readers will be saying, "We know all that, but we seldom visit such places at that time; but what has that to do with daylight gardening?" Have patience, and we will explain. We have said that white looks better than other colours in the dark, it is because it forms such a strong contrast to all around it—the foliage, the ground, or it may be the turf, nay, even the very atmosphere wearing a murky aspect, tend to strengthen that contrast, and show its perfection to greater advantage. Now, the same thing, or nearly so, may be done by daylight, and we will attempt to explain how and when it may be made to do so.

In very many gardens there are more or less of shrubby borders

having a front of flowers, and as such borders are generally at some distance from the house and principal walks, and their appearance at a distance is an important matter; in such borders, we say, plant abundance of white flowers—as Dahlias, Roses, Phloxes, Rockets, and similar things. The reason is obvious, the background of shrubs, &c., being higher, show the white blooms of such things to every advantage, while it is only on closer inspection (that is, when the eye takes a more limited view), that deep-coloured flowers look well at all. Let anyone dubious of this matter just examine a scarlet and a white Thorn closely, and then walk a distance from them and look again; the white one which looked well, even on close inspection, will look equally so as far off as the eye can discern colours at all; not so its companion, a very short distance is sufficient to confound the bloom and foliage. Now, this is just the same if a pink, red, or blue flower is planted in front of a mass of foliage of other things, the eye being unable to separate these colours from the green against which they are placed, they are consequently lost to view. Next to white are those pale colours approaching nearest to it, even yellow and white with a mixture of other colouring, but it is surprising how much the latter detracts from the effect white would have alone. How gay an orchard of Cherry trees in bloom looks at the distance of a mile, compared to one of Apples at the same range of view, the mixture of pink neutralising the latter; look also at an Elder tree, its bloom forming a strong contrast with its rich green foliage. The Gueldre Rose might form another example, if such were wanting, but it is hoped we have said enough to call the attention of your young friends to the subject; and if they have borders backed by shrubs or trees, or even where the eye of the spectator passing over them rests on a piece of turf or other dark body, we say plant white and other light-coloured flowers with unsparing hand. We should certainly not discard all others. What we mean, is to plant in such a situation more than the usual share of such colours, especially if appearance at a distance be an important point. The same remark holds good to massing or bedding-out in flower gardens where the beds are cut out on grass, which forming the base or background, the effect is much the same, though in a less degree than the shrubby border above in the flower garden. Other circumstances render a variety of colours indispensable, but it is to be deplored that in the directions generally given as to the planting of such beds, the background or rather groundwork seems to be entirely overlooked; certainly a set of geometric figures cut in grass ought not to be planted the same as if they were separated by gravel walks; in the former case white and kindred colours should be more liberally dealt out than in the latter, or, to speak more plainly, the colour approaching nearest to that of the gravel ought to be most sparingly used.

While on this subject I may remark, there is only one place where white flowers are out of character—that is, in a Dutch flower garden, where the walks intersecting the beds are laid with white shells; in such places the walks generally occupy one-third, or even one-half, of the entire area, and the bright glare they present to a summer's sun renders anything more of that colour superfluous. In all such gardens we would say, plant deep coloured flowers in greater profusion; and if for variety's sake you must have a white bed, edge it with something dark, as scarlet Verbena or blue Lobelia—it will not be so likely to blend with the walks. When gravel, sand, brickdust, or ashes are used for walks, we would say, use sparingly those colours approaching thereto; if, as we have said above, you wish to introduce one, let it have a rim of something blooming the reverse. But as this is foreign to the subject we have in hand, we shall say no more than again impress on our readers to remember, that if they want to make a flower border (backed by anything except a chalk cliff or whitewashed wall) look well at any distance exceeding fifty yards, they must plant abundance of white and other pale-coloured flowers; and where a great breadth of turf separates flower beds on the lawn, there likewise to plant the same colours in as great profusion as attention to other matters will allow them to do.—S.

THE ORCHIDACEOUS PLANTS OF HEREFORDSHIRE.

[Read at the Woolhope Naturalists' Field Club by C. G. Martin, Esq., President.]

(Continued from page 137.)

15, *Gymnadenia conopsea*, or Fragrant Orchis.—This charming flower may be found pretty plentifully within a few miles of Hereford. It is known readily by its rose pink colour, and its strong delicious perfume. I have for many years gathered it in a damp meadow near Aconbury Hill. It may be found, very sparingly, in most parts of our county during June and July, though it is singularly little known and appreciated. Some of the localities named for it are the Great Down, Llanwarne, St. Weonards, Orcop, Fownhope, and Tedstone Delamere. Mr. Lees found it at Colwall and West Malvern. Mr. Ley reports it to grow in a meadow at Tram Inn, and Sir George Cornwall told me, some years ago, that it grows at Moccas. It has also been found in the Olchon Dingle, and the head of Crasswell Valley. The Rev. R. H. Williams informs me that it is common at Byford.

16, *Gymnadenia alba* is extremely rare in this part of England, though it is not infrequent in grassy mountain pastures, especially in the north. Its flowers are very fragrant, and cream-coloured. They grow in a somewhat dense spike, and the stem is rather shorter than *G. conopsea*. Mr. Ley found about thirty specimens in a single spot in June, 1880, growing in company with *Habenaria bifolia*, in a hill-side meadow at the head of the Gwynne Valley. I found one specimen only in June, 1868, in a meadow near Aconbury Hill, growing in company with *G. conopsea*. I have often searched for it since in the same place, but have not found it again. I showed it to the late Mr. Flavell Edmunds, who called it *Habenaria alba*, or Small White Butterfly Orchis. Bentham gives it the same name.

17, *Habenaria chlorantha*, or Great Butterfly Orchis, is a singularly handsome plant. It has a long loose spike of greenish white flowers, is well known, and is generally found in damp woods throughout the county. It is reported from every district. The larger nocturnal Lepidoptera are much attracted by its strong sweet odour and the abundance of nectar which it yields.

18, *Habenaria bifolia*, or Lesser Butterfly Orchis, is similar in outward appearance to the last, though smaller. Bentham and some other botanists regard them as varieties of each other. But a close examination reveals many permanent differences, and Mr. Darwin observes, "I cannot doubt that the Larger and Lesser Butterfly Orchids are distinct species, masked by close external similarity." It is found throughout our county, and it is needless to particularise localities. Neither of these plants suggests the idea of a butterfly, and it is difficult to understand how they ever became so designated.

19, *Habenaria viridis*, Frog Orchis.—There appears to be even less reason for calling this the Frog Orchis than there is for naming the two last-mentioned flowers the "Butterfly." It is a small plant, and is very inconspicuous. Its stem is 6 or 8 inches high. Each floret has a green helmet and a greenish brown lip. It is not uncommon on pastures, chiefly in hilly districts, but probably its colour prevents its being readily observed. It has been reported from almost every district in our county.

20, *Ophrys apifera*, Bee Orchis.—There is no mistaking this charmingly pretty flower. The stem varies from 6 to 12 inches in height, and generally bears a few distant florets. The ovate sepals, which resemble wings, are generally of a delicate lilac tint; the petals are small and narrow, sometimes the same colour as the sepals, and sometimes greenish white; the lip, which looks so like the body of a bee, is brown, variegated with yellow, and is soft and velvety.

"The Orchis rare with varied beauty charm,
And mock the exploring bee, or fly's aerial form."

This plant is not common in our county, and, unfortunately, where it grows it is in danger of being exterminated by too zealous or too selfish collectors. Hence it is undesirable to mention the localities where it may be found. It may be looked for on limestone or cornstone pastures and banks, especially the latter. It grows in great abundance on the chalk downs of our southern and eastern counties. It is a noteworthy circumstance, and deserves special recognition, that *O. apifera* has been, during this season of 1885, abnormally abundant, and has been found in several new localities in our county. From one place alone more than fifty plants were brought to me, and the gentleman who found it said he "could have gathered more than a hundred flowers in a space not more than five yards square." (Numerous specimens were produced).

21, *Ophrys muscifera*, Fly Orchis.—This plant is much rarer than the Bee Orchis. It has been found on the Great Dward both by Mr. Purchas and Mr. Ley. It was found in 1850 upon the Little Dward. Mr. Ley discovered it in 1880 on Coppet Hill, and again in 1883. Mr. Watkins has picked several flowers on the Great Dward this year. There are no other well authenticated localities for this pretty Orchis in our county. I have gathered it frequently, year after year, in Surrey, at the end of May and the beginning of June. Its florets are about the size of a common house fly. The greenish sepals resemble the wings, and its slender lateral inner sepals are not unlike the antennæ of an insect; while the narrow brownish purple lip, which is two-lobed at its extremity, has a pale blue spot in the centre.

These are, so far as I know, all the Orchidaceous plants known in our county. I have seen it stated in a botanical work that "*O. militaris* is common in Buckinghamshire, Oxfordshire, and Herefordshire." I think that is an error so far as our county is concerned. Neither Mr. Purchas, Mr. Lees, Mr. Lingwood, nor Mr. Ley have any record of it, and the geological formations of the other counties named differ widely from ours.

That the Orchidaceæ are the most interesting of all our native wild flowers is almost a truism. No other class has elicited so much study and research. None others show so much contrivance and design; such adaptations of means to ends. Some of them are extremely sensitive; even the touch of a human hair is enough to cause an immediate response. Wordsworth, "The Poet of Nature," might have been watching an insect visiting a *Listera ovata* or an *O. pyramidalis* when he wrote the well-known lines—

"It is my faith that every flower
Enjoys the air it breathes."

There are peculiarities in the structure of Orchids which distinguish them from all other classes in the floral kingdom. The quaint and curious mimicry of natural objects—from which so many of them take their names—enhances their singularity, and adds not a little to the zest with which the lover of nature searches for them. The most distinguished naturalist of the present century, Professor Darwin, after twenty years of close, sustained, patient study of them, wrote one of the most fascinating books about them. The Duke of Argyll, in his "Reign of Law," commenting upon Darwin's discoveries among the Orchids, observes, "the complication and ingenuity of these contrivances almost exceed belief. 'Moth traps and spring guns set upon these grounds,' might be the motto of these Orchids. There are baits to tempt the nectar-loving Lepidoptera with rich odours exhaled at night, and lustrous colours to shine by day; there are channels of approach along which they are surely guided so as to compel them to pass by certain spots; there are adhesive plasters nicely adjusted to fit their probosces or to catch their brows; there are hair-triggers carefully set in their necessary path, communicating with explosive shells, which project their pollen-stalks with unerring aim upon their bodies. There are, in short, an infinitude of adjustments, for an idea of which I must refer my readers to Mr. Darwin's inimitable powers of observation and description."

But the Orchidaceæ present mysteries as well as wonders. Most of the species which comprise the genus "*Orchis*" exhibit a most curious, and, as yet, unexplained anomaly. They all possess well-developed spur-like nectaries, which seem to imply the secretion of nectar, yet in none of them has the smallest bead of nectar ever been found, even under the microscope. They are favourites with insects, especially the Lepidoptera. Darwin gives a list of twenty-three of these beautiful creatures which he had observed

visiting various Orchids. Why, then, do insects visit them so freely? What is the attraction? Sprengel, knowing the absolute absence of nectar, calls these Orchids, "*Scheinsaftblumen*," or Sham-honey flowers. That is, he believes that these plants exist by an organised system of deception. Darwin vigorously combats such a theory, and retorts, "He who believes in this doctrine must rank very low the instinctive knowledge of many kinds of moths." (page 46). He himself suggested an explanation, but his severely accurate mind was not quite satisfied with it. It remains a study of much interest, and worthy of the study of our entomologists.

Thus it is not only botanists who are interested in our Orchidaceous plants. They possess almost as many attractions for entomologists. Even the most casual observer can scarcely fail to be charmed by their beauty; and those to whom mental effort is a pleasure may find the richest delight in investigating their wondrous mechanism, and trying to solve the mysteries which environ them. But to every lover of nature, and that includes every member of the Woolhope Naturalists' Field Club, they illustrate and emphasise the truth, so finely expressed by Pope—

"All are but parts of one stupendous whole,
Whose body Nature is, and God the soul."

* * * * *

All nature is but art unknown to thee,
All chance, direction which thou canst not see;
All discord, harmony not understood,
All seeming evil, universal good."

"FAMILIAR TREES."

UNDER this title Messrs. Cassell & Co. are now issuing a work by Mr. G. S. Boulger in monthly parts, and judging by the first part now before us it is likely to prove an interesting production. We have little popular and reliable literature in reference to our tree flora, and this renders Mr. Boulger's work the more acceptable, especially as it is well known that he has given much attention to the subject for some time past. It is essentially of a popular character, but much matter of technical interest is also introduced. Two coloured plates are given with the first part, representing an old Oak, and two acorns and Oak apples, the second plate being much more satisfactory than the first, though both are rather better than the majority of these small chromo-lithographs.

The following extract will give an idea of the style adopted:—"Few of our trees have a wider geographical range than the Oak. Whilst the great order of broad-leaved trees to which it belongs, the Cupuliferæ—those, that is, that have their nut-like fruits enclosed in a more or less leafy husk, 'involucre,' or cupule (the cup of the acorn)—is distributed throughout the temperate regions of both hemispheres, the Oaks, of which there are nearly three hundred species, are almost confined to the northern. Many forms are well known to us in our plantations, or by their products, such as the Turkey Oak (*Quercus Cerris*), the Evergreen Oak (*Q. Ilex*), the cork of *Q. Suber*, the galls of *Q. infectoria* and other Levantine species, the kermes from *Q. coccifera*, the cups of *Q. Ægilops* imported as valonia, the quercitron bark of the American *Q. tinctoria*, and that of many other species used in tanning. But as a native of Great Britain we have but one distinct species, though two, if not three well-marked varieties are generally recognised. The English Oak (*Q. Robur*) ranges from the Urals and the Caucasus, from Mount Taurus and Mount Atlas, almost to the Arctic Circle, growing at an altitude of 1350 feet in the Highlands of Scotland; its limit nearly coinciding with that of successful Wheat cultivation. Vast forests of Oak covered the greater part of central Europe in the early ages of history. It was the favourite timber of the Greeks and Romans; with it the Northmen built their long ships, and the Anglo-Saxons such churches as that at Greenstead in Essex; and with it was smelted the Sussex iron which supplied the cannon of Elizabeth's navy. When in sheltered situations, or massed together in forests, it may reach a height of from 60 to 100 feet, with a straight stem of from 30 to 40 feet, and a girth which is commonly 8 or 10 feet, though many fine old trees are from three even to seven times that circumference. In exposed situations it is generally shorter and less straight in its growth, and then also has the hardest wood, though this may be rather a characteristic of one of the three varieties than the effect of situation.

"Of these varieties, the White Oak, the *Chêne blanc* of the French (*Q. Robur pedunculata*), is the most abundant in the southern and midland counties. Its leaves have no stalks, and are only downy on the under surface when young; while its flowers, and consequently its acorns also, are generally two or more together on long peduncles. It reaches a less height, but is said to be less liable to the defects known as 'cup' and 'star-shake' than the sessile-fruited varieties.

"These last are commonly united under the names Durmast Oak and *Q. Robur sessiliflora*, which should be applied to distinct forms. They agree in having stalked leaves and stalkless acorns; but the true *Q. sessiliflora* is most abundant in the north and west, its fine straight stems being seen at the best in the Forest of Dean; whilst the true Durmast Oak (*Q. pubescens*) is a dark-fruited variety, occurring in the New Forest, the under surface of the leaves of which remain downy, and stay longer on the tree, hanging in melancholy russet late into the spring. Its timber is of inferior quality, and resembles chestnut in appearance, and, it is said, in being distasteful to spiders. Parts of the roof of Westminster Abbey are said to be of this cobweb-proof material."

THE TAUNTON DEANE SHOW.

IT was in no spirit of flattery that one who has perhaps as great a knowledge of provincial flower shows as anyone in England said at the luncheon

after this year's Exhibition that he knew of no summer show that could compare with that which has been annually held at Taunton, as there is certainly no place where a show is regarded in a more important light than in this beautiful county town of Somerset, where all sorts and conditions of men, from the aristocratic county families to the humblest cottager, consider themselves interested in it, and do their best to make the Show a success. This year was no exception to the rule, nor to that which has, happily for the Society, prevailed for many years—a fine day for the Exhibition. The day before was as bad as well could be—a gale of wind with heavy driving showers of rain; but towards evening it cleared off, the glass rose, and with it the spirits of the Committee and Secretary, and Thursday turned out to be as fine a day as anyone could wish, the perfection of a day for a show—the sun not too hot, a slight breeze and not too much of it, and hence a large and fashionable attendance filled the Vivary Park, where the Exhibition has always been held.

The Exhibition was contained in five tents, one for the open classes of plants and flowers, another for the nurserymen's classes, one for fruit and vegetables, one for cottagers, and one for table decorations, &c. With one exception these tents were all well filled. The Committee had made some alterations in the open classes, and they do not seem to have answered; for although in quality nothing could be finer there were not the same number of exhibitors as in former years—notably last year, when there was an exceptionally grand show. In all other respects the character of the Exhibition was fully maintained. The excellence of some of the plants was remarkable, while unbounded surprise was expressed that in such a season as we have passed through the hardy fruits and vegetables should have been exhibited in such profusion as they were and of such first-rate quality. Especially does the cottagers' tent call for admiration. Not only were there some very pretty designs of flower gardens well worked out, but the vegetables were surprisingly fine and clean. There never were finer indoor fruits exhibited at this Show, while the table decoration of Miss Cypher was, I think, the very best I have ever seen from her, and I have seen a great many of her exquisite arrangements.

In giving an account in detail of the Show, it is impossible that I can do more than note the principal exhibits, and such as I think possess general interest.

In the open class for twelve stove and greenhouse plants in flower, W. Cleave, Esq., of Crediton was first with a very fine group of well-flowered plants, consisting of *Erica æmula*, *Allamanda Hendersoni*, *Ixora Duffi*, *Lapageria alba* one mass of bloom, *Erica Marnockiana*, *Dipladenia amabilis*, *Stephanotis floribunda*, *Phenocoma prolifera*, *Lapageria rosea*, *Eucharis amazonica*, *Erica Farriana*, and *Ixora Prince of Orange*. Mr. James Cypher was second, but I imagine his large plants were doing duty elsewhere. In the class for six stove and greenhouse plants in flower Mr. Cypher was first with *Erica Irbyana*, *Allamanda nobilis*, *Ixora Pilgrimi*, *Phenocoma prolifera* Barnesii, *Erica Thompsoni*, and *Statice profusa*. Mr. Cleave was second with *Allamanda nobilis*, *Erica Irbyana*, *Dipladenia amabilis*, *Clerodendron Balfourianum*, *Erica ampullacea*, and *Bougainvillea glabra*. In the class for eight fine-foliage and variegated plants Mr. Cleave was the only exhibitor. He showed some grand plants of *Kentia Belmoreana*, *Croton Weismanni*, *Cycas revoluta*, *Croton Warreni*, *Latania horbonica*, *Croton Williamsi*, and *Areca lutescens*. In the class for four Orchids in bloom Mr. Cypher was the only exhibitor, and had good plants of *Saccolabium Blumei* major, *Cattleya superba*, *Dendrobium Denarii*, and *Lælia purpurata*. In the class for new plants in flower the Rev. H. Dusanay was first with a plant unknown to me—an *Amaryllid* from the Cape having large drooping flowers of salmon-orange, apparently of the same class as *Belladonna*, as the flowers are produced before the leaves. Mr. Cleave was first with *Alocasia Sanderiana*, a very remarkable variety with very deeply cut leaves veined with white.

Zonal Pelargoniums are always exhibited in good form at Taunton; the plants are compact and full of bloom, and do not show so much of the framework by which they are supported as in many places. One exhibitor, however, Mr. H. Geddings, swept the board in both the open and amateur classes. In the class for eight Zonals he showed *Leviathan*, Lord Gifford, *White Vesuvius*, De Lesseps, Pioneer, Mr. McIntosh, and Madame Vaucher. In the class for Nosegays he showed *Emily*, Bonfire, Lizzie, David Thomson, Minnie Dobbs, and Wellington. In the class for six double Pelargoniums he had Mons. Langier, Wonderful, Mill, Rambler, and C. H. Warren. Mr. Tollie was an equal first. He also took the prize for the only set exhibited of those now almost obsolete plants the variegated-leaved Pelargoniums—obsolete as far as exhibition plants are concerned, and yet what a furore there was for them at one time. Such are the caprices of fashion. At one time collections in large numbers used to be shown everywhere, but now one rarely sees one put up. Some excellent plants of Begonias were exhibited by Mr. Gedding—viz., *Vesuvius*, Lady C. Stackpole, Mrs. W. Marshall, Beaulieu, De Lesseps (double), Snowdrop (white), Wonderful (very fine), Mrs. Perin. A high-coloured variety called Lady Chesterfield in the second-prize lot was very fine and deservedly admired. There was as usual a goodly lot of *Petunias*, *Phloxes*, *Cockscombs*, *Azaleas*, &c., but these do not call for any particular remark, save that they were wonderfully fine considering the drought and the scarcity of water, and pass on to those classes which are of more general interest—notably *Roses*, which were very good, considering the time of year and the excessive heat, and were chiefly remarkable for the fact that Messrs. Mack & Son came all the way from Yorkshire to compete. This is reversing what has been the case, the southern growers going northwards, and it is a fair return for them to come south. Of course they were at a disadvantage, as Messrs. Keynes & Co. were so much nearer home, but their exhibits were none the less excellent. Messrs. Keynes, Williams & Co. were first in the class for forty-eight varieties with *Comtesse d'Oxford*, *Madame Nachury*, *Maréchal Vaillant*, John Hopper, *Comtesse de Serenye*, *Abel Carrière*, *Star of Waltham*, *Black Prince*, *Baroness Rothschild*, *Charles Darwin*, *François Michelin*, *Alfred Colomh*, *Eugène Verdier*, *Duke of Connaught*, *Madame Hippolyte Jamain*, *Charles Lefebvre*, *Marquise de Castellane*, *A. K. Williams*, *Louis Van Houtte*, *Madame Eugène Verdier*, *Madame Victor Verdier*, *Catherine Soupert*, *Horace Vernet*, *La Reine*, *Camille Bernardin*, *Marguerite de St. Amand*, *Etienne Levet*, *Marie Rady*, *Reine du Midi*, *Sénateur Vaisse*, *Wilson Sandners*, *Ferdinand de Lesseps*, *Madame Marie Verdier*, *Prince Camille de Rohan*, *Barthelemy Joubert*, *Edouard Morren*, *Dr. Andry*,

Queen of Queens, Wilhelm Krelle, Niphetos, Baron Hausmann, La France, Madame Charles Wood, Merveille de Lyon, and Xavier Olibo. Messrs. Mack and Sons were second. In the class for twenty-four trebles Messrs. Keynes, Williams & Co. were first, and Dr. Budd of Bath and Messrs. Mack & Son equal second.

Dahlias were not largely but well shown, Messrs. Keynes, Williams and Co. keeping well up the old reputation of the Salisbury firm. In the class for twenty-four they were first with Mrs. Langtry, Imperial, Miss Cannell, seedling, Mr. J. C. Reid, John Hinton, Buttercup, Prince Bismarck, Mrs. P. Laird, seedling, Hope, Mrs. Douglas, Mrs. Rendle, Henry Weston, Lord Chesterfield, F. J. Saltmarsh, James Huntly, Clara, seedling, Mrs. Freeman, Henry Austin, Joseph Ashby, Michael Saunders, and Mr. J. Downie. Mr. Latimer of Staplemore was second. In the class for twelve the same gentlemen took prizes in the same order. Messrs. Keynes, Williams & Co.'s blooms were Miss Cannell, James Oldhis, Mrs. Sefford, seedling, Mrs. Freeman, John Heushaw, Joseph Ashby, Charles Wyatt, Mrs. Dodds, Henry Walton, Hope, and Falcon. In the class for twelve Fancies the same exhibitors occupied the same position. Messrs. Keynes, Williams & Co.'s flowers were Peacock, seedling, Rev. J. M. B. Camm, seedling, Madame Joubert, Gaiety, Professor Fawcett, Chorister, Charles Wyatt, Mrs. Saunders, and Henry Eckford.

Gladioli are always a grand feature of the Taunton Show, for the greatest of Gladioli growers live in the neighbourhood—Messrs. Kelway & Son, *facile princeps* of all professional growers; in fact there is no one in England that comes within a long distance of him both in the extent of his culture; and Mr. Dobree of Wellington, who is without doubt the largest and most successful amateur that we have and the raiser of a number of good seedlings. Messrs. Kelway & Son exhibited a grand stand of 100 blooms not for competition, amongst which were some new varieties, for a few of which certificates were awarded—notably Earl of Idlesleigh and Prince Henry. Mr. Dobree was the only competitor in the class for twenty-four, and he besides exhibited a beautiful collection of 100 varieties. How very much more forward, by-the-by, are they in Somerset to us in the east of England. I have not got a dozen in bloom in my own garden. As Mr. Dobree is so successful a cultivator I give the names of the varieties shown:—*Glory of Plymouth*, *Carnation* (flaky white, tinted carmine at edges), **Madame Dobree*, **King of Scarlets* (a remarkably bright flower with white centre), **Helen Masterman*, **Pied Crow*, **Mrs. Knowley*, *Adolphe Brogniart* (rose-tinted orange with large white spot), *Belgique*, **Queen of Crimsons*, *Giffard*, *Orphée* (rosy white flaked with carmine), *Horace Vernet* (brilliant purple, red centre, feathered red), *Eugène Scribe*, *La Perle* (rosy lilac, blotched violet carmine), **Vicar of Westwell* (this was awarded a first-class certificate, as also **William Kelway*, both of these are compact well-formed flowers), *Mecenas*, *Prosper Laugier*, *Bellona*, **Maggie* (white, tinged at edges with purplish crimson, and distinctly marked on the lower petal with the same colour, a flower of great substance), and C. W. Bullmer, those marked * being his own seedlings.

Passing now to the amateur tent we find, as might naturally be expected, that Mr. Cleave takes the first place. In twelve stove and greenhouse plants he had the following in admirable condition:—*Ixora Prince of Orange*, *Phenocoma prolifera* Barnesi, *Allamanda Hendersoni*, *Statice Holford*, *Erica ampullacea* Barnesi, *Anthurium Schortzerianum*, *Clerodendron Balfourianum*, *Ixora Colei*, *Allamanda grandiflora*, *Erica Lindleyana*, *Bougainvillea glabra*, and *Erica Aitoni*. In the class for six stove and greenhouse plants Mr. Wilfrid Marshall was first with good plants of *Clerodendron Balfourianum*, *Ixora Mooreana*, *Anthurium Andreanum* very good, *Rondeletia speciosa*, and *Ixora Prince of Orange*. In the class for four stove and greenhouse plants Mr. Cleave was again first with *Clerodendron Balfourianum*, *Erica tricolor* Wilsoni, *Bougainvillea glabra*, and *Ixora Williamsi*. Mr. W. G. Marshall was second. Mr. Cleave was also first with *Allamanda grandiflora*, *Bougainvillea glabra*, and *Clerodendron Balfourianum*. In the class for six foliage Mr. Cleave was again first. His best plants were *Crotons* Krelagei and Prince of Wales, *Alocasia Lowi*. In the class for six exotic Ferns Mr. Cleave was first with fine plants of *Davallia Turneri*, *Adiantum trapeziforme*, *Adiantum Sanctæ Catherineæ*, *Gleichenia Mendelli*, *Adiantum concinnum latum*, *Gleichenia rupestris glauca*, and *Adiantum gracillimum*. In hardy Ferns Mr. Cleave was also first with fine plants of *Lastrea cristata*, *Scolopendrium vulgare crispum*, *Lastrea Filix-mas cristata*, *Adiantum Capillum-Veneris*, *Athyrium Filix-fœmina plumosum*, *Polystichum Woollastonii*, and *Athyrium Filix-fœmina Fieldiæ*. F. W. Newton, Esq., of Barton Grange, was second with excellent plants of nearly equal merit.

In the class for twenty-four cut Roses Dr. Budd of Bath was first with good examples for the time of year of John Hopper, Baroness Rothschild, Henrich Schultheis, Captain Christy, Countess of Rosebery, Queen of Queens, Madame E. Verdier, Marie Baumann, Bouquet d'Or, Duchess of Bedford, Ulrich Brunner, Charles Lefebvre, Comtesse de Serenye, Alfred Colomh, Merveille de Lyon, Dupuy Jamain, Marie Van Houtte, Duke of Wellington, Marie Verdier, Comtesse d'Oxford, Madame Isaac Periere, Avocat Duvivier, and Madame Lambard. He also was first for twelve with Fisher Holmes, Madame E. Verdier, Duchess of Bedford, Etienne Levet, Charles Lefebvre, Marquise de Castellane, Duke of Wellington, Madame Georges Schwartz, Marie Baumann, and Merveille de Lyon; also in Teas, not less than six varieties, with but indifferent examples of *Souvenir d'Elise*, *Ruhens*, *Marie Van Houtte*, *Caroline Kuster*, *Comtesse Riza du Parc*, and *Perle des Jardins*.

There were but two small entries for Gladioli, and to these were awarded equal first prizes, although many saw a vast superiority in Mr. Dobree's, which consisted of *Glory of Plymouth*, *Adolphe Brogniart*, *La Perle*, *George J. Fox*, *Countess*, and *Millie Dobree*.

Table decorations were not many in number; but although I have seen many of Miss Cypher's achievements in this line, she never set up a more beautiful one than that which she arranged for this Show. To those who condemn the high stands of course it would be objectionable; but nothing could, I conceive, be more elegant than this arranged (as she knows so well how to do it) with *Francoa ramosa*, *Gloriosa superba*, *Water Lilies*, *Eucharis*, &c., the other two middle pieces being *Cocos Weddelliana*, about 18 inches high, with *Water Lilies*, &c., arranged around the base. Small plants of the same Palm about 8 inches high were placed in ornamental square pots at either end, and there were some pretty small trays of flowers

and good fruit made a most charming combination. She was also first in table stands and bouquets.

The town did not display the decorations it used to do in former years, when prizes were given for the best street decorations; but much was done to make it bright and pleasant. One good man had, however, displayed a device near the station with words which speak more for his loyalty to his county than to his poetic genius—

"Welcome to fair Somerset,
The glory of the West;
Welcome to old Taunton town,
Whose Flower Show is the best!"

All the arrangements were carried out with their usual completeness by the active Committee, aided by their popular and indefatigable Secretary, Mr. C. W. Samson, and I am glad to say it was a great financial success. Upwards of £350 was taken at the gates, and thus this excellent annual Show holds its own amongst those of the West of England. May it long do so.—D., Deal.

FRUIT AND VEGETABLES.—With the exception of hardy fruits there was no diminution in the quantity of fruit in the various classes provided, and the quality on the whole was equal to what is usually staged at this Show. The best collection of ten dishes was staged by Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, and comprised very good Black Hamburgh and fairly good Muscat of Alexandria Grapes, a good Pine Apple, Eastnor Castle Melon, Mignonne Peaches, Lord Napier Nectarine, Brown Turkey Figs, Morellos, Apricots, and Jargonelle Pears. Mr. Crossman, gardener to J. Bruton, Esq., Yeovil, was a fairly good second, his collection including very good Black Alicante Grapes and Pine Apple Nectarines. The latter exhibitor was first with eight dishes, staging good Muscat of Alexandria and Black Hamburgh Grapes, Victory of Bath Melon, Pitmaston Orange Nectarines, Apricots, &c.; and Mr. J. Reed, gardener to F. J. C. Parsons, Esq., was second in this class. Several exhibitors staged excellent collections of four dishes, Mr. Iggulden being first with good Black Hamburgh Grapes, Hero of Lockinge Melon, Crimson Galande Peaches, and Pine Apple Nectarines. Mr. W. Daffern, gardener to Mrs. Walker, Weston-super-Mare, was a close second; and Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., third, the latter being rather hardly used. Several good stands of Black Hamburgh were shown; but Mr. Iggulden was easily first with medium-sized very compact bunches, the berries being large and well coloured. Mr. A. Cooper, gardener to C. L. Collard, Esq., was second; and Mr. J. C. Clarke, gardener to C. E. J. Esdale, Esq., Cothelstone, was third. In the class for any other black Grape Mr. Cooper was first with large well finished bunches of Black Alicante, Mr. Daffern following with handsome but not well-coloured examples of Madrasfield Court, and Mr. Crossman was third with the same variety in excellent condition, many growers in fact considering these should have been put first. Mr. J. Lloyd was first for three highly creditable bunches of Muscat of Alexandria, the second prize going to Mr. W. C. Raffett, and there were other good lots staged, and some very green indeed. Mr. Raffett took the lead in the class for any other white variety, staging Golden Champion in very good condition, and the same exhibitor was apparently the winner of the second prize. Melons were not particularly good, and the Judges acted very strangely when making their awards, two at least of the fruit not being tested. Mr. T. Panll was first with Hero of Lockinge; and Mr. W. Perriman, gardener to G. Ricks, Esq., second with Blenheim Orange. Peaches were scarcely so plentiful as usual, but there were several good lots included. Mr. Iggulden was first with a fine dish of Royal George, and Mr. Lloyd second with Grosse Mignonne in good condition. With Nectarines Mr. Daffern was first with highly coloured but scarcely ripe Newington, Mr. Crossman following with very handsome well ripened Pitmaston Orange. A fine dish of Lord Napier was passed over, the Judges did not like the colour. Mr. H. Godding had the best Apricots, and Mr. Iggulden was first with Morello Cherries. Plums and Pears were not well shown, but there were many fine dishes of Currants, Gooseberries, and Apples.

Vegetables were less numerous than usual, but on the whole were surprisingly good, notably the two first-prize collections of ten and six dishes shown by Mr. T. Frost, who had very fine Tender and True Cucumbers, Telegraph Peas, Intermediate Carrots, Runner Beans, Woodstock Kidney Potatoes, Autumn Giant Cauliflowers, Brown Globe Artichokes, President Garfield Tomatoes, and Tripoli Onions. This exhibitor was also successful in the various classes for single dishes of vegetables. The Taunton district has been very unlucky with respect to rainfall, some of the gardeners asserting that but little has fallen since March; but in spite of this they succeeded in showing very fine examples of such Potatoes as Vicar of Laleham, Woodstock Kidney, Reading Russet, Schoolmaster, International, Cosmopolitan, and other equally well-known sorts, and the Celery, Cauliflowers, Onions, Carrots, and Beans were also very fine.

ALLAMANDAS PLANTED OUT.

THIS, in my opinion, is the most satisfactory way to grow Allamandas when the object is either to secure cut flowers or embellish the roof or wall of a house. For exhibition it is, of course, necessary that they should be grown in pots, and at certain times in these they make a good display; but I have not yet seen a pot plant produce such huge quantities of bloom and such a long and constant succession of it as plants which were turned out of the pots, put into a good bed of soil, and allowed full freedom. Treated in this way, I consider the Allamanda the most useful stove-flowering plant we possess. It begins to open its flowers in an ordinary Cucumber pit or plant stove in May, and does not cease until October or November. One plant placed at the end of a Cucumber pit here two years ago has covered a large space of brick wall and a good piece of the roof at the back, and we can gather some dozens of blooms from it daily. It has been in blossom for three months, and has more buds on it now than ever. Its rooting space is about 3 feet square, 1 foot deep, and the compost consists of rough loam, peat, and sand. At this season it receives large quantities of liquid manure, and water is given liberally. In the autumn it will be cut back, but not quite so much as some recommend.—J. MUIR, Margam.



KITCHEN GARDEN.

SINCE our last notes appeared the aspect of the kitchen garden has been considerably changed. Many rows of Peas have had the seed pods gathered from them and the straw cleared away. Midsummer Cauliflower stumps have been pulled up. Turnips which had become too old are in the rubbish heap; old Broad Beans have followed, and in about three days everything of no further use was cleared out. In cases where the soil was well manured before the last planting it was only hoed and raked after the crops were removed before being ready for a succession, but where the soil was poor manure was given, and either forked or dug in. It is a mistake to manure after every crop, as well as it is to take crop after crop without any manure. We only apply manure once a year, no matter how many crops we may manage to take.

CABBAGE.—Clear all the dead leaves and weeds from between the old plants, which headed some time ago and are now being left to form late sprouts. Plant a good patch out from the young batch raised from seed sown three or four weeks ago. These will form tender sweet little heads in November and December, and be very acceptable then. Sow more seed of varieties to plant out in September and form heads early next spring. In mild early districts late sowing is the best for these, while in cold backward localities the end of July or early in August is the right time to sow. The seed may either be sown in rows or broadcast, and not too thickly in any case. The soil should be rich and capable of producing strong plants and plenty of robust roots. The position should be out in the sun and away from all shade, as drawn-up plants are never satisfactory; they cannot be too dwarf or sturdy. We know no crop of more importance than the spring Cabbages are, and to make sure of having plenty of plants and produce at the right time seed should be sown twice or three times. Some sow their Cabbage seed on a certain date annually, but we do not believe in this altogether, as the variations in the weather, especially in winter and spring, can only be met properly by having an early and a late batch of plants. Some seasons we have found all our early August-sown plants run to flower before March was over, and the early September ones were those which came in properly. This, to a great extent, is a question of climate and situation.

CARROTS.—No year passes without many of these failing, and we hear of many plantations which were very promising at one time dying almost wholesale. Happily ours are not included amongst these. About a month ago a small white fly took possession of the foliage, and they looked bad for a little while; but we mixed a quantity of soot and salt and gave them a good dusting with this, and now they are as healthy and green in the foliage as possible. In cases where failure has occurred, or where the Carrot crop is likely to be short, a good sowing of the Early English or French Horn should be made. We sow largely at this time in order to have a supply of tender young roots during the autumn, and we find them very much valued and useful. Insects are not so troublesome in the autumn as in the summer, and autumn-sown Carrots rarely fail. They should be sown in good clean soil in rows 15 inches or so apart, and about 2 inches below the surface.

WINTER GREENS.—Dry weather or other circumstances may have prevented some of our readers planting out the whole of their Broccoli, Savoys, and other crops, but the work must not on any account be delayed if profitable crops are desired. It is too late to plant Brussels Sprouts, and the other kinds of greens will not become so strong and remunerative as those planted a month or more ago. Any that can be lifted with good roots should be planted in this way.

CELERY.—The earliest plantation of this should be earthed up. It is best to allow the plants to grow a good size before earthing, then it must be done every fortnight or three weeks until no more earthing is required. The dwarf outside leaves should be taken off at first, and the soil be well broken along the margins with the spade, and then draw it in between the plants and press it round the stems with the hands. A piece of matting may be tied round each plant before earthing begins to keep the leaves close together, and prevent the soil from falling into the centre, which is the main point to avoid. The matting should be taken off when the work is completed, and they may be tied up each time earthing is done. Where there is any chance of worms disfiguring the stems the plants should be dusted with a quantity of soot before earthing. Keep late Celery crops quite free from weeds, and water copiously if there is any chance of their being injured by excessive drought. Plants which were left in the nursery beds may be used to fill blanks, and the surplus ones can be planted in new trenches to come in late. If trenches cannot be made for them they may be planted anywhere, as the leaves will be useful for flavouring.

HERBS.—These are in demand all the year round, and a good supply in a dry state in winter is as necessary as it is to have plenty of green ones in summer. The drying should now receive attention. Mint, Sage, Thyme, and the Winter Savory are a few of those things which must be dried in large quantities. Cut them on a dry day, secure flowerless shoots, and spread them out in an open shed to dry. Do not lay them in the sun, as this will wither them too much, and they must be turned over every other day until they are dry, when they may be tied in bundles and hung up in any room or kitchen.

ENDIVE AND LETTUCE.—Continue to plant out large quantities of these for late autumn and winter use. Give them good soil, a dry sunny open position, and keep all from 10 inches to 1 foot apart each way. Where Chicory has failed or has not yet been sown, sow a quantity at once, as it is an excellent companion to the Endive and Lettuce. It is not over-particular to soil or situation, the odd corners in the garden very often producing fine roots, which are lifted and forced in a dark place throughout the winter.

ONIONS.—Remove all weeds and anything which is obstructing the sun from the spring-sown crops, which are now gaining maturity. Clear off last autumn-sown crops, and save any good sound bulbs for immediate use. A small quantity of The Queen, or some other white variety, should be sown to produce the earliest bulbs next spring. Sow in rows in soil that is free from worms and moderately rich. A sunny position is much better for them than a shady one.

FRUIT FORCING.

FIGS.—*Early-forced Trees.*—When the trees have been cleared of the second crop of fruit they will require cool dry treatment to insure the proper ripening of the young shoots, and when this has been secured the roof lights may be taken off for a few weeks, and any repairs, painting, &c., executed. The exposure to night dew and rain is a powerful aid in cleaning the trees. As a collection of the best Figs for early forcing we find none to surpass Brown Turkey, Osborn's Prolific, Negro Largo, and White Marseilles.

Succession Houses.—Trees on which the second crop is now ripening will require careful treatment as the days decrease in length and the nights become damp and cold. The fruit should have full exposure to light, which, with a free circulation of dry warm air by night as well as day, will improve the colour and quality of the fruit, but care must be taken not to give a check to the roots and so interfere with the flow of the sap; therefore, the roots must be regularly supplied with tepid water or liquid manure, selecting bright mornings as the most suitable time for applying it, as the liberal admission of air will then carry off superfluous moisture, which otherwise will condense and injure the fruits. As the growths which have reached the extremities of the trellis and become clear of fruit, and successions require more room, the former may be cut away, which will admit light and air, to the great benefit of next year's fruiting growths. The growths should not be tied in close, but allowed to grow upward, as this favours the ripening of the points.

Cucumbers.—The house into which winter Cucumbers are to be planted must be thoroughly cleansed. The woodwork may be washed with soft soap and hot water, and the glass with clear water only, the brickwork and plaster, if any, with hot lime, and any painting needed should be done without delay. It is no use expecting healthy plants without thorough cleanliness, and insects are encouraged by dirt and ill-health. Examine the drainage and see that it is perfect before putting in the compost, which should be composed of three parts light loam and one part peat, with sufficient charcoal to keep the whole porous, or about a tenth. In this material well incorporated the plants will thrive much better than when manure is added, and stimulants can always be applied in a liquid state as the plants require it. A dry day should be chosen for getting in the materials, the drainage having been covered with turves grass side downwards. The soil should be made into a ridge in the centre of the pit or space allotted for the bed, and formed into hillocks flattened at the top, the soil being a foot thick in the centre. The seeds having been sown as advised in a former calendar, and the treatment there given accorded, the plants will be fit for planting on the hillocks at the end of this month, or they may be shifted into the pots or boxes if that mode of culture is practised. The plants having been watered some time previously to planting out, they should be turned out with the ball entire, and have their roots disturbed as little as possible. Press the soil firmly around each plant, after which a small stick should be placed to each and secured to the first wire of the trellis. Should the sun be bright at the time of placing the plants shade for a few days until they become established, when it should be discontinued. Encourage a sturdy, short-jointed growth, and thick leathery foliage, by ventilating freely on all favourable occasions, as the plants need all possible vigour to enable them to afford fruit at the most trying period of the year—viz., December and January.

PLANT HOUSES.

Calanthes.—The earliest batch of these plants should now be strong, with their pots well filled with roots, and in order to further develop them liberal and judicious feeding must be resorted to. Weak stimulants should be given every time they need water, nothing being better for them than liquid made from cow manure. Abundance of water must be given to these plants, and for some time the soil in which they are growing must not be allowed to be dry. Any deficiency in this respect will soon bring their roots into an inactive condition, and premature ripening will be the result. Syringing should still be freely practised, and the atmosphere kept moist, but more air must be given them than has been necessary up to the present. Shading will still be required, but the strong rays of the sun only should be screened from them. Light, air, and liberal feeding are necessary for developing large, well-matured pseudo-bulbs, which in due time will yield strong stout flower spikes. Later batches started in small pots should, without further delay, be placed into a size larger and treated carefully afterwards, until they are rooting freely into the new soil. A close warm atmosphere must be maintained for batches in a backward condition, and every ray of light possible given them. Under the most judicious system of treatment it is impossible for those grown for late flowering to produce such good

flower spikes as those started earlier in the season. The pseudo-bulbs of the late-started plants have not the same chance of ripening thoroughly, and therefore every attention must be given them, for unless this is accomplished they cannot be expected to flower well. They are, however, worthy of all the labour and care necessary to grow them for the purpose of coming into flower after Christmas, when many autumn-flowering plants have ceased to bloom. Hitherto we have found the late batch more serviceable than those that flower two months earlier, and they should be grown by all who are anxious to maintain a continuous supply of flowers for cutting and decoration.

Phajus grandifolius.—These plants will now be growing vigorously and rooting freely. Every attention as regards watering and feeding must be bestowed upon them to insure a strong robust growth if fine large spikes are required. Syringing may be practised during bright weather, and every ray of light possible admitted to them. It is much better to produce under the influence of light and a circulation of air a strong sturdy growth than to draw up the foliage weakly under heavy shade, and in a close confined atmosphere. Sturdy compact growth will always produce the strongest and finest flower spikes. The liquid recommended for Calanthes will suit these plants well, but their foliage will be much improved in appearance by occasional doses of soot water in a clear state.

Cattleyas.—C. Mossiae and C. Trianae that flowered early will have completed their growth, and should be removed at once to the coolest end of the structure. To flower these plants well, and to obtain afterwards a good growth development, they must be thoroughly ripened. More air and light must be given than has been needed up to the present time to ripen and solidify the pseudo-bulbs made, and then large well-coloured flowers may be anticipated. The supply of water at the roots must not be diminished, for at this stage they are most active, and must be encouraged in order to further plump up the pseudo-bulbs. The atmosphere must also be kept moist. Later-flowering varieties must be encouraged to complete their growth as early in autumn as possible, for nothing is gained by having to ripen them during short dark sunless days. Such plants, however well they be rested, very rarely flower satisfactorily. The growth of the plants can be much forwarded by closing the house a little earlier during sunny days, and using a little more fire heat both at night and during cloudy sunless weather. These plants bear without injury a close atmosphere until the flower sheaths are visible, when more heat and light are of the utmost importance.

Dendrobium Wardianum.—This Orchid naturally starts into growth early in the season, and if grown suspended in the stove proper they will have completed their growth and must be removed without delay, or else they will break again into growth, which cannot be thoroughly ripened, and will only damp during the resting season. This can be avoided by removing them to a vinery or other cooler structure where plenty of light and air can be given them. In a very short time they will bear full exposure to the sun and the conditions of a cold house. Plenty of water must be given them for some time yet, or the pseudo-bulbs will ripen prematurely and fail to flower from every joint of their growth, which will be the case if gradually and thoroughly ripened.

THE BEE-KEEPER.

NOTES ON BEES.

DURING the month of September, 1884, I arranged my hives to stand the winter and spring, marking those I wished to swarm and those not. Not only have I had my wishes fulfilled, but notwithstanding the very untoward and cold season they have done well—far beyond my expectations. The only stinging days the bees have had this year since April was the last week of June and from the 20th to the 29th of July, with two wet days during that time. At present my hives will have stored about 70 lbs. of surplus honey; with a continuance of this fine weather for another week each should yield 100 lbs. The crossed Cyprians are this year again far ahead of the others. A stock that swarmed has given as much as non-swarmers, while the swarm promises the same. I neither fed nor manipulated, except feeding the swarms a little, dividing hives for young queens, putting on supers. I clean no floors, because my hives do not require it, having ventilating floors.

The following are the casualties that have occurred in my apiary:—First, a two-year-old queen was deposed at the end of April; a nucleus kept over winter was joined and put matters right. Second, a super placed on a hive with frames all open at the top contained brood. This was intended to illustrate what I was sure would happen, and is the second super only that contained brood during my bee-keeping life. The third was a hive that I neglected to ventilate, and one warm rainy day last week one comb collapsed; next day it,

along with a super, was removed, and the brokendown comb sent to an invalid who desired a piece of honeycomb. There was, in my opinion, another cause for the comb falling. It was made from a sheet of thicker foundation than I care about using, as I consider thick sheets make the comb more brittle than thin ones do. When the bees work up the surplus wax the comb is more brittle than when extended from thin ones, or when made wholly by the bees. My supers, with the one exception, are first-class, and mostly of worker comb, which is decidedly prettier and more marketable than drone comb. Some tell us that drone comb is "store comb," but if that was the case why do the bees not adhere to the rule? My bees have never attempted to lie out this warm and fine weather.

Young queens, roomy and well-ventilated hives, together with the supers being kept well covered, and avoiding all unnecessary manipulation, are the direct causes of my success. For ease and neatness in putting on and taking off the supers the Stewartons are excellent. In them all crowding on the top of frames when removing supers and stinging is avoided. I draw slide after slide of super, slip in the carbolised paper as each is removed, then push in slides in one beneath, and no bees annoy you. The lateral slides have not this advantage; but then the bees do not crowd the top of hives fitted with them, and a little acid clears all down.

The best frame hive is undoubtedly the deep compound frame hive; with its reversible ventilating and feeding floor and frame feeder, movable porch and improved hiving box, it is the most perfect hive made. With such a hive, measuring only 17 inches across and light, they are admirably adapted for moving about, while it possesses that grand feature of the Stewarton—having depth in body, and a depth of honey between the brood nest and super is the great secret of having pure comb. With such hives there is need for nothing to prevent the queen ascending nor bees crowding the tops of frames, nor any fear of blackened combs, as is the case with shallow frames where the brood is close to the supers. My little apiary giving so much satisfaction is not only cheering to me, but will, I hope, be encouraging to others. There are many bees near me, and if your bee-keeping readers reverse the foregoing picture they will have an idea what they are like. Good management has this year given abundance of honey, but where the management has been different with the variable season the result is the same.

FOREIGN VARIETIES OF BEES.

The introduction of foreign varieties of bees and their crosses has necessitated changes in their management. Their tempers, too, are greatly changed from the aboriginal black bee, so much with some varieties and crosses that bee-keeping to many is an annoyance instead of a pleasure. Had the Bee-keepers' Association turned their attention toward the introduction of mild-tempered bees it would have been more to their credit than fixing standard appliances with a great amount of compulsion on bee-keepers to adopt them, imperfect though they be. In consequence of many imported Ligurian bees showing both temper and markings of the Cyprian bees, together with an impaired constitution consequent on raising queens from weak hives, they fail to give the satisfaction they did when first imported. The Carniolian bees are not only good honey gatherers and good breeders, but are very mild tempered and hardy, requiring neither smoke, carboic acid nor veil when manipulating. Their only fault is the long time they fly when swarming, and their strong inclination to return to the place they alighted on if at all roughly handled. Second or after swarms, by having a great many queens, are troublesome, clustering sometimes in a dozen places, and will send off a swarm from two or three combs with full scope of hive. The Cyprians and Syrians are liable to do the same, but are no exception to the old race, and but prove that giving room while young queens have been neglected will not prevent swarming.

Owing to the erratic movements of Carniolians I find it not only an advantage but a necessity to employ a hiving

box in all cases. I think the mild-tempered Carniolians will not enter other hives and kill their queens, but other races do. Therefore the hiving box used with them is desirable, as when a swarm of bees is shaken on to the front or top of the hive many take wing, entering other hives, killing the queens there, notwithstanding the confidence the operator may have that all is right. It is a good feature in the Carniolian bee raising so many queens and then separating them into small swarms, as it gives the apiarian a great advantage in having plenty of young queens on hand. The Carniolian bees are great flyers, and go long distances for forage, so that advantage overcomes the fault of flying long when swarming. One hive of bees that swarmed this year flew for nearly three hours before they clustered, and after they did so we had a great difficulty, owing to the bees being tired, to gather them in, consequently many were left behind. While on their way back to the old site a neighbour's hive swarmed, and quick as thought they flew towards the swarm, but not more than a dozen would join the swarm, so we cut the twig containing the cluster, joining them with sister swarm, and they were much easier to manipulate then.

THE SYRIAN BEES.

These bees I have already given an account of up till swarming time, the only fault noticeable, like the Cyprians, being their tenderness during winter. Their high bugle-like buzz when on the wing made them very charming. During the low temperature I had no difficulty with them, but a change of the weather brought a change over them. They swarmed, and while doing so lost their queen and became vicious, entering other hives. Thinking the queen might still be in the hive I divided it into five, but failed to find her. Many bee-keepers can but have a faint idea of the number of bees in a swarm of these bees, making it a great difficulty to find a queen. The ones occupying the old site, and which had the most bees and the one likely to have the queen, I excised all royal cells, as they were building worker and no drone comb. I expected to find her all right next day, but judge of my surprise that the newly-made worker comb contained upwards of a hundred empty queen cells, a proof that the queen was not there, and a still better proof that bees do not shift eggs from one cell to another, and bees had never a better opportunity than in this case. The other four were examined with the same result—building worker comb, a case without parallel in our native bees. During these manipulations, which were all performed in a cautious manner, the bees stung my hands dreadfully, entered my pockets and shoes, stinging me in the feet through my stockings. They also went over the hedge, and stung one who had been stung well every year for sixty years, thus negating by ocular demonstration the inoculation theory. Thanks for a German mask sent me by Mr. A. Neighbour my face was not stung, but my hands were, and swelled very much—quite a new thing for me; besides, there was much pain. If the operator could keep perfectly steady and calm he would escape many stings, but the slightest shake of the hand irritates them to the attack. Had they confined their stinging to those in or about the apiary I would have been more hopeful and less sorry; but they attacked people on the public road a long way from their hive, and entered dwelling houses and stung people there. Simultaneous with this stinging and the thermometer standing at from 70° to 84° in the shade, and the height of the honey season, they attacked my strongest Carniolian hive, carrying unmolested its honey away as fast as the latter carried it in, impressing me with the truth of the one in America that gathered 1000 lbs. last season.

The stinging and robbing had to be stopped, and I acted as judge and jury, sentencing them to be imprisoned without either bread or water for five days, being the expiry of my present engagements. Their incarceration during so high a temperature would have proved fatal, but good ventilation kept them comfortable, but evidently not quiet. Every one of them set to work and proved themselves as good prison-

breakers as they were thieves. The whole of them in a very short time had reduced the slide of their doorway an eighth of an inch, while one of them actually pushed aside a board on the top of the frames 18 inches long by 5 broad and three-eighths thick, and made their escape, while another pushed a half inch slide mouthpiece aside and commenced their robbing and stinging with renewed vigour. Being sorry to see honest bees robbed by the brigands, I passed a new sentence and carried it into effect, and had them banished several miles from any hives amidst Clover fields, profuse in flower and aroma, and a paradise for both man and bees. On being released from their hive they attacked me again, which I would not have cared for but they caused a lot of workers in a hay field to make a hasty retreat, as I did myself to escape a reprimand and be a witness to seeing the whole of them being toppled into the rivulet from its brink on which they stand. Many of these Syrians were left behind which have entered other hives, and I am sorry to say these refugees are in no way altered, stinging and robbing as they did when in their own hives. Everybody concerned who experienced their stings believe they are banished for ever. The Cyprians I could manage, but the Syrians are unmanageable.—A LANARKSHIRE BEE-KEEPER.

BEEES TAKING TO AN EMPTY HIVE.

IN your Journal of September 25th, 1884, you inserted a letter from me, describing the entrance arrangements and positions of the hives in my bee-house. My hives are placed two together; the one contains bees during the winter, and the other is placed on one side of it to receive the swarm or swarms which may come from it during the summer. The two hives are joined together in the autumn, and in this way I always keep the same number of hives in winter, and I make a point of keeping them very strong.

All the hives except two have a south-east exposure. These two face the north-west. One only is occupied in winter. The bees having the south-east exposure swarm regularly about ten days earlier—namely, about the middle of June. In the early spring the north-west hive is the strongest, and it certainly yields more honey in autumn. In 1883 it did not swarm at all. In 1884 it swarmed once, and in 1885 it threw off three swarms (two in one day), but all returned back to the stock hive within an hour.

My bees have not swarmed this year with the same vigour as usual. The swarms, though good, did not empty the stock hives in the same way. It was sometimes difficult to tell which hive had swarmed. The swarms generally were late; the weather was cold and must have interfered with the breeding, but when the weather improved the bees recovered rapidly, and the district report is that this is an exceptionally good year for honey. My hive exposed to the north-west is, however, very strong, having all its bees in it. It has nearly filled a large super, but, in addition to that, a large part of its population, including a good number of drones, took possession of the adjoining hive night and day. They have made a good deal of honey and comb about 10 lbs., and have deposited in two of the frames a good deal of bee bread. The entrances to the two hives are 2 feet 6 inches apart, and the entrance to the empty hive was partially obscured by long grass, which, had a swarm been in it, would have been kept short.

The weather is now colder, and the bees at night are in the stock hive only, but are as busy as ever in the adjoining hive in the day. This proceeding, as far as my experience goes, is very unusual.—A DUMFRIESSHIRE BEE-KEEPER.

SUPERS v. SECTIONS.

IN your issue of this week "A Lanarkshire Bee-keeper" takes great trouble to prove that bees prefer ordinary supers to sections. This no experienced bee-keeper will deny; but when he tries to show that honey is more saleable in the supers I think most bee-keepers will disagree with him, and, in fact, the contrary is proved by the large increase in the number of sections sold by the hive dealers. In Ireland I know that sections will command 1s. per lb. wholesale when large supers cannot be sold at all to dealers except at the same rate as skep honey, which is about 6d. to 8d. per lb. wholesale, and sometimes less, and many grocers deal in sections who would have nothing to do with supers or honey that would have to be cut up for sale.—Co. WICKLOW.

BEEES—SHORT NOTES.

MY experience of bees extends to only a few months. I write this in anticipation of advice being given by your experienced correspondents. Why is open driving, as recommended by "Modern Bee-keeping," superior to close driving? I went to an agricultural show in which there was a bee tent, and an expert was there driving bees on the open system. At that time I had a stock hive in a straw skep I wished to take the honey from, so on arrival home I commenced driving on the system just

seen. I was beating from 7 P.M. to 9.30; then I placed the driven bees on the old stand. The next day they did not seem to be settled, and it was quite evident the queen was not there, so I inverted the stock again, and recommenced driving, and was beating for more than an hour, when a brother bee-keeper came in, and told me to place the edges of the two hives together, and then beat. In about ten minutes I carried the upper hive to its old stand, the bees went rapidly into it, therefore I concluded the queen was in. Does not this show that close is superior to open driving? at any rate, it is in saving time. As to seeing her majesty going up, is it of much consequence if we can judge fairly correctly if she has gone up, by the scarcity of bees in the lower hive?

I half emptied the above skep of comb and honey, and I am now giving 4 lbs. of sugar made into syrup by boiling with one quart of water and a little salt and vinegar. Will that quantity be sufficient to last them safely through winter, together with what they gather from August 7th in this, a pastoral district, with no Heather? What kind of sugar is the most economical to feed them with?

I have a strong swarm of June 4th, 1885, in a nine-bar frame hive. I have fourteen 1 lb. sections on the comb is worked out in them (August 11th). I intend taking them off on September 1st, together with one bar from each side of body of hive; the dummies, one on each side, will then be drawn close to the seven remaining bars, leaving 1½ or 2 inches between them and the sides of the hives, which space will be filled with sawdust. Is it probable that the bees will winter well on the few remaining bars without feeding? Here is another question. I have seen bee-keepers use cushions made of chaff, &c. Surely they cannot be so warm (or rather non-conducting) as hives packed with loose material, as chaff, corkdust, &c., for when made into cushions they are of a form which favours a circulation of air around them, therefore losing a great deal of heat.—A YORKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Ant. Roozen & Son, Overveen, near Haarlem, Holland.—*Catalogue of Dutch Bulbs for 1885.*

Viccars Collyer & Co., Leicester.—*Catalogue of Floral Gems.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Boxes for Chrysanthemums (N. F.).—We have received your letter and the subject shall not be overlooked.

Seedling Plum (A. C.).—If this is known to be a seedling recently raised it is too much like the Denbigh Plum to be cultivated as a distinct variety.

Removing Greenhouse Lights (E. T.).—If we understand the case rightly we think the lights must remain, as they could not be taken away without damaging the property of the next owner of the estate. The case, however, is peculiar, and before proceeding in the matter you had better consult a solicitor. It is a great pleasure to us to learn that you find the Journal so satisfactory after having read it for so many years. You rank among the oldest of our subscribers, and we thank you for your appreciative letter.

Destroying Ants (E. B.).—Your plan is not so "new and novel" as you suppose it to be, for some years ago a correspondent wrote:—"I accidentally placed an empty flower pot over an ants' track, where it remained a fortnight. On moving it I found a complete nest full of eggs, ants, and earth, which I put in a pail of hot water and destroyed the whole, repeating the process with equal success." As you also have found the plan good we repeat the experience of our old correspondent, and new ones may easily try this simple method of eradicating ants.

Mahonia Aquifolia (W. S.).—The berries sent are those of the above-named plant, which make an excellent preserve, that some have highly praised in sore throats; but whether that be the case or not, it is as excellent and palatable a preserve as is made of any fruits in this country; and the fact only requires to be generally known, that all who cultivate this beautiful shrub—and there are few who do not—may be enabled to apply to such domestic use the abundance of beautiful purple berries which this plant annually produces. The preserve is made in the same way as that of Black Currants, Plums, or other fruits which are applied to similar purposes.

Seedling Oranges (Petio).—You do not say what convenience you have for growing the plants, but if only an ordinary greenhouse they will be better not repotted until spring. Remove the moss from the surface of the soil with a pointed stick, and do not allow it to grow again; stirring the soil occasionally will prevent it and be good for the young Orange trees. The presence of moss is indicative of stagnant soil. Give the plants water when the soil appears slightly dry, and only then, always pouring on sufficient to pass quite through the soil. If the pots are pretty well filled with roots in March the plants may be placed in others about 2 inches wider, draining them well, and using turfy loam, pressing it down firmly.

Early Hardy Flowers (Idem).—We fear there are few plants that will answer your purpose. White Aconites and Snowdrops are the earliest of bulbs, and planted in October would be over in time for sowing the beds with annuals. Iris reticulata is also early, rich, and sweet, and Triteileia uniflora is pretty in masses in early spring. Crocuses, Hyacinths, and early Tulips might be grown, and the beds be afterwards planted with Stocks, Asters, Zinnias, Plox Drummondii, Petunias, French and African Marigolds, and Scabiouses, which are readily raised from seed, but not sown in the beds after the bulbs are over, as the seedlings must be ready for planting then.

Setting Chrysanthemum Buds (Lover of Perfection).—The term "setting" means fixing or establishing the buds. When a bud forms in the tip of a shoot at this season it is "taken" or fixed by promptly removing the growths surrounding it with the point of a penknife, and the bud then develops into a fine bloom; but if the growths or breaks are allowed to extend the bud shrivels; it has not been "taken" or fixed, and later and smaller flowers are produced by the growths that are permitted to extend, these terminating in buds. No further growth starts from these, hence they are called terminals, the earlier buds around which two or three shoots spring naturally, if allowed to do so, being termed crown buds. Numbers of persons who grow Chrysanthemums fail to observe these buds, but growers of blooms for exhibition watch for them, and "take" all that in their judgment show at the proper time for the development of grand blooms.

Name of Caterpillar (C. B., Lichfield).—The specimen sent is the caterpillar, about half-grown, of the vapourer moth (*Orgyia antiqua*), which feeds upon a variety of shrubs about gardens and along lanes, but it is not sufficiently abundant to do injury to cultivated plants of any kind. The species belongs to that group of Lepidopterous insects where the bodies of many of the caterpillars are adorned with "tussocks" or pencils of stiffish hairs, which at the time of its final change are woven by the insects into their cocoons. A notable peculiarity in this species is that the female is wingless, the eggs are laid by her upon the cocoon, where they remain from the summer or autumn until the ensuing spring.

The Medlar (J. B.).—Your tree is a Medlar, known botanically as *Mespilus germanica* and is a native of several European countries, chiefly England, France, and Germany. The fruit in its natural condition is hard and extremely astringent, but after undergoing a kind of incipient decay, which is termed "bletting," it becomes softer and of more agreeable flavour, slightly acid with some astringency still remaining. The fruits are commonly eaten in an uncooked state, but some persons prefer them as a preserve. The tree is raised from seed, but the usual mode of propagating is by grafting or budding upon the Quince, Pear, or wild Medlar, or sometimes, especially on the Continent, upon the White Thorn. The fruits should be gathered at the end of October or in November, and must be laid thinly upon dry shelves. It is fit for use in a week or two after gathering, but will keep for two months.

Hyacinths (E. Mason).—You give no idea as to how many you desire to grow. The following are "good, and not dear," and you can choose as many as you wish in the order in which they are named in each section:—**Single Red or Rose.**—Von Schiller, Gigantea, Charles Dickens, Mrs. Beecher Stowe, Macaulay, Robert Steiger, Solfaterre, Sultan's Favourite, La Joyeuse, Lina, Baron Rothschild, and Madame Hodgson. **Single White.**—Baroness Van Tuyl, Elfride, La Candeur, L'Innocence, Madame Van der Hoop, Mirandolina, Paix de l'Europe, Queen of the Netherlands, Miss Nightingale, Grand Vainqueur, La Franchise, and Alba Maxima. **Single Blue.**—Charles Dickens, Baron Van Tuyl, Grand Lilas, Marie, Couronne de Celle, Mimosa, Sir John Lawrence, L'Unique, Haydn, Jeschko, La Precieuse, General Havelock, De Candolle, Baron Von Humboldt, Argus, and Lord Byron. **Single Yellow.**—Ida, Bird of Paradise, Duc de Malakoff, Anna Carolina, La Citronnière, and Alida Jacoba. **Double Red.**—Waterloo, Lord Wellington, Regina Victoria, Noble per Mérite, Princess Dagmar, and Groot Vorst. **Double White.**—La Tour d'Auvergne, Prince of Waterloo, Triumph, Blandina, Bonquet Royal, Jenny Lind, and Anna Maria. **Double Blue.**—Van Speyk, Louis Philippe, Blocksberg, Garrick, Lord Wellington, and Prince Van Saxe Weimar.

Vine Leaves Discoloured (A. H. G.).—We do not think there is much the matter with your Vines—nothing at all if the roots are working freely in fresh soil and the Vines are not overcropped. The season, in the south at least, has been an exhaustive one to Vines, the dry air and bright sun causing excessive transpiration, and unless a proportionate quantity of water has been given to the roots the foliage has lost its freshness prematurely. It is quite common for the leaves of Gros Colman to show signs of withering before the fruit is ripe, and some growers have found it advisable to slightly shade the Vines with hexagon netting in very hot weather; but if all the leaves of your Vines are as good as those before us you will scarcely find it necessary to adopt that practice, especially if the roots are well supplied with water and you continue ventilating the house judiciously. Gros Colman is a month or more longer than the Black Hamburgh is in finishing after the colouring commences, and we have seen very fine crops colour in October. You are possibly overcropping your Vines, and liquid manure might be of much assistance. You had better not remove any great quantity of the lateral growth or you will check the flow of sap. Merely removing the tips will suffice, and possibly this may not be necessary. You give no particulars as to the age of the Vines, weight of the crop, or extent and condition of growth. The temperature is right, and your method of ventilation appears to be correct. You will find the names of your plants below.

Gloxinias from Leaves (A. G.).—There are various methods followed in

multiplying by this means. Some make incisions in the main veins on the lower surface of the leaves, and lay them flat on a bed of silver sand in the propagating house. Over the cuts small pebbles are placed to prevent the leaf shifting until roots are formed, and in the course of time small crowns are formed, and each makes separate plants, which will flower the following summer if carefully ripened and preserved over the winter. Another plan is to cut up the leaves into slips, following the direction of the veins, and running the knife out without damage to the margin. This operation should be performed with a very keen-edged knife, so that the tissue of the leaves is not lacerated. By this means the leaves may be divided into a number of wedge-like pieces, narrowing to the bases. These are inserted into pots filled with silver sand intermixed with a little peat soil; and after moistening the body of the compost cover with a bellglass, or place the tops inside the glass case if the house is furnished with such. Keep moderately close, and never wet the leaves while applying water to the roots, at the same time being careful that the cuttings do not suffer from damp. Under such favourable conditions roots will soon be formed, to be succeeded by bulbs and minute leaves; but it is the best plan to pot off singly as soon as well rooted, so that the progress of the two latter is not checked, and that nice plump bulbs may be produced before the fall of the year. After the rooted portions of the leaves have been put separately into pots, have them watered and returned to the place they formerly occupied, and give them the same watchful attendance as hitherto, not once allowing the soil to get dried up, which would permanently cripple their growth, until indications of their going to rest are shown at the end of summer. No more water will be required after such symptoms, except enough to prevent the soil from getting dust dry, and thereby causing the bulbs to shrivel.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*H. M.*).—Your plant appears to be *Helianthus multiflorus*, which is closely related to *Harpalum*, and *H. rigidum* is by some writers ranked as a *Helianthus*. (*A. H. G.*).—1, *Santolina Chamaecyparissus*; 2, *Antennaria plantaginifolia*; 3, *Alstroemeria chilensis*; 4, Appears to be a *Lysimachia*, but we cannot determine the species; 5, A variety of *Potentilla atrosanguinea*. (*T. W.*).—1, *Erigeron acer*; 2, *E. canadense*; 3, *Senecio vulgaris*. (*R. P. O.*).—1, *Trachelium caeruleum*; 2, *Eryngium amethystinum*.

COVENT GARDEN MARKET.—AUGUST 19TH.

SOFT fruit is now nearly over, and prices are higher. Heavy supplies of hard fruit to hand, with a steady trade doing.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6 to 3 6		Melons	1 0 to 2 0	
Cherries	8 0		Oranges	100 3 0 to 12 0	
Filberts, Kent. per 100 lbs.	25 0	0 0	Peaches	per doz. 1 6 8 0	
Currants, Red	3 6 4 0		Pears, kitchen	dozen 0 0 0 0	
" Black	4 0 5 0		" dessert	dozen 1 6 2 6	
Figs	dozen 1 0 1 6		Pine Apples English ..	lb. 2 0 3 0	
Gooseberries	1 6 2 0		Plums	1/2 sieve 2 6 4 0	
Grapes	lb. 0 6 2 0		Strawberries	lb. 0 0 0 0	
Lemons	case 15 0 21 0		St. Michael Pines ..	each 3 0 7 0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen 1 0 to 0 0		Lettuce	dozen 1 0 to 1 3	
Asparagus	bundle 0 0 0 0		Mushrooms	punnet 0 6 1 0	
Beans, Kidney	lb. 3 0 0 0		Mustard and Cress ..	punnet 0 2 0 0	
Beet, Red	dozen 1 0 2 0		Onions	bunch 0 3 0 0	
Broccoli	bundle 0 9 1 0		Parsley	dozen bunches 2 0 3 0	
Brussels Sprouts ..	1/2 sieve 0 0 0 0		Parsnips	dozen 1 0 2 0	
Cabbage	dozen 0 0 1 0		Potatoes	cwt. 4 0 5 0	
Capsicums	100 1 6 2 0		" Kidney	cwt. 4 0 5 0	
Carrots	bunch 0 3 0 4		Rhubarb	bundle 0 4 0 0	
Cauliflowers	dozen 2 0 3 0		Salsafy	bundle 1 0 0 0	
Celery	bundle 1 6 2 0		Scorzouera	bundle 1 6 0 0	
Coleworts	dcz. bunches 2 0 4 0		Seakale	per basket 0 0 0 0	
Cucumbers	each 0 3 0 6		Shallots	lb. 0 3 0 0	
Endive	dozen 1 0 2 6		Spinach	bushel 2 0 4 6	
Herbs	bunch 0 2 0 0		Tomatoes	lb. 0 4 0 5	
Leeks	bunch 0 3 0 4		Turnips	bunch 0 4 0 6	



THE CLERGYMAN'S FARM.

(Continued from page 150.)

It has recently been laid down as a self-evident fact that the average clergyman must fail as a farmer. We do not by any means agree, for, as we have shown, his farm is, or ought to be, a home farm specially devoted to the production of farm produce for home consumption, and not for the cultivation of crops or the rearing and fattening of live stock for market; and we fail to see why a clergyman may not do this as successfully as anyone. Certainly he ought not to fail in

making his farm contribute materially to the wants of his household, and it should also enable him to avoid most of the buying and selling for which our contemporary considers him so unfit. The especial object of these papers is to assist him in doing so, and we now turn to our subject for this week, which is the culture of the most useful of the green crops. It is not an easy matter to say when such crops are most useful. Take, for example, the present time, with pastures parched by drought, do we not find a bountiful supply of spring Tares invaluable? In many an instance what a lamentable falling off in the supply of milk would there have been, were it not for the daily cartage of succulent Tares to the meadows and cow-sheds. Therefore, we should always strive to spare enough land for successional sowings of Tares from early spring onwards into June, and they are used for cows, for horses, pigs, and sheep; or, if not all wanted, the surplus is ploughed in for manure, imparting much more fertility to the land than it has taken from it.

Red Clover is another green crop which, under favourable conditions, affords at least three growths, the first two being made into hay, and the last being fed off by sheep. Just now we are turning the second growth to profitable account by folding old sheep upon it, and we may mention here that this system of folding enables us to keep many more sheep than could otherwise be managed. We have had some trouble in having due attention paid to our wishes as to the size of folds. A hurdle to a sheep is our rule; but, to save trouble, shepherds will use many more hurdles if they can, and then much of the Clover is spoilt, not eaten. Small folds insure close cropping of the herbage and an equal distribution of manure. A mixture of Red and White Clover with Perennial Rye Grass affords early green food in spring, and a heavy crop of hay later on. It is, however, only upon an emergency that we turn cattle or sheep upon this crop in spring, our usual plan being to reserve the first growth for hay, and the second growth too if the land is rich and green food plentiful. Our chief aim is to do all we can to insure good crops, and, when we have done this, to turn them to the best account, our actions being guided by circumstances rather than by strict rules—green food being much more in demand some seasons than others. Another very useful mixture, more durable in character with the two sorts of Clover, consists of such strong-growing Grasses as Cocksfoot, Timothy, Fescue, Foxtail, and Crested Dogtail. This yields a heavy crop, makes good hay, and is to be regarded as a permanent pasture, to which if we add a fair proportion of Yarrow, Trefoil, and Alsike, with a few of the finer Grasses, we shall impart the best possible combination of meadow plants for both cattle and sheep.

Rape and White Mustard are often sown at this season of the year to afford a late supply of green food for sheep. Of the two, Mustard is preferable for its quick strong growth and its high value as a manure when ploughed in. We may usefully repeat here that instead of bare fallow and the so-called resting of land, we now get the land clean, sow it with Mustard, using 20 lbs. of seed per acre in spring or early summer, plough it in as soon as it is in full bloom, sowing and ploughing again and again, two, three, or four times should the summer prove favourable—drought being the chief hindrance, and in autumn sowing either Wheat or winter Oats. We must make mention of winter Oats among green crops, for in a backward spring winter Oats afford a supply of green food of especial value for sheep. If so eaten off, the crop may be slightly retarded, but it is seldom that winter Oats are not ready by the middle of July. As a corn crop they stand in the first rank, the yield, both in straw and grain, being excellent in quality and quantity under good cultivation.

Rye is another green crop that is sown in September, or, at latest, early in October, for an exceptionally early cut of green fodder for horses and dairy cows, as well as for folding with the breeding flock. We have no green crop so early as this, and none more useful. Trifolium incarnatum is, perhaps, one of our most profitable green crops, of such easy culture that no ploughing is required for it. We first well

harrow the corn stubbles to clear off rubbish, then sow the seed, pass the harrows over to cover it, and the work is done. It may be termed a second early green crop, affording a very heavy bulk per acre, which is generally used green for horses, sheep, and cattle. Trifolium hay was at one time disliked, but under the modern system of chaffing and mixing it proves as valuable as any other fodder. Lucerne, Sainfoin, and Trefoil are also excellent green crops that well repay careful culture, without which no farm crop really answers, for, simple as is the culture of Trifolium, the soil must be fertile to insure a full crop.

(To be continued.)

WORK ON THE HOME FARM.

Seldom if ever have we seen the ewes brought into the market in such poor condition as at the present time. This is doubtless an outcome of hard times, the lambs having been kept with the ewes much later than usual; food has been scarce, much of the pasture being parched by drought, and other food was not to be had for the flock. The result is lamentable in the extreme, for in such instances the ewes have become so greatly reduced in condition that they are driven to market in wretched plight, and are got rid of at prices in some instances as low as 16s. Such cases are of course extreme ones, and they are probably only practised by those farmers having old ewes not worth keeping for another lambing season. Lambs and sheep under careful management are in excellent condition. All the sheep have been dipped in Cooper's mixture. We have five flocks, and may mention as a pleasing fact that we have not had one bad case of fly striking. That pigs answer and are profitable if well managed is quite true, but that they are so greedy that without due care there may be a considerable loss with them in a very short time. We have now about 200 nice young porkers ready for the stubbles, where they are taken daily by boys as the corn is cleared from the fields.

By the time they are again settled in the yards they will have materially improved in condition, and then they will have home-grown corn regularly, and be drafted for sale as they become big enough. With such young pigs it answers to use unthreshed Peas, giving them enough of the haulm daily to keep them plump. This answers well, and in connection with this use of unthreshed corn for home consumption we may mention the chaffing of Oat sheaves for horses, cattle, and sheep. The corn is chaffed with the straw, and it makes a wholesome and nutritious mixture. This is a lesson in economy which we gained from a shrewd Scotch farmer, and we commend it to the notice of our readers as one of the important little things which tend to successful results. Repeatedly do we have evidence of the soundness of the advice often given to keep really well-bred cows and store cattle. On the day we write this note we have seen polled heifers sold at really profitable prices simply because they had ripened for the butcher so early without any loss of calf flesh. Inferior animals, on the contrary, are now so low in price as to entail a loss upon those rash farmers who will persist in keeping them despite the stern lessons of adversity which cannot be ignored with impunity.

OUR LETTER BOX.

Clover Pest (W. Cateugh).—The "stuff" which comes in patches among the Clover is the common Dodder (*Cuscuta trifolii*). It is a parasitical plant, its seed germinates in the soil, and the slender stems run over the Clover, affix themselves to every branch or leaf with which they come in contact, feed upon and eventually smother the plants. To eradicate it not only pare the soil containing the dead patches of Clover, but a margin a foot wide around them, and burn the whole on the spot, for if you attempt carrying the dead plants and pared soil to one large fire, seed of the Dodder may be scattered about to bring more of the pest next season.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				
	Barometer at 32° and Sea Level.	Thermometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885.										
August.										
Sunday	29.978	61.2	57.1	S.	62.0	73.4	55.8	112.4	50.4	0.010
Monday	29.971	64.2	61.5	S.	62.3	74.8	58.2	120.3	49.3	—
Tuesday	29.743	65.0	57.2	S.W.	62.4	72.6	55.7	121.2	50.6	0.010
Wednesday ..	29.837	61.7	55.8	S.E.	62.2	73.6	52.7	116.4	46.9	0.179
Thursday	29.973	58.7	51.6	W.	61.2	67.6	50.0	119.2	45.9	—
Friday	30.341	56.7	50.5	N.W.	59.8	71.3	43.3	119.8	36.7	—
Saturday	30.339	60.8	54.1	S.E.	60.2	69.6	44.9	92.9	38.8	—
	29.983	61.2	55.4		61.4	71.3	51.5	114.6	45.5	0.199

REMARKS.

9th.—Dull early, with slight drizzle at 9 A.M., then fair.
 10th.—Overcast early, bright and breezy later, then fair.
 11th.—Pleasant day though windy, and frequently cloudy; shower in evening.
 12th.—Cloudy early, bright till about 4 P.M., then heavy rain; fine night.
 13th.—Fine and bright.
 14th.—Cool, but fine.
 15th.—Very hazy morning; fine bright afternoon.
 A dry week; temperature very nearly the same as last week, and very near the average.—G. J. SYMONS.



COMING EVENTS

27	TH	Reading and Ludlow Shows.
28	F	
29	S	
30	SUN	THIRTEENTH SUNDAY AFTER TRINITY.
31	M	
1	TU	
2	W	Glasgow Autumn Show.

WINTER GREENS.

IN consequence of the protracted drought that has prevailed over the greater part of the kingdom a scarcity of green vegetables in winter and spring will in all probability be experienced in many gardens. Cultivators who did not take prompt advantage of the intermittent showers that fell early in the season in putting out plants are in a much less favourable position than others who felt it safer to plant even if their Cabbages, Borecoles, Brussels Sprouts, and Broccolis were small instead of waiting for them to get larger. The loss of a chance for planting has proved a serious loss, and plants have spoiled in the seed beds while their owners have been waiting hopelessly for rain.

Possibly by the time these lines are printed the long-looked-for rain will have fallen in sufficient quantity to moisten the parched ground. There is unfortunately no certainty about this, but already welcome showers have fallen in some places, and barometers have been steadily falling in most, also the temperature. These are indications of a change, and a general downpour would be welcomed in thousands of gardens. The Americans also have warned us that a "depression" is crossing and will cause "local disturbance" on our coast. Very "local" indeed have been the effects of previous depressions of which we have been advised, and a good "general disturbance" is overdue.

Let no one imagine that their plants are too small or too much drawn for planting when the ground becomes fit for their reception—that is, those individuals who failed to plant early in the season. Mr. Iggulden some little time ago advised the insertion of even tall plants that have been languishing in seed beds, placing them slantingly in rifts formed with a spade. That was good advice to those who failed to plant earlier, and the advice holds good even yet. It is astonishing how miserable hard-stemmed leafless plants improve under the influence of autumn rains after a season like the present, when the earth has been made unusually warm by weeks of hot sun. The plants cannot attain a large size, but if three, four, or more are inserted in the space that is usually occupied by one a great quantity of acceptable produce may be had from the land, and especially if a long mild autumn is in store, which is not at all unlikely. At any rate those who foresee a scarcity of winter greens will act wisely in expecting a long autumn, and inserting accordingly such plants as they have or can obtain. Cabbages, Savoys, Broccoli in variety will all afford useful produce, especially Cabbages or Coleworts.

Fortunate are those individuals who have sufficient of these for planting large breadths of ground. In every garden where a supply of green vegetables must be maintained, seed of Coleworts, with any varieties of small Cabbages, should be sown freely about the middle of May. It costs little, and some hundreds or thousands of plants can be raised on a comparatively small plot of ground. It is best either to sow thinly or thin quickly to prevent violent crowding, and let

the plants remain in the seed beds till ground vacated by early Potatoes or other crops is ready for them, or the weather is favourable for planting. Put out now the plants need not be more than a foot apart, but if planted some weeks earlier a little more space may be accorded them with advantage.

From October right through the winter, and far into spring, the plants will yield produce of the first quality, and far superior to any of the Kales or Savoys, and quite as tender and delicate in flavour as Brussels Sprouts. These must be grown, but even in their absence there will not be very serious complaints of the quality of winter greens if there is an abundant supply of Coleworts and young Cabbages, with hearts not much larger than good-sized Lemons. These also endure more frost than many persons imagine, and as to the Hardy Green Colewort, it is seldom killed during very severe winters. It is as hardy as any other winter green, and its dwarfness gives it an advantage over most, inasmuch as it is often snugly protected with snow when its taller congeners are exposed to the rigours of a protracted frost. More than once all has been lost but the Coleworts, and in that case the supply of winter greens invariably gave complete satisfaction.

Market gardeners are more fully alive to the importance of this crop than private growers, as a rule, though some of them need no enlightenment on the subject. Thousands of these plants will be inserted in fields immediately the land is moist enough, and large breadths are now growing in gardens where their value is known and occasional showers enabled their being planted some weeks ago. They should still be inserted wherever they are provided or can be obtained, and they will do much to mitigate what appears to be almost a certainty of the future—a very inconvenient scarcity of green vegetables in winter and early spring.

Old Cabbage stumps are commonly cleared off the ground in large quantities at this period of the year, but persons should think twice before destroying them this season. In many, and probably the great majority of cases, it will be far more profitable to leave them, cutting off all the heads or hearts that are in any way firm—that is, if they can be spared, and clearing off all dead and decayed leaves. The appearance of the quarter will not be particularly inviting for a time; but the neatness will be an improvement on the mass of withering insect-infested leaves removed, and by-and-by, after the rains fall, the stumps will bristle with clean fresh growths, and eventually the old Cabbage plot will be the most admired in the garden. The forest of spring-like growths will be refreshing, and the owner or gardener will have the enjoyable privilege known as "cut and come again" for weeks or months, while the produce can scarcely be grumbled at by the most cantankerous of cooks. Do not, then, destroy old Cabbages during a summer like the present, but give them a chance of becoming young again, and proving their value and your forethought when the pinch comes—with other people.

Failing a supply of the plants above referred to—and it is certain they are very scarce in many places—the usefulness of Turnip tops should not be overlooked. Tons of these are sold in the markets in winter, or rather the early days of spring, and most acceptable they are. The slightly bitter taste of the growths of the common white Turnip may not find favour with all, but to many palates it is particularly agreeable, and ten times more of this variety are grown and sold for the purpose in question than of the Swedish Turnip, the growths of which are not bitter at all. Both may usefully occupy plots that in ordinary seasons would be filled with other vegetables, and a choice will then be afforded. For years past, when the ordinary kinds of garden vegetables have been plentiful I have had to send into the fields for Turnip tops as a change from Brussels Sprouts, Cabbages, and Kale. But it is not in all districts where this can be done; yet what cannot be gathered in fields may be produced

in gardens with the greatest ease, for all that is requisite is to scatter seeds on vacant ground and work them into the surface with a rake. In some gardens this is done as part of the ordinary routine of cropping, but by no means in all, and the advisability of extending the practice is worthy of consideration at the present time. There is at least this in its favour, that if the produce is not used it will be worth far more than the cost of the seed for digging into the ground as manure, especially in light lands. Seed may be sown at any time from now till the middle of September.

Spinach should be grown more freely than is customary in gardens where the vegetable supply is likely to be limited. This is a most wholesome vegetable, and when properly cooked and served, dishes of it are apt to be sent empty away. It is quite immaterial whether the round-seeded or summer Spinach, or the prickly-seeded or winter Spinach be sown now, and persons who have surplus seed of the former may use it with the variety purposely obtained for sowing at this period of the year. If there be any difference between the two it is not unlikely the so-thought tender variety will prove the hardier, and it will be at the least equally productive. I grew no "winter" or prickly Spinach for ten years, yet never failed to have an abundant winter supply with the summer or round variety. I presume the reason why the one is considered hardy and the other tender is because some fanciful or enterprising individual printed a statement to that effect at some remote period, and the compilers of catalogues have copied each other with characteristic fidelity ever since.

Is it generally known that the round-leaved Batavian Endive is excellent when cooked? Some persons enjoy it in that way better than any other, and it has on more than one occasion proved serviceable as a culinary vegetable in midwinter. Those who have plenty of plants or can raise them quickly might do worse than grow a few extra for the purpose indicated. Judging by the bare appearance of many gardens it is obvious that "something must be done," or there will be unpleasant reminders of the scarcity of green vegetables before spring Cabbages are ready for cutting; and we must remember that these will be late in many gardens, the dry weather having arrested the germination of the seed and checked the growth of the plants.

This is a plain article on a plain subject, yet not unimportant, for after all that can be said in praise of the skilful cultivation of flowers, it remains that the most important of all the duties of a gardener is to "keep the pot a-boiling."—*EXPERIENTIA DOCET.*

FRESH SOILS AND COMPOSTS.

THERE are two reasons why no better period during the whole year can be chosen for collecting and preparing soils for the ensuing winter operations in the fruit garden than the early part of September, provided the weather is dry. In the first place, soils should never be handled when in a close or stagnant state; and in the second, there can be no doubt that loams and other adhesive soils are then much fuller of the gaseous matter of the atmosphere than at any other period. Soils handled in a damp state become what country folks term "livered," or, as some have it, "soured,"—their particles become forced closer together, whereby the qualifying and wholesome air contained in their interstices is forced out, and the air cavities of course compressed. This occurs through the tread of the foot of either man or horse, and is also continually taking place through the action of the spade or other implement employed in digging and collecting it.

Soils thus circumstanced are with difficulty pulverised again: indeed, if buried orthwith below the ground level they will long retain these awkward properties, and if preserved in the compost yard, many months pass away, and some handling is requisite in order to get them in a wholesome condition again. They are fuller of the invigorating and mellowing agencies of the atmosphere in the end of summer, for it is well known how pent-up and stagnant moisture becomes evaporated by the heat of summer, the place of which must of necessity be filled with air.

Strong soils, moreover, contract much by drying, and this, as is well known, causes them to rift in all directions, which

mechanical action is of the utmost benefit to the soil, as ultimately promoting easy pulverising. We need scarcely add that the latter process is absolutely essential to fertility.

Now, a winter's fallow or exposure to the alternations of frost and thaw will produce the same mechanical effects; but then the soil becomes filled again with moisture. Thus it will be readily seen why the end of the summer is decidedly the most eligible time to collect soils. Another point recommends this course: the turfy material at this period contains a greater amount of organic matter than at any other period. Gross herbage will be found to prevail, and a vast accumulation of organic remains of the previous spring's growth, and we need scarcely say that all good cultivators esteem their soils in proportion to the amount of organic matter they contain.

We would have all young gardeners pay the utmost attention to these points. Much, very much, is to be learned from the study of this apparently simple affair. Of course the remarks here made apply principally to what are termed loams—that indefinite class of soils fully understood by the practical man, the squeeze of whose thumb and finger will determine with tolerable accuracy the character of such soils.

Now, it must not be supposed that in speaking of composts, soils, &c., that we would wish our readers to infer that we are continually harping about loam. It must be confessed that loam—good loam—is the very elixir of the compost yard; still, as we are not advising the year round about Strawberry potting, Melon culture, and the like, we must cast our eyes over the wants of the cottager and the amateur, and see what advice can be given them in the improvement of the staple in their respective plots, more especially as concerns fruit tree culture.

Various, then, are the materials that may be collected for such purposes, varying, too, with districts. Besides, the question is not always what ought to be had, but what can be had; and it so happens that many self-taught amateurs, possessed of much horticultural acumen, will turn materials to account which some gardeners would utterly despise. Amateurs, cottagers, &c., as well as folks already possessed of good gardens, frequently have to enclose and reclaim plots of ground where nothing of a loamy character exists. Sometimes the new plot is gravelly, sometimes very sandy, and oft-times of a peaty, boggy, or moor soil character. It not unfrequently happens, also, that the plot is in a town or in the suburbs, where, it may be, brick rubbish and the most ordinary soil lie side by side in pell-mell confusion.

In anticipating improvements in such soils or sites, the first thing, of course, is valorously to determine on thorough drainage if necessary. This we will take for granted. Next, to consider the general character of the plot, and if great inequalities exist in point of texture, to determine on making the clay help the sand and gravel, or *vice versa*, as the case may be. These things concluded and plans of culture laid down, it will be readily ascertained how much and what character of improveable material is requisite to carry out the plan. Such, then, forms a legitimate course of procedure for the end of summer, provided the chance offers; and an active and thinking person will set about getting together materials according to the demand.

We need hardly remind townsfolk or suburbaners of the facility that exists in general for getting together such imperishable materials as brick rubbish, old plaster, charred material, &c., by which to open the staple of soils hitherto retentive of moisture. On the other hand, the refuse of the carpenter's bench or workshop may be sought for such things as shavings, sawdust, &c., all of which are available as vegetable or organic matter to add to the embryo dung-heap.

The turfy material from ordinary commons or wastes is not to be despised because it is easily procurable. It is astonishing what an amount of nutritive qualities is contained in the surface skimmings of such places, albeit the staple of the soil beneath is below consideration. Here will be found an accumulation of vegetable matter, the work, it may be, of ages; and here by consequence, a vast amount of nutritive qualities which all organic matter in its progressive decay furnishes in a steady way to the generation of vegetables or trees by which it is superseded.

We have now been speaking of organic matter chiefly; for, indeed, many sterile plots need much in this way. We have many a time seen fresh garden enclosures or reclaimed waste lands, in which a thorough drainage and a liberal addition of such matters, would at once set the plot agoing.

Speaking of the obtaining of materials for improvements, we may here advert to the one of charred matter, and in so doing must beg to recommend those who wish to avail themselves of such a useful and profitable article to direct their attention at once to its accumulation. No better time can be taken for the purpose. Nature, ever bountiful in her vegetable pro-

ductions, has by the month of September covered every common and wild, every lane and roadside, and even the most barren moor with coarse herbage adapted to work up in this way. Moreover, the garden itself, with its appurtenances of hedge clippings and other coarse material, yields at this period an unusual amount capable of being made into a most useful component of a renewing compost.

Let us, then, advise strongly that this principle be attended to, and at this season; and that all weeds and rubbish be collected to one common spot, both to promote order and neatness and to augment the compost heap against the days of alterations and improvement.

We must again revert to the subject of loamy materials. Loams are used in general to give stability and consistence to shingly and incoherent soils. Now, since what the gardener terms loam, or "sound loam," contains a considerable percentage of clayey matter, it is evident that clay itself, or, what is better when procurable, marl, may be advantageously employed.

In the improvement of the staple, then, of loose or sandy soils, there is no doubt that even clay will be beneficial, provided it is laid on the land betimes in the autumn, and not blended with the soil until it has fallen to pieces, which will be the case by the month of March if it is turned and worked occasionally. In making stations for fruit trees on such soils, we should unhesitatingly throw masses of clay in a raw state on the proposed platform, taking care to introduce weedy or vegetable matter liberally amongst it, for the two will act well together for years as a preventive against extreme droughts, which so frequently cause fruits of various kinds to crack, as also the trees to be devoured with the red spider and other insects. Let it be remembered, nevertheless, that we are speaking of dry and light soils only; to pursue such a course on cool soils would be a most unwise procedure.

Marl, however, whether of the clay or slate kinds, is, of course, far superior to clay, but not everyone is fortunate enough to be situated in a marly neighbourhood. This may be blended liberally with all light or sandy materials for fruit tree stations, taking care that it is divided first, and adding vegetable matter freely.

Before concluding these remarks, we may be permitted to turn our attention to the amateur's Melons, Pines, Strawberries, and other fruits for forcing purposes. A good loam is almost indispensable for high culture in these fruits. Everyone should endeavour annually to procure a little fresh, for sometimes it becomes expedient to use it fresh, or to mix with other soil, as the case may be. What are termed furrowing clods are excellent for mixing with vegetable matter; and a stipulation may sometimes be entered into with the farmer, who would exchange such for manure; or they may sometimes be had for the labour necessary to procure them.—N. E. R.

TOMATOES.

THE consumption of Tomatoes is rapidly increasing, thus showing that the public is gradually rightly estimating them at their true value, either as a vegetable or as dessert, and this induces me to give a few notes regarding them.

Their culture is now generally understood, so that I shall only give a few observations on my own practice. The seed is sown thinly the first week in March when the late Vines are being started, then as soon as the seedlings can be handled we pot them in small 60's, and subsequently into 48's. Take care to let them have plenty of light and air, and strong plants will be easily obtained. I like plants from 9 to 12 inches high as thick as a finger, which require no stick or tying. Do not let young plants lose colour before putting them in their permanent quarters; loss of colour in foliage either means they are root-bound or not in a healthy condition, of course in hardening for outdoors this can scarcely be avoided. All my Tomatoes are fruiting in No. 4 or 6 pots, and as they mostly stand on hard ash paths the roots inside depend on what I give them, as supposing the roots find their way through into the ashes very little nutriment is to be found there. The simpler the compost until they set their first fruits the better, then feed them by top-dressing. In planting I only half fill the pots, gradually filling as they want it. Have the soil moderately firm, this acting two ways—first, insuring a much finer plant, and, secondly, taking less water. I take single stems up wires 9 feet long, not having only this limited length I stop the plants about 3 feet high, then again at 6 and at 9 feet. After first stopping, in addition to the leading shoot when it breaks, I let one or two laterals grow until they show their blooms, when they are stopped; by so doing an

increased quantity of fruit is obtained. I take out all weak side shoots.

This year the first blooms set very thinly, especially new varieties, but I always find the second year is better for new varieties; this is only, I suppose, because we know better how to treat them. For strong growing varieties cutting half the leaves helps the fruit considerably, but this operation requires care not to cut a large quantity away at one time, but a little daily. With many varieties it is as well to take the centre flower away, by so doing much finer fruits are obtained; generally the centre large flower comes to something very large but misshapen, and this certainly weakens the remaining bunch. However successful the pot system is, I cannot get the fruits so large as when I could plant them out, but I get more even fruits. I object to planting out if there is a chance of Tomato roots running into Vine borders, as they must rob and injure the Vines.

My own experience, together with that of several friends who grow for market, is, that however good and desirable the new varieties may be, there is nothing like a good selection of the Old Red for profit. I say this without detracting in the least from the merits of the new, several of which are handsome varieties.

SUTTON'S CHISWICK RED.—This is the best of all I grow in pots, having now bunches of twelve fruits hanging; it is a free setter and consequently prolific. The fruit is of fair size, of a good bright red, and in shape is certainly unique, being divided down the centre as though two fruits had been joined together. They come very true, not one or two good and the others indifferent. The only fault I have to mark is its light weight, and for its size it is very light. This is caused by its not being solid, but having a space between, or rather a cavity between the fruit-stalk and outer skin.

SUTTON'S READING PERFECTION.—A good Tomato for flavour, shape, and size; growth very robust. In pot culture this requires stopping directly the first blooms show. In a green state the fruit is a counterpart of Dedham Favourite for size and shape, but does not crack. This is a very solid fruit, a very great contrast to Chiswick Red. With me the crop is not very large, but I believe this is due to my not knowing its habit. I shall expect better results another time.

SUTTON'S CONQUEROR.—The seed from which I raised my plants were seven years old, showing that if seed is well managed it will keep a long time. I never wash the seeds, but simply put them on a damp flannel to clean them. This, a favourite variety of mine, is an enormous cropper, always sure, and very regular in shape; the only objection I have to it is the flatness of the fruit. Anyone can grow this either in or outdoors.

DEDHAM FAVOURITE.—Another favourite of mine, at one time objected to on the score of cracking just when the fruit was at its best, but I have overcome this by arranging the plants where they can get plenty of air and light. Judicious watering and ventilation are all that are required to grow it; neglect either, and the result is seen quickly. It is a good cropper, heavy, and of delicious flavour.

GREEN GAGE.—This should be named Yellow Gage; it is very pretty, of a brisk acid flavour for dessert, but very shy with me. Last year our Rec or had it much better growing against a wall outside. Under my care it is very robust indeed in wood and foliage, but does not fruit accordingly. I am keeping one plant poor and short of water to see the result.

VICK'S CRITERION.—A most abundant cropper, bearing egg or plum-shaped fruits of the same colour and quality as the preceding. Sometimes I find the clusters are apt to set three or four large fruits, the remainder being seedless or small. This, I believe, is for want of fertilising; a sharp shake when the flowers are dry and fully expanded will help them. I consider this good for growing in pots.

THE OLD RED.—I shall dismiss this in a very few words, as it is so well known and its culture is so simple that it must commend itself to all. Tomato growers who wish to be sure of what they are doing should save seed of this variety. I have ceased growing the Trophy, but as a friend is now doing well with it I shall try it again.

In enumerating the above varieties I do not say these are the only good ones, but they are the best I grow.—STEPHEN CASTLE, *West Lynn.*

CHOICE ALPINE PLANTS.

SAXIFRAGA HIRCULUS.—If we glance momentarily at the great genus Saxifrage we shall soon be alive to the fact that the majority of the species and varieties of which it is composed have, for the most part, white flowers. This is more especially the case with the mossy (hypnoides) section, and the crusta

ceous (or Aizoon) section. When the departure to this rule begins, the Megasea group is particularly noticeable with its bold spikes of pendent rosy-coloured blossoms. It is, however, remarkable to find so widely different a plant, both in foliage and flower, as the one mentioned above, not white or rose, but a bright and pleasing yellow, and more resembling *Anemone ranunculoides* in its flowers than those of the family to which it belongs. Its general aspect is widely different from any other Saxifrage. It is of free and easy growth, dwarf in habit, and delights in abundance of moisture, and being supplied with that does not object to full sun. The flowers, which are three-quarters of an inch across, rise from compact tufts of obovate leaves. It is best suited for marshy ground or for damp spots in the rock garden. It is a desirable plant in the artificial bog, and may also be grown to perfection in pots, which should be placed in pans of water. It is a native plant, being found in various parts among the moors.

SAXIFRAGA CYMBALARIA (Golden Saxifrage).—Speaking of yellow-flowered species reminds one of the pleasing little plant so profuse in its flowering, and needing no watching or particular care. It is without doubt one of the best plants for naturalising



Fig. 31.—*Iberis Tenoreana*.

being a free seeder, and coming up almost anywhere where the smallest portion of soil may be for it to root into. Even in hard gravel walks I have had it springing up abundantly year by year, the result of self-sown seed. It is of annual, or at the most, biennial duration, forming early in the year compact little tufts of glossy light green Ivy-like leaves and numerous bright yellow flowers. These are produced as the plant grows till quite late in autumn, and from the commencement it is always in flower. As it grows freely in a variety of situations it is well suited for naturalising, and by collecting and distributing its seeds very pleasing results may be obtained by the ensuing spring.

SAXIFRAGA GRANULATA FLORE PLENA.—I refer to this plant now to caution those unacquainted with its general habit from regarding it as dead and casting it away. I have known this to be repeatedly the case when it has gone to rest and its sole energies for the coming year are concentrated in those little granules beneath the surface. I may remark that it is well suited to damp situations in partial shade, and that it is also useful in a cut state. I have had some sprays of it quite ten days in water—a good test of its durability and consequent usefulness.

IBERIS GIBALTARICA.—This is the finest of all the Candytufts, but seedlings differ considerably. Under glass the flowers

are usually white, though not so good or clear a white as are some of the more hardy kinds. In the open ground its fine heads of flowers are generally of a reddish-lilac hue. It is larger in all its parts than any other species, of trailing habit, having oblong spatulate leaves. The individual flowers are long, and deeply and distinctly toothed. It is easily increased by seeds, and also by cuttings, the former making the best display. Seeds can be sown from midsummer to the end of August, and the plants grown on in pots make useful ornaments for the conservatory or for cutting.

I. TENOREANA.—A very handsome *Iberis* is that shown in fig. 31, and it is especially well suited for culture in pots, though it is also a fine rock plant. The flowers are large and round in compact massive heads.

IBERIS CORREÆFOLIA (Correa-leaved Candytuft).—I believe that respecting the origin of this plant there is some doubt, and that it is often confounded with the (Coris-leaved Candytuft) *I. corifolia*, from which it is very distinct, the latter only attaining when in flower a height of 3 or 4 inches, while the species to which I refer generally grows about 9 inches to 1 foot high. Mere height, however, is not a sufficient specific distinction, but there is a wide difference in the leaves of a *Coris* and those of a *Correa*, and considering that the two appear to have received their names from the similarity of their leaves to those of the two genera named, there should be no difficulty or confusion respecting them. The one to which I am now drawing attention is that commonly known as the white Perennial Candytuft, which produces globular umbels of pure white flowers. It is in full beauty from the middle to the end of May, depending on the season, and lasts a long time in perfection. It is hardy in the extreme, and is adapted for the rockery, the border, or for lines or masses. It may now be propagated by means of cuttings, selecting half-ripe shoots, and strip them off with a heel, inserting them under handlights in shady positions in sandy loam. The best cuttings will be those around the base of the plants, and when of 2 or 3 inches in length.

[We give an illustration, fig. 32, of the true *I. corifolia*, which is quite distinct from the hybrid *I. correæfolia*. The latter is also known by the preferable name of *I. coriacea*. We may add that *I. coriacea* or *correæfolia* was raised by Mr. H. Turner, formerly curator of the Botanic Gardens, Bury St. Edmunds, and is said to be the result of a cross between *I. sempervirens* and *I. saxatilis*. Mr. Turner relinquished his appointment in 1857, so that the plant must have been raised some time previous to that year.]

IBERIS SEMPERVIRENS PLENA.—The typical plant, or Evergreen Candytuft, is one which has many claims upon our notice; in fact few spring-flowering plants are better known than this, and few more universally grown. Its half-shrubby, dwarf, evergreen tufts are transformed in April to masses of snowy white, and which alone has given it a place in many gardens from which many plants have been excluded. It is indispensable in all spring gardens, is readily increased by cuttings or seeds, succeeds well in almost all soils, and is adapted to a variety of circumstances. We can deservedly say all this in regard to the original species; but how much more may worthily be said of the double form to which I wish to allude. Only those who have seen the two side by side can form an adequate idea of the superiority of the latter. It resembles in habit and general appearance the typical species, but differs in its snowy white heads of flower. In the former the yellow anthers are conspicuous, while in the latter they do not exist. Besides being valuable for the garden generally, it is, I think, destined to become a popular plant for cutting from, and being somewhat earlier in flower, will make it the more valuable, while for spring gardening it is sure to meet with many admirers.

SAXIFRAGA FORTUNEI.—A distinct species, being deciduous, and an autumn bloomer. As a pot plant for late autumn it is desirable, though it is by no means a common plant in gardens. It usually attains a height of 12 or 15 inches, seldom more. The leaves are large, fleshy, and somewhat reniform, the flowers are white, borne on pyramidal spikes. It is easily increased by division.

OMPHALODES LUCILÆ.—When referring to alpine plants some time since, your correspondent, "D, Deal," spoke of this as "disappointing." I believe that was the term employed. To my mind this is one of the most delightful of alpine plants. When seen in good condition its lovely sky-blue flowers are unique. It certainly has not the intense and lovely gentian blue of *Omphalodes verna*, but seeing that we have so plentiful a supply of this colour in the Gentians themselves, we can hardly wish a change to take place. It may be that your correspondent has not altogether succeeded with this plant, and if so, and his plant is a small one it may be, as your correspondent remarks

somewhat disappointing. Its dwarf caespitose tufts of leaves of glaucous hue, and the sky-blue flowers in profusion, seem to me the very type of sweet and modest grace and beauty. I have grown this charming little plant for years, and know something of its requirements. I remember well the great nuisance that slugs were to the first plants I ever had, and how I watched with anxious eyes lest it should suddenly be devoured, for slugs are particularly fond of it. After a year or two, when I became more familiar with it, I managed to root it in quantity from cuttings, which I believe was hitherto unknown, and from that time I could generally keep pace with the demand either by seedlings or cuttings. The seedlings in some cases were devoid of that pleasing glaucous hue which characterises the true plant, the flowers, however, being identical. I never saw it in finer condition than on the rockery of the late Mr. James Atkins of Painswick, where it grew with remarkable freedom. I have always found it to succeed best in about equal parts of peat and loam made rather sandy, and with plenty of depth for the roots. The way I used to obtain cuttings is as follows. Place a hand-light over the plant and keep comparatively close, giving air daily, still keeping it sufficiently close so as to excite new growth somewhat quickly. When 3 or 4 inches long, detach them with a heel from the main body and insert at once under a bellglass in very sandy soil, keeping quite close and well shaded. The seeds, which vary considerably in their germinating powers, sometimes lay dormant for eighteen months in the soil, others



Fig. 32.—*Iberis corifolia*.

will appear in a few months. These require very careful handling and watching, for it is in the very small state that they are most likely to be lost.

ERITRICHIMUM NANUM.—Another plant to which the same correspondent alludes as having defeated all his attempts to cultivate successfully, and I fear many more could tell the same tale. It is one of the loveliest of all alpine gems, its miniature blossoms and the intensity of its lovely blue flowers bearing favourable comparison to the intense blue of the Vernal Gentian. It is certainly a fastidious alpine, and one requiring much skill and considerably more patience to know what its actual requirements are. One thing, however, I consider as certain, and which is, that it will never be a long liver if placed or planted on the level, whether that level be the border, the rockery, or in pots. I have experienced it to damp off suddenly and unawares in these positions. What it seems to need most of all, and what is most difficult to supply, is abundant moisture in spring and early summer, in imitation of melting snows, and a dry bed in winter, during which season it is deeply embedded in dry snow. These conditions we cannot imitate in England, and consequently upon our variable winters, our incessant day by day changes, we are wont to lose a very precious gem among alpine plants. It would seem also to require that its tiny roots

should always be in the cool, and to meet this I have never found it to succeed so well as when placed between two flat stones, after the manner in which the Parsley Fern (*Allosorus crispus*) and the Scaly Fern (*Ceterach officinarum*) inhabit the stone wall and cliffs in many parts of England. Choose a crevice where it can be accommodated in this way, and for the winter season a piece of glass may temporarily be placed overhanging it to shoot the water from its downy tufts, for it is the excessive damp gaining a lodgment in its intense downy tufts that destroys the majority of the plants which reach this country alive. I have attempted growing it in frames, keeping air on during all weathers, and I must say the severer the winter the better it has pulled through; not so, however, in mild winters, when the atmosphere is so overlaid with moisture. This little gem is widely distributed throughout the whole range of the Alps, and is often found at great elevations. Though I have to some extent been successful in its culture, my success is by no means complete, and others who have done well with it would render service by stating the exact circumstances under which it is placed.—J. H. E.

LIFTING VINE ROOTS.

SOME gardeners—not all, of course—have a religious horror of touching the roots of their Vines once they are developed in the border prepared for them. They may be wandering deep down in some cold subsoil, the Vines may be showing unmistakeable signs of something wrong, and yet they hesitate to disturb the roots lest they kill the Vines altogether. But a Vine is wonderfully long-suffering, and will permit its roots to be entirely lifted, of course with care and skill, as though it knew that the present tribulation were but the forerunner of something good to follow. When Vines are suspected of having their roots in the subsoil, away from control, and from the proper nourishment they need to enable them to flourish, no time should be lost in lifting their roots.

Early spring or autumn should be chosen for the operation. The surface soil should be removed, and if good laid aside to mix in with the new compost afterwards to be applied to the roots. When the roots are approached a five-pronged fork should be used, and the soil gently and carefully removed from about them, care being taken that the soil is lifted in such a way that the roots run through the fork and are not broken by being caught sideways.

All the old soil having been removed, and as many roots as possible having been rescued from the subsoil, all the roots should be carefully laid back and some of the new compost filled in, the first layer of roots being spread out when the soil approaches to within 6 inches of the proposed top of the border. Sprinkle some fine soil freely mixed with Thompson's or other approved Vine manure over the roots, then fill in more good compost till within 3 inches of the top, then the remainder of the roots may be laid out, more fine soil put on, then a slight coating of good cowdung, and lastly a surfacing of a couple of inches of soil, leaving the border several inches higher than ultimately it is wished to be, as the whole will sink more or less. A supply of tepid water before the dung is put on will be of much service where the compost is on the side of being dry.

Vines treated in the manner described may be relied on, other things being favourable, to amply repay for the trouble and expense bestowed on them. When once Vine roots are near the surface they may easily be retained there by judicious feeding on the top. A little fresh soil and Vine manure added every year will keep them on the top, and will amply reward the bestower.

No mere tinkering will do when Vine roots are in the subsoil. "Up, men, and at them" must be the word of command, and there need be little fear that the result will be anything but entirely satisfactory. When Vines look sickly or show signs of failing health in nine cases out of ten such a course as described will work wonders—that is, of course, when the Vines are not eaten up with bug, as sometimes is the case, when the best plan is a total clearing out, a thorough cleansing, and planting other Vines.—S.

VIOLAS.

THE long spell of hot dry weather which has been severely felt even in the midland districts has fairly tested the staying qualities of Violas and bedding Pansies, for experience has shown me that some of our best varieties, especially yellows, will not stand heat and drought well.

I have for some years past been desirous of getting yellow self-coloured varieties free from any dark blotch or marking, and in Yellow Beauty, Yellow Dwarf, and other kinds I have succeeded, but they are not robust enough in constitution to stand hot dry weather. Queen of Spring is one of the best yellows which has no black blotch in it, and Golden Queen of Spring, a seedling from it, is deeper in colour, a more compact and stouter grower, a very early and continuous free-blooming variety, and

in every way a fine bedder. I find also that *Lutea perfecta*, a sturdy but compact-growing variety of a deep yellow colour, is one of our best hot weather varieties, and an immense bloomer. *Ardwell Gem* is of a primrose colour, of sturdy compact habit, and good constitution, and an early and continuous bloomer, and of a pleasing colour.

In whites, *Countess of Hopetown* must stand at the head of the list as a first-rate variety in every respect, very compact, short sturdy habit, and a great bloomer, flowering early and continuing in flower through the summer. It is a mass of flower with me early in August, notwithstanding the recent hot weather. I cannot speak too highly of this fine variety. *Mrs. Gray* another sterling variety, but a stronger grower, and has a tendency to discolour in hot weather; still it is a telling valuable variety and very fragrant, flowering early, and is a continuous bloomer. These two are our best whites. *Lady Polworth* is another really good white, of sturdy habit and well worth growing. In lilac or mauve coloured kinds *Elegans*, although an old variety, is still one of the very best, of a pale lilac colour, and a great bloomer; but being a strongish grower is more suitable for larger beds. It is a telling, showy, useful variety. *Duchess of Sutherland* and *Fairy Queen* are two capital varieties of a bright silvery lilac colour, and of close habit—viz., early and continuous bloomers and valuable bedders.

In purples and violets I find none more valuable and reliable than *Cliveden Purple compacta*, robust growing and more compact habited than *Cliveden Purple*, from which it is a seedling. It is rich in colour with larger flowers than its parent, and a capital bedding variety. *Queen of Purples* is another descendant of *Cliveden Purple*, and of dwarf compact habit, and a very free bloomer, and a telling bedder both early and late. *Queen of Violets* is of a rosy violet colour, dwarf compact habit and an immense bloomer; in England a first-rate bedder.

In blues a leading place must be given to *True Blue*, really a *Viola* of close sturdy habit and very free blooming, being very early in flower and continuous. It is really a blue and a very valuable bedding variety. *Archie Grant* is a stouter and taller grower, and a later bloomer, being really a late spring and summer variety of a rich blue violet colour, a capital constitution and habit, and a telling variety. *Holyrood* is an old but really striking bedding Pansy of a bluish violet colour, also a late spring and summer bloomer and very effective. *Lord Darnley* is a seedling from *Holyrood* and of closer and dwarfer habit, and of a very rich deep blue violet colour—a charming variety. One of the most striking *Violas* grown is *Queen of Lilacs*, a great improvement upon *Blue Bell*, a strong grower, of very hardy constitution, and a wonderful bloomer early and late. This is a variety for masses and is wonderfully effective. *Blue Bonnet* is a striking blue bedding Pansy of the *Blue King* type, and has a dark blotch in the flower; habit close and sturdy, and a very free bloomer.

We have now some most attractive blotched bedding *Violas* in *Countess of Kintore* and *Mrs. D. Hornby*, both very similar in colour and marking, rosy lilac, with large white blotches, but differing a little in habit, the *Countess* being the best of the two. They are very handsome bedders and flower early, and are continuous. *Duchess of Albany* is a new colour, soft shaded puce and lilac, a lovely variety of compact habit, and a free bloomer. *Skylark* is very distinct, white, with a sky blue margin, very pretty, and a good grower and bloomer. There are other varieties which I grow and value, but I have given enough names for a good useful selection to be made from.

I have long been of opinion that *Violas* and bedding *Pansies* will be more and more grown when people understand how to treat them. They should be planted in October or November for early spring work in firm soil and slightly mulched, and in hot weather I also mulch the ground with light manure. *Violas* are glorious from March until the end of June and later, but for summer bedding young plants should be planted in spring, using those which can be lifted with balls of earth if possible. *Violas* are very effective when mixed with *Pelargoniums*—for instance, the pure white *Mrs. Gray* with a pink *Pelargonium*, or the blue and grey *Queen of Lilacs* with yellow *Calceolaria*, and so on. I have seen glorious beds of mixtures in which *Violas* have played a leading part. There are a few stout constitutioned *Pansies* which should be generally grown, and this season has severely tested them as decorative plants. Both here and in a gentleman's garden in the neighbourhood, whose *Daisies* were burnt up by the heat, and *Alternantheras* and even *Rhododendrons* and other things were suffering severely, masses of *George Rudd Golden Yellow Pansy* were in luxuriant health and beauty, and I have written it down as a most valuable bedder. *Golden Queen* is a paler yellow and as valuable, and *Captain Hayter* is also a good habited sturdy yellow. White *Pansies* as a rule do not stand

heat well, and with the superb white *Violas* we have that do we do not want white *Pansies*; even *Pilrig Park*, a half-bred *Viola* and *Pansy*, goes off very much in hot weather. Dark *Pansies* also are not needed so much, as we have very first-rate bedders in the three varieties of hybrid bedding *Violas* I have already named, but many have a great fancy for a very dark velvety *Pansy*, and in *Uncle Tom* this can be had, a short-jointed stiff grower, flower large and good in form, and an abundant bloomer, and stands well.

Many *Violas* and *Pansies* fail from late planting. I am often applied to for plants in June and July, far too late for planting them. Spring planting should not be done later than May if possible. Autumn planting any time from August.—*WILLIAM DEAN, Walsall, Staffordshire.*

[Bunches of the freshest, brightest, and best *Violas* we have ever seen in August accompanied this communication, and they fully justify all that is said about them.]

CLASSIFICATION OF MELONS.

At the majority of shows there are two classes for Melons—one for scarlet-fleshed varieties, the other for green-fleshed sorts; but those who judge often find a curious mixture, and I think the classification requires altering. White-fleshed Melons appear to have become as plentiful as scarlet or green ones, but there is no class for them. As yet they are unrecognised, and they may often be found in both scarlet and green-fleshed classes. I have been told of some judges who have found fine-flavoured and handsome fruits in both classes, but they would have nothing to do with them, as they were neither scarlet nor green, and they were passed by in favour of inferior fruits of the specified colour. There is surely a mistake here, and something ought to be done to rectify it. For my own part I have always been in favour of taking them in when found worthy of it, especially in the green-fleshed class, but it would be better if the prizes were offered for "green or white" fleshed varieties. Many societies might not be able to see their way clear to add another class for whites, although I believe they would often be the best filled, but if the two were specified as suggested above it would do justice to deserving fruits and give all concerned a clear idea what to do.—*J. MUIR, Margam Park, S. Wales.*

WILT'S HORTICULTURAL SOCIETY.

AUGUST 20TH.

THIS, the first Show of the above resuscitated Society which has been held for twelve years, was opened in the episcopal grounds, Salisbury, on Thursday last. It would be hard to find a more suitable place for holding such an exhibition than the well-kept grounds, trim lawn, and well filled and arranged flower beds opposite the south front of the palace, and the shady walks under the shadow of the beautiful Cathedral. The Show was pronounced to be a great success in every respect, and should its future prosperity be correctly foreshadowed by its re-opening display, it will ere long rank among the first exhibitions in the south and west of England. The position of Salisbury is a central one horticulturally; moreover, the Lord Lieutenant of the county (the Earl of Radnor), the Mayor of Salisbury (Mr. Fulford) and his predecessors in the civic chair, citizens, and neighbouring gentry take a great interest in all matters pertaining to horticulture. The Society, too, is fortunate in securing the gratuitous and able services of Mr. W. H. Williams as its Secretary; and although the redoubtable Mr. Cypher did not appear, his place was ably filled in the way of staging grand plants by Messrs. Lock, Rann, Wills, and Mould. Fruit was well represented by supplies from Longford Castle, Marston, Longleat, Clarendon Park, and Rood Ashton, as a perusal of the prize list will show.

PLANTS.

In the class for twelve stove and greenhouse flowering plants Mr. Lock gardener to B. W. Cleave, Esq., Credion, Devon, was a good first, showing a grandly flowered lot of even, fresh, well-trained plants. His *Ixoras* *Duffi* and *Williamsii*, *Dipladenias* *amabilis* and *Brearleyana*, *Clerodendron Balfourianum*, and *Ericas* *Fairreana*, *Eweriana* *superba*, and *Marnockiana*, 6 feet through, were all grand specimens of good culture. Mr. J. F. Mould, Pewsey, was second, his best plants being *Ixora regina*, *Dipladenia amabilis*, *Bougainvillea glabra*, and *Erica Austiniana*; third Mr. Wills, gardener to Mrs. Pearce, The Firs, Bassett. His collection contained the best plant of *Statice profusa* in the Show, it being perfect in form, densely flowered, and 5 feet over. A superbly flowered *Bougainvillea glabra* was also very telling in this collection. For twelve fine-foliage stove and greenhouse plants, Mr. Rann, gardener to J. Warren, Esq., Hand Cross Park, Crawley, was a good first, showing highly coloured *Croton interruptus*, 9 feet over, and C. Warreni, equally well coloured, but a trifle smaller, a large *Latania borbonica*, a fine *Gleichenia rupestris*, and a handsome *Cycas revoluta*. Second Mr. Lock, whose best plants were *Gleichenia Spelunca*, 6 feet over; *Croton Williamsi*, C. Weismanni, and *Latania borbonica*. Third Mr. Wills, with smaller but fresh well-grown plants. Two extra prizes were awarded in this class, one to Mr. C. Penfold, gardener to General Sir F. Fitzgram, Leigh Park, Havant, Hampshire, and the other to Mr. Mould, who both showed good collections. Mr. Lock was placed first for six stove and greenhouse flowering plants, and Mr. Mould second; and for a like number of fine-foliage stove and greenhouse plants Mr. Lock was to the front again, his best plants in this class being grandly coloured *Crotons* *Disraeli* and *Truffautianus*; second Mr. Wills; third Mr. F. Smith, the Palace Gardens, Salisbury, both showing well.

For nine exotic Ferns and Mosses Mr. Lock was once more to the front, showing grand plants of *Davallia polyantha*, *D. Mooreana*, each 6 feet through, and beautifully fresh; a fine *Nephrolepis davallioides furcans*.

Second Mr. Wills, whose best plants were *Microlepis hispida cristata* and *Adiantum cardiochloënum*; Mr. Penford and Mr. F. Smith being placed equal thirds. Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was the only exhibitor of six Zonal Pelargoniums, distinct, and for a like number of variegated-foilage Pelargoniums Mr. Wills and Mr. West were placed first and second in that order. Mr. C. Warden, gardener to Sir F. H. Bathurst, Clarendon Park, Salisbury, was the only exhibitor of six pots of Liliun, and he was deservedly awarded the first prize. Mr. West was first for six Begonias; Mr. H. Wells, gardener to Dr. F. W. Coates, Salisbury, second; and Mr. J. Davidson, gardener to T. H. Staples, Esq., Belmont, Salisbury, third.

CUT FLOWERS.

These were shown largely, and for the most part well. For twenty-four single trusses of Roses Mr. C. Warden was a good first, showing a very fresh even lot of blooms, which, seeing that such veteran growers as Dr. Budd of Bath and Canon T. W. Girdleston, Sunningdale, were placed second and third in that order, reflected great credit on the grower. For twelve blooms the first prize went to Mr. West, the second and third not being awarded. For twelve Dahlias, distinct, first not awarded. Second Mr. J. Evans, gardener to Lady Ashburton, Melchet Court, Romsey. There was good competition in the class for eighteen bunches of cut flowers, distinct. Mr. F. Thomson, Norman Court Gardens, Salisbury, and Mr. C. Penfold were placed equal firsts, the former staging good blooms of *Cattleya crispa*, *Ixora Williamsi*, *Panacratium fragrans*, and *Dipladenia amabilis*. The most noteworthy feature in Mr. Penfold's stand being an immense bloom of the *Victoria regina* Lily, which, as is well known to many of our readers, is grown so well at Leigh Park. Third Mr. Evans.

FRUIT.

There were four collections of eight kinds of excellent fruit staged. First, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, followed closely by Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome; and Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge. Mr. Ward's collection consisted of Alnwick Seedling and Muscat of Alexandria Grapes, Dr. Hogg Peach, Pine Apple Nectarine, Moor Park Apricot, Brunswick Fig, Smooth Cayenne Pine Apple, and Captain Lark's Melon. Mr. Iggulden's best dishes being a good Smooth Cayenne Pine, Grosse Mignonne Peaches, Pine Apple Nectarines, and Black Hamburg and Foster's Seedling Grapes. Barrington Peaches, Apricots, and Eastnor Castle Melon were Mr. Miller's best dishes.

Grapes.—Out of seven stands of three bunches of Muscat of Alexandria Mr. Pratt, gardener to the Marquis of Bath, Longleat, Warminster, was easily first with three magnificent bunches, weighing in the aggregate about 11½ lbs. Mr. Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury, was second, and Mr. J. Evans, gardener to Lady Ashburton, Melchet Court, third. Mr. Pratt was again to the front with three large well-finished bunches of Black Hamburg, about half a pound heavier than the Muscats. Mr. Iggulden was an excellent second, showing smaller, compact, and perfectly finished bunches, Mr. Warden being a good third. Seven exhibitors staged. With three bunches any other black variety than Hamburg, Mr. Warden was placed first with well finished Madresfield Court; and Mr. Ward second with Alnwick Seedling. In the class for any other white variety than Muscat of Alexandria, the last-named exhibitor was first, showing three perfect bunches of Buckland Sweetwater, the central one weighing 4½ lbs., and those on either side of it 4 lbs. each. Mr. A. Miller was second, with Foster's Seedling. Mr. Ward staged, not for competition, eight bunches, consisting of two Muscat of Alexandria, two Madresfield Court, Black Prince, Gros Maroc, Alnwick Seedling, and Foster's Seedling, one bunch of each.

Mr. G. Lock was first for a Pine Apple, showing a fine Smooth-leaved Cayenne; and Mr. Ward was second with Providence. Mr. Iggulden had the best-flavoured Melon, showing a beautifully netted and well-coloured fruit of Hero of Lockinge; and Mr. Thomas Wilkins, gardener to Lady Theodora Guest, Iwood House, Henstridge, was second. Six fruits were staged. Mr. F. Thomson, gardener to W. Baring, Esq., Norman Court, had the best six Peaches in Barrington, and Mr. Ward the second best with Bellegarde. Mr. Thomson was again to the front with Nectarines, showing an even dish of Elruge; and Mr. Miller was a good second with same variety. The last-named exhibitor had the best twelve Plums, and Mr. Ward the second best, the former showing a fine dish of Green Gage, and the latter Old Orleans, the third prize going to Mr. Iggulden. For Apples, three dishes of dessert and a like number of kitchen varieties, Mr. Evans was awarded first honours, Mr. Iggulden second, and Mr. F. Smith, the Palace Gardens, Salisbury, the third; but in the opinion of some the first and second awards in this class should have been reversed. Mr. F. Smith was the only exhibitor of four varieties of Pears, and he was deservedly awarded first honours for clean even fruits of Louise Bonne of Jersey, Marie Louise, Williams' Bon Chrétien, and Jargonelle.

VEGETABLES.

These were shown largely and well for the season, there being no less than nine exhibitors. The first prize was secured by Mr. F. Wilkins, who, in his first attempt in this class of garden produce, staged excellent samples of Autumn Giant Cauliflower, Intermediate Carrot, Girtford Giant Bean, International Kidney Potato, Wright's Giant Perfection Celery, Student Parsnip, Reading Tomato, Purley Park Hero Cucumber, Gladiator Peas, White Elephant Onion, Purple Globe Artichoke, and Pragnell's Exhibition Beet. Mr. A. Miller was a good second, his best dishes being Stamfordian Tomatoes and Autumn Giant Cauliflower; and Mr. Richards, gardener to the Earl of Normanton, Somerley House, Ringwood, was a good third. Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, was the only exhibitor of a collection of six varieties of salading, and for which he was awarded a first prize. There were no classes provided for single dishes of vegetables, such as French Beans, Tomatoes, Peas, and Cucumbers, an omission which we hope will be remembered when the next schedule is being framed.

AMATEURS' CLASSES.

These were fairly well contested, and the exhibits on the whole moderately good. Mr. J. Curry, gardener to Colonel Pepper, Salisbury, being the

only exhibitor of six stove and greenhouse plants, was awarded a first prize for the same; and for a like number of F rus the first prize went to J. W. Lovibond, Esq., Salisbury, for a good collection; the second to Mr. H. Gregory, Fisherton Mills, Salisbury; and the third to Mr. J. Curry. The last-named exhibitor was the only contributor of six pyramically trained Coleuses, and for which he was awarded first prize, his plants being small but beautifully coloured. Mr. Gregory was the only exhibitor of three pots of Liliun auratum, and to them was awarded chief honours. Mr. Curry secured first prize for six Zonal Pelargoniums, and Mr. Lovibond first for four variegated-foilage plants of the same old-fashioned but popular flower.

Fruits.—For two bunches of black Grapes Mr. G. H. Farrant, Bemerton, was first for fairly good bunches of Black Hamburg; second Mr. Gregory with the same variety, the third going to Mr. J. Curry. Mr. Lovibond was easily first for a like number of bunches of white, showing Muscat of Alexandria, the second and third going to Mr. Gregory and Mr. Curry in that order, both showing Foster's Seedling. Mr. Gregory had the best-flavoured Melon, showing a well-coloured and neatly netted fruit of Dr. Finch—a locally named variety of the Blenheim Orange type. Mr. Lovibond had the best dish of Peaches; and Mr. Guillaume, Oriental Place, Southampton, the best dish of Plums; and Mr. C. Mood, Salisbury, had the best three dishes of culinary Apples, and Mr. G. Smith, Salisbury, was second.

LADIES' CLASSES.

As is usual at the majority of exhibitions, the ladies' classes were well contested, and the arrangements for the most part were extremely light and graceful. For a dressed flower vase for the decoration of the dinner-table, the first prize was awarded to Mrs. Farrant, Bemerton, with a rather massive arrangement. Second Miss Prewett, Hammersmith; and third Miss Bessie Flight, Winchester, for an extremely light and admirable arrangement, and which, in the opinion of many competent judges, should have been accorded the premier award—that is, it should have changed places in point of merit with the heavy arrangement that was placed first. Miss Griffin, Wilton Road, Salisbury, had an extra prize given to her stand. For a dressed vase for decoration of drawing-room, the awards were more consistent with the merit of the individual arrangements. First Miss A. Flight with an elegant arrangement. Second Miss Lovibond. Third Miss Griffin. For three buttonhole bouquets, first Miss Prewett, second Lovibond, third Mrs. Brittain, Salisbury, all displaying good taste in their arrangements. In the class for ladies' shoulder sprays Miss Prewett was to the front once more for a neat combination of lightness, colour, and simplicity. Second Miss Staples, Belmont, with light and excellent sprays. Third Mrs. Brittain, an extra prize being given to Miss Mathews, Quidhampton.

MISCELLANEOUS.

The principal feature in this class was the magnificent collection of Roses, Dahlias, and Gladiolus staged by the well-known Castle Street firm, Messrs. Keynes, Williams & Co., and which made quite a grand display in themselves, the whole of them being so good as to render the singling-out of any particular variety or bloom quite superfluous. Messrs. Cross & Steir of The Canal, Salisbury, also put up several excellent stands of Roses, The Governor, and Gloire de Nancy Carnations. Mr. King, florist, Western Road, Lymington, showed some excellent blooms and small plants of double and single Begonias as also did Messrs. Brittan & Son, of the Waterloo Nursery, Salisbury. Several stands of good Roses, and some plants of Liliun auratum from Longford Castle Gardens helped to give effect to the two tastefully arranged tents.

FRUIT AT CHISWICK.

It is a long time since the fruit crops, of Pears especially, were so fine in the Royal Horticultural Society's Gardens as they are this season. The pyramid trees, which are very numerous, are models of their kind, the majority appearing to be from 12 feet to 15 feet high, the main branches thinly and regularly disposed, yet so sturdy and strong that it is rare to find one dragged down by the weight of the fruit.

The trees have all been summer-pruned for some time past, and the fruit is displayed to the best advantage, and receives the full benefit of the sun. Many of the trees that are bearing so heavily have the soil "dished" for 2 or 3 feet round the stems, so that water could be given more effectively, and in addition those bearing the heaviest crops have been thickly mulched with manure. But for this assistance the fruit could not have been supported; as it is, some is rather small in consequence of the serious and protracted drought; still, should rain fall soon and copiously, the fruit will swell considerably. The value of the attention given is manifest by the condition of trees that have not been assisted in the manner indicated, for it was impossible to water and mulch all of them; in fact, the outlay would not have been justifiable in the case of trees on which the crops are light, and these trees are flagging by the drought, while those assisted are fresh notwithstanding the great weight of the crops they are bearing. It is quite apparent that if these trees had been left to "take their chance" the fruit would have been comparatively worthless and the trees exhausted, whereas the crops are of substantial value, and the trees, with few exceptions, are capable of bearing similar crops next year.

It is customary to water and mulch Roses, Dahlias, and other flowers for the production of fine blooms, but as a rule even heavily borne pyramid and bush fruit trees in gardens receive no such assistance. That is a mistake, for fruit trees benefit by extra support accorded them as markedly as flowering plants do, and give at least an equal return to the cultivator for his care.

A number of dwarf Apple trees worked on the French Paradise and Doucin stocks some half a dozen years ago are marvels of productiveness. They are simply clustered with fine, clear, well-fleshed fruit, and it has been necessary to assist the branches to bear the weight of the crop. The condition of the trees strikingly show the relative influences of the stocks on

which the varieties are established, and nearly if not in every instance the superiority of the Doucin is apparent. The trees are planted 3 feet apart in rows, say a dozen trees on one stock and a similar number on the other in the same row, all having been grafted on the same day. The crop of the valuable Stirling Castle Apple is prodigious, but while the trees on the Doucin are twice the size of those on the Paradise and equally fruitful, it is evident those on the latter stock will not continue healthy and productive for many years. Of Cellini there is a splendid crop of excellent fruit, the trees on the Paradise being 2 to 3 feet high, those on the Doucin 4 to 5 feet, the larger bearing fruit as freely as the smaller. Yellow Ingestrie on the Doucin is laden with its small golden fruit, and it is clear the stock suits this favourite market dessert Apple. Cox's Orange Pippin is excellent on both stocks, if anything the fruit being a trifle finer on the Paradise, but it is only a trifle, and the larger, healthier, yet fruitful trees on the Doucin show this to be the more serviceable stock. On the same stock the valuable and almost certain bearing Apple, Small's Admirable, is healthy, though the branches are wreathed with fruit, which is finer than on the smaller trees on the Paradise. New Hawthornden is very fine and colouring well on the Doucin, good, but not so well coloured on the Paradise. Van Mons Reinette, on the Doucin, is free and upright in growth, and bearing an excellent crop of attractive fruit. Baumann's Red Winter Reinette is bearing large beautifully coloured fruit, red all over, and would be tempting in the market in winter. Young trees of Lane's Prince Albert on the Paradise are healthy and bearing well, and it is evidently an excellent variety for fruiting in a small state. Stone's Apple or Loddington Seedling is not well adapted for bushes, being loose and irregular in habit. The crop is light, but fruit fine. Lord Suffield is very fine indeed, but no Apple in the collection attracts more notice than the Duchess of Oldenburg, which must be regarded as one of the most handsome and useful of early Apples. The fruit is large, pale yellowish green, marked all over with distinct red streaks. It is quite ripe now (August 24th), and is unsurpassed for culinary purposes, and not to be despised for dessert. It is a thoroughly good Apple, and the tree grows well and bears freely. This experimental quarter of Apples is both attractive and instructive, and is worthy of inspection by all who can visit the Gardens at the present time.

The Plum crop is variable. Samples were being gathered for the exhibition at South Kensington, but only a few were quite ripe. Oullins Early, however, was over, and Mr. Barron regards it as one of the best early yellow Plums. Angelina Burdett is one of the most delicious purple Plums; Bradshaw is one of the largest dark varieties; and the most productive of all, regardless of colour, is the well-known and very serviceable Denyer's Victoria.

Under glass there are plenty of Grapes. The large vinery is well furnished as usual with useful bunches, and as some persons take an interest in Vine vagaries, it may be noted that a Vine of the Gros Guillaume, trained horizontally with rods taken upright at intervals, appears as if bearing a succession of fruit, the fruit on the rod most distant from the root being black, that on the rod directly over the root green and small, while on the intervening rods the bunches are more or less coloured according to the position of the rods, the colour deepening according to their distance from the main upright stem or root of the Vine.

But the Vines most deserving of mention are the Gros Colmans with a few Alnwick Seedlings in the long corridor-like house. They are in first-rate condition this year, far better than usual, with thick healthy foliage and large rapidly swelling fruit. The border was thickly covered with rich manure some weeks since, and this having been kept constantly moist—not with mere sprinklings, but heavy supplies of water—has been taken possession of by a mass of feeding roots, which are bristling through the surface and doing good work for the Vines and crop. If this plan of mulching were adopted more generally, instead of having the surface of Vine borders loose and dry, there would be fewer complaints about failing Vines and inferior Grapes.—A VISITOR.

NATIONAL CARNATION AND PICOTEE SOCIETY. (NORTHERN SECTION.)

THIS Show was held as usual in the Town Hall, Manchester, and with the prize list a correspondent sends the following remarks:—

"The Show was as a whole very bright in bloom, but short in quantity of flowers. Only eighteen exhibitors were able to come up. The date was too early for some of the cold north districts. Mr. Lord's flowers were the best in general condition and splendid examples of sound culture."

The following is the list of awards:—

For twelve Carnations all dissimilar.—First, Mr. R. Lord with Curzon, John Harland, Ranger Johnson, Hextall, Sybil, E. S. Dodwell, James Douglas, Clipper, Mrs. Dodwell, E. Adams, Unexpected, Mercury; second, Mr. B. Simonite with Sybil, Sarah Payne, Florence Nightingale, A. Medhurst, H. Cannell, Master Fred, J. Douglas, seedling (Simonite), seedling (Horner's No. 6 rose flake), Joseph Crossland, Sportsman, and a seedling; third, Mr. G. Geggie, whose best flowers were Master Fred, W. Skirving, Sybil, and J. Douglas; fourth, Mr. F. Law, whose best flowers were Squire Meynell, J. D. Hextall, Sybil, and J. Douglas.

For twelve Picotees all dissimilar.—First, Mr. R. Lord with Mrs. Lord, John Smith, Ann Lord, Thomas William, Clara Penson, Master Norman, Loddington Favourite, Miss Wood, Mrs. Niven, Zerlina, R. Scott, and Elise; second, Mr. B. Simonite with Constance Heron, Mrs. Gorton, Brunette, two seedlings, John Smith, Princess of Wales, Dr. Horner, Mrs. Nevin, Muriel, J. B. Bryant, and Mary; third, Mr. G. Geggie, whose best flower was Clara Penson; fourth, Mr. F. Law, whose best flowers were Clara Penson and Mrs. Gorton.

For twelve Carnations, nine to be dissimilar.—First, R. Gorton, Esq., with E. S. Dodwell, Skirving, Merryweather, Foster, R. Johnson, Master Fred, Harrison Weir, G. Adams, and F. Nightingale; second, Mr. J.

Bleackley, with Master Fred, J. Douglas, Sybil, Sportsman, Falconbridge Curzon, Clipper, Keats, Lord Napier, Squire Llewelyn, and M. Nottingham.

For twelve Picotees, nine to be dissimilar.—First, Mr. J. Bleackley, with Brunette, Zerlina, Thomas William, Edith Dombrain, Alliance, Her Majesty, Liddington Favourite, Miss Wood, and another; second, Mr. J. Whitham, with Zerlina, J. B. Bryant, Clara Penson, Miss Horner, Thomas William, Miss Wood, Brunette, John Smith, Ann Lord, and Edith Dombrain; third, R. Gorton, Esq.; and fourth, Mr. W. Slack.

For six Carnations, all dissimilar.—First, Mr. J. Whitham, with E. S. Dodwell, Lord Raglan, Tim Bobbin, Curzon, J. Douglas, and H. Cannell; and second, Mr. G. Thornley, with Curzon, Raglan, Squire Trow, J. Douglas, Clipper, and Keats.

Six Picotees, all dissimilar.—First, Mr. E. Shaw, with Daisy, Clara Penson, Alice, Her Majesty, Miss Horner, and Miss Wood; second, Mr. G. Thornley, with Mrs. Rudd, Nymph, Miss Horner, Mrs. Prescott, Burdett Coutts, and Norfolk Beauty.

Extra class for twelve fancies.—First, Mr. R. Lord; and second, Mr. F. Law.

Premier Carnation.—Curzon from Mr. R. Lord.

Premier Picotee.—Zerlina from Mr. J. Bleackley.

SINGLE SPECIMENS.

Scarlet Bizarre Carnation.—Mr. R. Lord, all the prizes with Curzon.

Crimson Bizarre Carnation.—First, R. Gorton with Harrison Weir; second, G. Geggie with Master Fred; third, J. Bleackley, with E. S. Dodwell; fourth, G. Geggie with Master Fred; fifth, R. Lord with Master Fred.

Purple Bizarre Carnation.—First, J. Whitham with E. Dodwell; second, S. Barlow with Sir G. Wolseley; third, J. Whitham with H. Weir; fourth and fifth, R. Gorton with H. Weir and W. Skirving.

Scarlet Flake Carnation.—First, G. Geggie with H. Cannell; second, B. Simonite with Tom Powell; third, J. Bleackley with Sportsman; fourth, J. Chadwick with Ivanhoe; fifth, B. Simonite with seedling.

Rose Flake Carnation.—First, R. Lord with J. Keats; second, W. Taylor with Crista Galli; third, G. Geggie with Crista Galli; fourth and fifth, W. Taylor with Crista Galli.

Purple Flake Carnation.—First, B. Simonite with J. Douglas; second, G. Geggie with M. Nottingham; third, F. Law with J. Douglas; fourth, J. Bleackley with M. Nottingham; fifth, G. Thornley with Squire Trow.

Heavy Red Picotee.—First, G. Geggie with Master Norman; second, R. Gorton with John Smith; third, W. Taylor with John Smith; fourth, W. Taylor with Brunette; fifth, G. Geggie with Haversley.

Light Red Picotee.—First, second, third, fourth, and fifth, R. Lord with Thomas William.

Heavy Purple Picotee.—First, R. Lord with Mrs. Nevin; second, J. Whitham with Zerlina; third, J. Bleackley with Mrs. Nevin; fourth, R. Gorton; fifth, J. Bleackley with Zerlina.

Light Purple Picotee.—First, J. Whitham with Ann Lord; second, G. Geggie with Clara Penson; third, R. Lord with Alice; fourth, J. Bleackley; and fifth, E. Shaw, with Clara Penson.

Heavy Rose Picotee.—First, second, and third, R. Lord with Mrs. Lord; fourth, G. Geggie, and fifth, F. Law, with Miss Horner.

Light Rose Picotee.—First, third, fourth, and fifth, R. Lord with Miss Wood, Elegant, and Miss Horner; second, J. Whitham with Miss Wood.

HERBACEOUS PLANTS.

I AM too fond of these plants to find fault needlessly with those who advocate their culture, and if therefore I have to dissent from your correspondent, "N. R.," he may rest assured that it is in no captious spirit that I do so, but with as earnest a desire as he himself has that their culture should be extended.

I have long concluded that service, and good service too, would be done to the cause, if not only plants that were good should be recommended, but that those of inferior merit should be pointed out, that they might be avoided, and I fear your correspondent will think me a "gone coon" when I say that long ago I tabooed *Liatris spicata*, and turned it out of my garden, and that too for the very reason that he praises it. It does commence to bloom at the top, and the consequence is that as the spike progresses in flowering you have a collection of dirty-looking dead flowers at the top, and a very few at a time in flower below that. Nor is to me the colour a taking one, being of a very dull purple—so do tastes differ! As to massing it, I cannot conceive, for the reasons I have stated, a more undesirable plant; but what perplexes me above all is his praising *Inula glandulosa* as one of the most beautiful blues we possess. A lovely and most desirable plant it is, but it is of the richest orange yellow, soft and exquisite in its form, falling over like tassels of brilliant-coloured silk. What plant can he mean? I have not gone on my own knowledge only of the plant, but I have consulted various catalogues, and all give the same description. The plant at this season for blue is *Platycodon grandiflorum*, a plant allied to *Campanula*, with large open flowers of a beautiful blue colour. It seems to be rare, for I do not find it under that name in either Paul's, Ware's, or Backhouse's lists. There is a dwarf variety of it which I have not seen.—D., Deal.

SPECIALTIES AT THE ANTWERP SHOW. NOTABLE PLANTS.

RUBUS AUSTRALIS.—The settlers in the great southern continents have bestowed a very characteristic name upon a plant which grows rather plentifully in some parts, and which probably proved an unpleasant acquaintance when clearing fresh ground became necessary. The plant is *Rubus australis*, and the popular title is "Lawyers," which is said to have been given to it because, owing to the large number of small curved spines that clothe the stems and leafstalks, it holds fast those who come in contact with it, and few manage to release themselves without suffering personal damage. Whether the name is appropriate or

not matters little; the plant is a peculiar one, and is grown in botanic gardens and other collections of singular plants chiefly as a curiosity, though we rarely see a plant of more than a few feet in diameter, and that is quite large enough for most gardens. At Antwerp, however, an extraordinary specimen was shown, and it is doubtful if there is such another example in cultivation. This was of columnar form, about 3 feet in diameter and 12 feet high, a dense mass of growth the whole height, and so plentifully armed with its sharp little white spines as almost to deserve the title "*ferox*," which botanists bestow upon some of the most formidable plants. It was exhibited by Madame Olivier Le Jeune, Château de Trogenten, Berchem, who was awarded a silver medal for it in the class for an ornamental-foliage plant, and no doubt she is proud of her plant as a unique specimen of its kind.

COCCOLOBA PUBESCENS.—In many English gardens may be seen a curious and interesting little plant named *Coccoloba platyclada*, which is remarkable for its strangely flattened leafless branches, that look as if they had been very carefully pressed out with a heavy iron, or as if some antiquated herbarium specimen had been suddenly resuscitated without having time to resume its normal rotundity of stem or fill its vessels with sap. Between this plant and that named at the head of the paragraph, *Coccoloba pubescens*, the contrast is very striking, and though visitors to the Antwerp Show had not the opportunity of seeing the two plants together, yet those who remembered the little plant in collections at home could not help remarking how great was the difference between them. *C. pubescens* was shown by several exhibitors in capital condition, notably by M. Pierre F. Boutmans, of the Lille Botanic Garden, who obtained a silver medal for it, and by M. A. Dalliére of Ghent, who had it in a class for three foliage plants, and gained a silver-gilt medal. These were large specimens 10 feet high or more, and the immense leaves, 2 or 3 feet in diameter, clasp the stem closely at the base, imparting a most strange appearance to the plant, especially as they have a rough "bullated" or Savoy-like surface. In a few botanical collections it may be seen in England, and then, perhaps, as at Kew, can also be seen the *Grias cauliflora*, which has even larger leaves, but scarcely has a more peculiar appearance.

A VARIEGATED PALM.—The two large families of Palms and Ferns do not give us many examples of variegation, and the former have still fewer than the latter, for amongst the Ferns, especially in the Pterises, occur some cases of diverse colouration, whereas any approach to this condition is very rarely seen in the Palms; therefore the plant shown by M. Arthur de Smet, Ghent, named *Areca Baueri variegata*, possessed some interest as a departure. It was, however, very young, being described as a seedling of the present year, and in consequence, though there were evident signs of variegation, it would be quite impossible to say whether it would be likely to keep this character as it developed; still we may hear something more about it, and really well-marked variegated Palm would be a good addition to our foliage plants, though even if the variegation were fixed in one plant it is not very clear how it could be propagated.

CARNATION SOUVENIR DE LA MALMAISON.—At Kensington recently we had a grand exhibit of these handsome Carnations recently from vigorous plants with abundant beautiful flowers, but it was satisfactory also to find that in Belgium the culture of these useful plants is also understood, and that they are as highly appreciated as they are here. M. B. de Lombaerde, 52, Rue de Jérusalem, Schaerbeek, had some particularly fine plants, and well merited the silver-gilt medal awarded for them; but several other exhibitors had nearly equally creditable specimens, especially notable being those from M. Jean Everaerts, Vieux-Dieu, who contributed so liberally from his charming garden, though the same exhibitor had some admirable groups of Gloxinias, Coleuses, and Pelargoniums; the Carnations were unquestionably the best, and their culture is evidently well understood by M. Everaerts.

It is not necessary to make special reference to any others of the numerous notable plants exhibited, but a few words as to the general system of management may be given, especially as some reference has already been made to some slight shortcomings as viewed from a British standpoint. In the first place there is one regulation which is carried out in such a satisfactory manner that it deserves the highest commendation, and this is the labelling of the plants. The great majority of the labels are printed in clear bold type, and the names being correctly spelled they serve an educational use, which is too seldom the case at British exhibitions, where labelling the plants is often left to assistants who occasionally have somewhat erratic ideas in regard to botanical names, and give expression to them in a very peculiar caligraphy, so that between mis-spelling and illegibility visitors who are unversed in the mysteries of plant-nomenclature are not likely to gain very clear notions on the subject. At Antwerp the exhibitors had their cards printed at their own expense, but this even when several hundred plants are shown is not a large outlay, and an ample return is afforded in the satisfaction of having them neatly and correctly named.

The exhibits are distinguished until the judging is completed in a similar manner to that adopted at many of our provincial shows—namely, all are numbered, and those of each exhibitor run consecutively in the order of the classes in the schedule. As the prizes are awarded the numbers of the winning exhibitors are entered in a book under the class by the secretary of each group of judges. This is then returned to clerks, who are entrusted with duty of writing out the prize cards, which are then placed to each exhibit as with us. The system is not so simple and expeditious as that adopted at South Kensington, but it has the advantage, if it can be considered one, of removing all means of determining the respective exhibitors while the plants are being judged, unless the

specimens can themselves be recognised, as must be frequently the case there as it is here. It cannot, however, be commended. Judges should be above all suspicion, and these evident signs of doubt must be unpleasant to all who wish to perform their duties conscientiously.

A word of praise is also due to the excellent catalogue of the exhibits

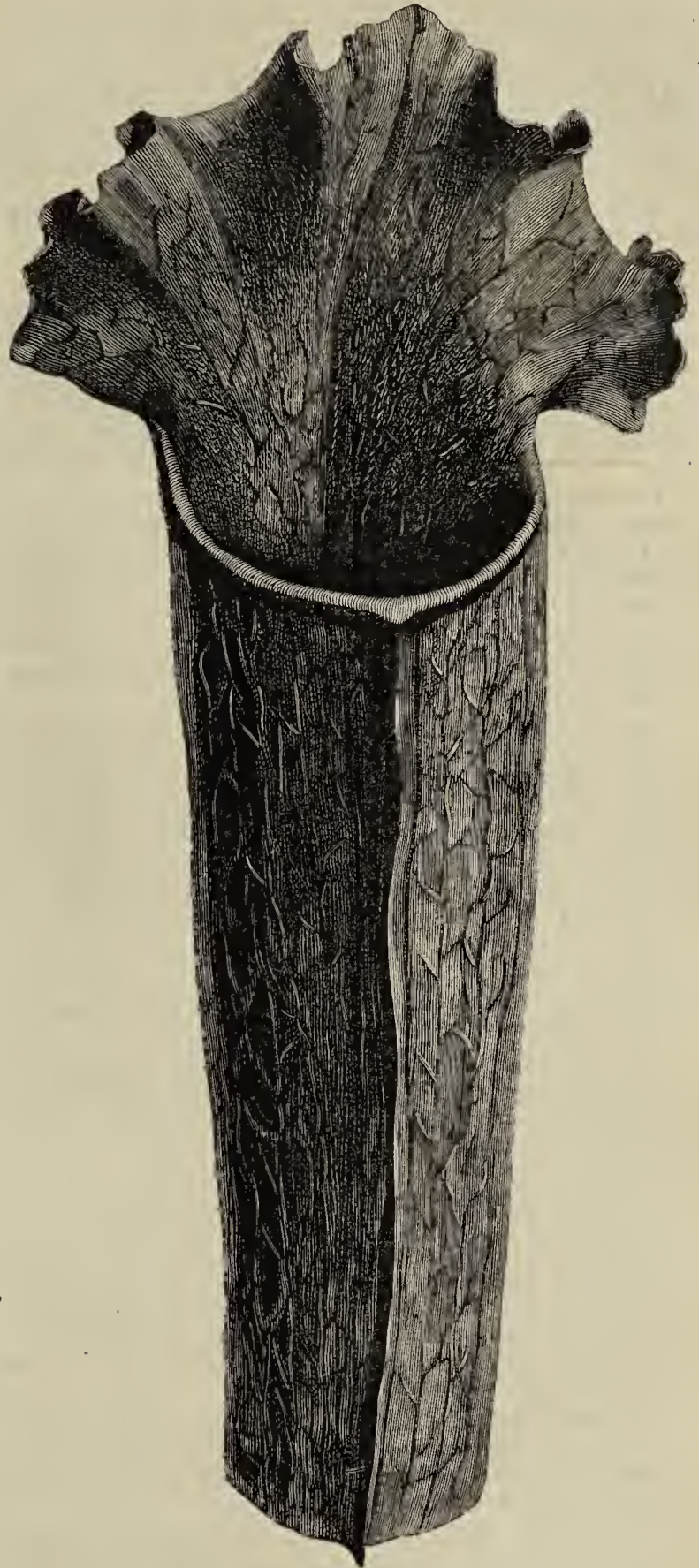


Fig. 33.—*Sarracenia Patersoni*. (See page 186).

and prizetakers, which considering its size (260 pages), was issued very quickly, being on sale by noon of the opening day, or within twenty-four hours of the time the Judges made their awards. In this the first part was devoted to the names of the exhibitors, under which were given their entries in each class, and in many cases the names of the plants shown. In the second part the classes were given in the order of the schedule, and the names of the prizetakers with reference to their entry number. Full lists of the Jury were also included, and the whole was neatly printed on good paper. Our exhibitions are rarely of sufficient duration to necessitate

a catalogue of this character, but in these few exceptional cases we might well take a lesson from our neighbours in Belgium.—L. C.

VINE VAGARIES.

ON reading what I wrote on this subject last week, I fear I have not made the subject as clear as I should have done. At the end of the second paragraph I write, "We put bottle grafts of the former on each Vine above the junction of the two sorts." I should have written, We put bottle grafts on some above the junction of the two sorts, and on others on one or other of the Vines below the junction and removed the other; thus we have some on the Muscat only, some on the Barbarossa only, and some on the Barbarossa above where it is united to the Muscat, and it is on this latter on which the Grapes are so much later than they are on the single stock of either sort.

In the last paragraph for "every May" read every way.—WM. THOMSON.



IN reference to the NATIONAL PEAR CONFERENCE, Mr. N. H. Townall writes—"Your note appended to my remarks is ominently fair, and just, and needed. With the hope that the lessons learnt at the Congress in 1883 will be carried into beneficial practice at the Pear Conference in 1885, I am satisfied, or shall be."

— WE are desired to state that LORD BEACONSFIELD RASPBERRY, figured in these pages last week, was raised by Mr. Faulkner, Inkpen, Hungerford.

—"T." writes—"The exhibition OF ORCHIDS is greatly extending and the amount of interest and curiosity displayed by the public when viewing them is such as to encourage the hope that a much more general appreciation of, and interest in, these wonderful plants will be developed. With the increased knowledge of Orchids as seen at flower shows, there will, no doubt, come the desire to cultivate them, and the enormous quantities now imported warrant the belief that they will soon—in many cases, at least—be popular plants at popular prices."

— AN edition *de luxe* of Mr. Percy Lindley's "WALKS IN EPPING FOREST" has just been issued, and forms a very pretty volume. It is bound in vellum, with gilt lettering, and is printed on stouter paper than the first edition which we recently noticed.

— MR. RIVERS has sent us some EARLY BEATRICE PEACHES ripened on a STANDARD TREE out of doors at Sawbridgeworth. The tree has been growing for some six or seven years in the same place without any protection whatever. The Peaches were quite delicious in quality, surpassing many that we receive that have been grown under glass.

— SEEDLING DAHLIA PRIZES.—In addition to the Turner Memorial Prize for Dahlias, which is represented by a handsome silver cup value ten guineas, the overflowings of the subscription, which was necessarily limited to Dahlia fanciers, have been devoted to three prizes—£1 : 12s. 6d. : 7s. 6d.—for the best seedlings exhibited at the Crystal Palace Show on the 4th of September next. The prizes are to be additional to the certificates offered in the schedule. The growers of Dahlias should note that this grand National Show will soon be here.

— THE ST. PETER'S, HAMMERSMITH, AND DISTRICT GARDENERS' AND AMATEURS' IMPROVEMENT SOCIETY will hold an exhibition of Chrysanthemums, Fruits, and Vegetables, on Thursday, November 19th, prizes being offered in twenty classes.

— MR. W. J. MURPHY, *Clonmel*, writes as follows concerning THE VARIEGATED TREE MALLOW (*LAVATERA ARBOREA VARIEGATA*). "I have had this singularly beautiful (foliage and flower) plant from Mr. Cannell since its introduction, and cannot at all agree with your correspondent, page 158, though I am satisfied he correctly stated his own experience 'that it cost too much to buy tobacco paper to kill green fly on it,' to grow it indoors. It is suitable for a lawn, growing 5 and 6 feet high; for a cool greenhouse; splendid for a tub near an entrance; and lastly, if properly managed, will, in certain cases, make an admirable window plant. In all those circumstances I never noticed green or black fly on it; but outdoors in summer, fully exposed, I

consider is the proper position for it. Indoors, and shaded, the splendid marble tinting of the foliage is wholly lost."

— A LARGE consignment of FERNS FROM NEW ZEALAND has arrived at Chiswick to be established for arranging at the Colonial Exhibition to be held next year at South Kensington. There are several hundreds of plants, from large trunks of Cyatheas and others of the arborescent group to miniature Filmy Ferns, and a remarkably fine lot of Todeas. These have arrived in admirable condition; in fact very few indeed of the plants sent will fail to grow. A quantity of moss arrived with the Ferns for competing purposes, and this, too, is as fresh as could be expected. The entire consignment must be regarded as very satisfactory, and its magnitude indicates that the products of New Zealand will be well represented at the Exhibition in question, which cannot fail to be extensively varied and interesting.

— GARDENING APPOINTMENT.—Mr. A. Greaves, late foreman at Brantingham Thorpe, has been appointed as gardener to A. K. Rollit, Esq., Thwaites House, Cottingham, Hull.

— THE annual Horticultural and Floral Fête of the GREAT YARMOUTH, EAST NORFOLK, AND SUFFOLK HORTICULTURAL SOCIETY was held on Thursday, the 20th inst., in St. George's Park, Great Yarmouth. The schedule, a very comprehensive and liberal one for a provincial society, offered a large number of money prizes for competition, amounting in all to upwards of £120. The exhibits were arranged in three large marquees in the Park, and the Show as a whole may be said to have been highly successful. The stands of Dahlias, both single and double, the Roses, Grapes, &c., attracted much attention. The principal prize-winners were Messrs. Gilbert & Son, of Ipswich; Messrs. Laws & Son, of Beccles; Mr. Neuman, of Gorleston; Mr. Barnard, of Caistor; Mr. C. Allen, the Marchioness of Lothian, Miss Penrice, Lord Suffield, and Messrs. Daniels Bros.

— THE Editor of the *American Gardeners' Monthly* thus refers to the RAPIDITY OF GROWTH IN TIMBER TREES.—"We have frequently drawn attention to the fact that there will never be a scarcity of timber in our country, because the wide-awake American will be sure to plant as soon as it becomes scarce enough to make it worth while to plant more. The old notion, derived from English works on forestry, that it takes centuries to grow trees to a profitable size, came from the fact that the landed interest of Great Britain know absolutely nothing of forestry, and seldom learn much from outside sources. An American will learn from a single illustration, found anywhere, and profit by it. There is no need to employ no end of commissioners at equally endless salaries, in order to find out how fast our timber is decreasing, and tell us how to keep our old and half-rotten forest trees from failing to the ground 'because it takes ages to get a new supply, you know.'"

SHREWSBURY SHOW.

THE annual summer Show of the Shropshire Floral and Horticultural Society was held in the Quarry Grounds, Shrewsbury, on August 19th and 20th. For several years past it has been our pleasant duty to record an unusually successful Show in connection with this enterprising Society, but the one under notice was admitted to be superior to its predecessors; the whole affair is, in fact, a gigantic undertaking arranged in the best style, and carried out in the most creditable manner. It is a *fête* of great magnitude, at the top of which stands the horticultural Show, then comes a grand feast of music and numerous amusements, with a magnificent display of fireworks at the close of each day; but these by no means overshadow the floral attractions, as the tents were crowded almost beyond their capacity. It has become a well and honourably known institution throughout the Midlands and far beyond them, and the way it is patronised is simply marvellous. Going back to 1876 we find the takings at the gate on the first day amount to £82 4s. 6d., in 1885 £218 9s. 7d. The second day, 1876, £189 5s. 2d.; the second day, 1885, £1074 19s. On Thursday last no less than the last mentioned sum was taken at the gates, the charge for admission being 1s. in the fore part of the day and 6d. in the evening. Besides this £350 worth of 1s. tickets were sold at 9d. previous to the Show to admit on the 20th, and apart from this subscriptions were collected to the extent of about £500. As the income of an ordinary annual Show it is unique. The Society is possessed of a handsome balance, but no miserly course is followed, as everything is done in first-class style, and in recent years over £1000 has been handed over from the funds in benefit to the town of Shrewsbury. These brief facts speak volumes for the interest in horticulture in and around this grand old town. The work of organising and conducting such a gigantic concern must be extremely heavy. There must be few drones in the official hive. Messrs. Adnitt & Naunton of The Square, Shrewsbury, in discharging the arduous duties of Hon. Secretaries in such an admirable manner, prove that they are the right men in the right place; and in connection with the Committee, who are mostly the leading inhabitants of the town and the principal gardeners and nurserymen in the district, display the utmost energy and genuine ability in the performance of their good work, merit congratulation on the eminence to which they have raised their Society.

On the evening of the 18th rain threatened, but the morning of the 19th was bright and promising, and the very important subject of weather, as well as the innumerable details connected with this magnificent Show, passed off without a hitch. The exhibits were arranged in numerous capital tents supplied by Mr. C. R. Clark, Stoke-on-Trent. One of them was 200 feet in length and 80 feet in width. Another was 290 feet in length, and 40 feet in width. Everything was seen and arranged to the greatest advantage.

Taking the classes in the order of the schedule the following were the most important.

PLANTS.

The principal of these were arranged along the centre of the first noted tent, the tall Palms being along the middle, and choice rich flowering and foliage plants near the side, which produced an excellent effect. The first class was twenty stove and greenhouse plants, with prizes of £25, £20, and £15, and they were all taken, Mr. Cypher, Cheltenham, being placed first with superb specimens, amongst which the following were extremely good—*Statice profusa*, finely bloomed; *Croton Queen Victoria*, C. Prince of Wales, C. Sunset, all very rich in colour; *Allamanda nobilis*, *Ixora Pilgrimi*, *Phœnocomia prolifera* Barnesi, 6 feet through, in fine health and grandly bloomed; *Rhododendron Duchess of Edinburgh*, full of orange scarlet trusses, beautiful; *Dasyllirion acrotrichum*; *Saccolabium Blumei majus*, *Erica kingstoniensis*, *E. Irbyana*, *E. obbata purpurea*, and several fine large healthy Palms—evidently one of Mr. Cypher's best efforts, but he was followed remarkably close by the twenty from E. C. Glover, Esq., Highfield Hall, Leek (gardener, Mr. C. Roberts), who turned his plants out in fine condition, especially *Dipladenia amabilis* and *D. splendens*, both profusely bloomed and of a capital colour; *Ixora Williamsi*, very large; *Croton majesticus*, *C. angustifolius*, large and fine; *Cycas revoluta*, *Allamanda Hendersoni*, *Ixora coccinea*, *Asparagus plumosus nanus*, large, fresh and graceful; *Anthurium Schertzerianum*, with fifty spathes; and fine Palms. Mr. Tudgey, Waltham Cross, was third, his plants being smaller, but neat. *Anthurium Andreanum* was conspicuous there. In the class for nine stove and greenhouse plants Messrs. Pritchard & Son, nurserymen, Shrewsbury, were first with highly creditable specimens, amongst which we noted a fine *Lapageria alba*, *Erica Eweriana superba*, very beautiful; *E. Marnockiana*, wonderfully bright; *Croton Queen Victoria*, finely coloured; *Latania borbonica*, a small healthy plant; and a grandly bloomed *Bougainvillea glabra*. Mrs. Juson, Abbey Foregate, Shrewsbury (gardener, Mr. Farrant), came second with plants only a very few points behind the first, the best being *Ixora coccinea superba*, *Clerodendron Balfourianum*, *Dipladenia superba*, *Ixora amabilis*, and *Croton pictus*. In the class for six stove and greenhouse plants E. C. Glover, Esq., was first with a fine *Allamanda Hendersoni*, *Phœnocomia prolifera* Barnesi, *Dipladenia amabilis*, *Latania borbonica*, *Croton Queen Victoria*, and *Erica Shannoni*. The plants were smaller than in this gentleman's group of twenty, but finely grown. Mrs. Juson was placed second with larger plants than the first, but not in such good condition. J. S. Burton, Esq., Longuer Hall (gardener, Mr. Thursle) was third, his best plant being a very fine *Bougainvillea glabra*, extra well bloomed.

Mr. Cypher was first for six exotic Ferns with a fine *Gleichenia Meudeli*, *Adiantum cardiochlaena*, *Microlepia hirta cristata*, a grand plant; *Alsophila aralis*, *Thamnopteris Nidus*, excellent; and *Alsophila elegantissima*. E. C. Glover, Esq., followed closely, his best plants being *Cibotium Barometz*, *Davallia solida*, *D. polyantha*, and *Todea superba*. Messrs. Pritchard was third with capital plants. In the corresponding class for six exotic Ferns, open to gentlemen's gardeners, Mrs. Juson came to the front with large healthy plants. J. S. Burton, Esq., was second, and Colonel Wingfield Onslow (gardener, Mr. J. Lambert), third. A fourth prize might very well have been awarded there, as the Rev. J. D. Corbet, Sundorne Castle, Shrewsbury (gardener, Mr. R. Milner), exhibited half a dozen excellent plants, which we preferred to either the second or third. Another good half-dozen came from J. Beattie, Esq., Overley (gardener, Mr. S. Bremmell), and on the whole this was an extra well-filled class.

The prizes for six plants in bloom in variety brought out a showy muster, Mr. Cypher being first with *Allamanda grandiflora*, very fresh; *Dipladenia amabilis*, rather soiled; *Erica Irbyana*, capital; *Ixora regina*, *Puencocoma prolifera* Barnesi, and *Erica æmula*, the whole arranged in one row down the middle of the tent to the pathway, and very effective. Messrs. Heath of Cheltenham were placed second with a group which many judges would have placed first, as it was wholly composed of Orchids in bloom, and first-rate plants—*Pilumna nobilis*, *Cattleya Gaskelliana*, grand; *Dendrobium formosum giganteum*, *Cattleya crispa*, *Saccolabium Blumei majus*, and *Mesospinidium sanguineum*. E. C. Glover, Esq., was third with fine young plants. In Palms Mr. Cypher was first, E. C. Glover, Esq., second, and Messrs. Pritchard third; but as the specimens had been distributed along the middle of the tent and were a little mixed we will not venture to name them.

The *Dracanas*, always a strong class there, were not so numerous this time, but fine in quality. The Misses Bannerman, Roden Hall, Shrewsbury (gardener, Mr. E. Shepherd), being first, and Colonel Wingfield second. *Caladiums* were grand and attractive. Mrs. Juson was first for six plants with large finely coloured specimens, and Messrs. Pritchard was second and third with good plants. These had been exceedingly well managed. With *Coleuses* the Misses Bannerman were first for large pyramidal plants, beautifully coloured; Mr. Laing, Cherry Orchard, being second with very small plants; and the Rev. J. D. Corbet third with plants of the same stamp as the first. The Judges were a little inconsistent there.

The class for six Fuchsias were well filled, Messrs. Pritchard being far ahead with magnificent plants, about 5 feet high, as much in diameter, the branches touching the ground, spotless, and profusely bloomed. These plants deserved a more prominent position in the tent. H. Owen, Esq., The Cedars, Shrewsbury, was second with creditable specimens, and Mrs. Juson was third with small plants. Tuberous Begonias were scarcely first-rate. Messrs. Pritchard had the best, Misses Bannerman second, and the Rev. J. H. E. Charter, Severn Villa, Shrewsbury, the third. Hardy Ferns were well represented from Mrs. Juson; Mr. J. M. Harding, The Square, Shrewsbury; and Mr. C. Clarke, Belmont, Shrewsbury. In double-flowering and Zonal Pelargoniums Messrs. Pritchard had it all their own way, and staged some dozens of grandly grown and abundantly bloomed plants.

The next class completed the large tent, and it is an important one, being a collection of miscellaneous plants to occupy the space of 100 square feet, arranged for effect, and in this Messrs. Pritchard were again to the fore with a truly charming group, in which Maidenhair Ferns, Crotons, graceful Palms, and Lilliums figured attractively. Messrs. Jones & Sons, nurserymen, Shrewsbury, were second and third with well-arranged groups, but Crotons predominated too much in both. An unnoticed bed from J. S. Burton, Esq., was much too stiff and closely packed, but not without merit, and all were very much admired.

In coming to the amateurs' plants we find H. Owen, Esq., first for six stove and greenhouse plants with specimens which would hold their own in the open classes at many pretentious shows. *Lapageria rosea* was very fine, and so was *Pandanus Veitchii*, *Allamanda nobilis*, and *Clerodendron Balfourianum*. J. Barker, Esq. (gardener, Mr. G. McReadie), was second, and Dr. E. Burd, Newport House, Shrewsbury, third. W. E. Mansell, Esq., Wellington, was first for four exotic Ferns with *Adiantum cuneatum*, *A. gracillimum*, *Lomaria gibba*, and *Adiantum formosum*. These were in the finest possible health, and attracted much attention, being extra good for the class. H. Owen, Esq., was second, and Mr. George Burr third. Mr. R. J. Niven, Wellington, also showed well. *Coleus* were excellent from Mr. L. Burd, Mayfield, J. Barker, Esq., and Mrs. Wace, and the same exhibitors secured most of the prizes for Fuchsias, Begonias, and double and zonal Pelargoniums. The Begonias were finer in individual blooms here than in the open class. Balsams were poor, and the Petunias were not particularly meritorious. The prizes offered for twelve table plants brought out some capital exhibits from Messrs. Jones, Messrs. Pritchard, and Colonel Wingfield. In fifty miscellaneous plants Messrs. Pritchard were first and third, and Messrs. Jones second, both showing what we may term a very choice selection of nursery stock. Altogether inferior specimens were remarkably few, and high quality predominated everywhere.

CUT FLOWERS.

These were arranged on the side stages in the long tent, and were very attractive. The first on the list and on the boards were the Roses, and they were about the worst of all the cut flowers. The 19th of August is not a date to expect perfect Roses to be shown by dozens, and the twenty-four single trusses shown by Messrs. Perkins, Coventry, and Mr. R. Vertegans, Birmingham, which were placed equal first, were good for the time, but not specially noteworthy; and the eighteens from Mr. E. Wright, Halston, Mr. G. H. Berrington and Mr. G. Townsend, jun., Uffington, were very poor, and it was a relief to get to the Dahlias, where we found an excellent display. For thirty-six blooms in variety Mr. Shaw, Kidderminster, was placed first, his best flowers being Duke of Connaught, Monarch, Cardinal, Modesty, Jane Locker, George Smith, and Mrs. Dodds. Messrs. Heath of Cheltenham were second with a stand which contained larger and more perfect blooms than the first-prize one, their blooms being extra good and in fine condition. Here General Gordon was greatly admired as a new one of much beauty, and amongst many fine varieties we may name Gaiety, Henry Bond, Prince of Denmark, James Service, and George Dickson. The class for twenty-four Dahlias in variety brought out the best competition, and there Messrs. Heath were easily first with a stand better than in the other class. They were fresh grandly formed blooms, well set up, and we noted Chorister, John Bennett, Mrs. Gladstone, Joseph Ashby, Condor, and George Rawlings as desirable varieties. C. Wright, Esq., Halston Hall (gardener, Mr. H. West), was second with large blooms, and Mr. Shaw was third. Single Dahlias were poor on one stand.

With *Gladiolus* Mr. Shaw secured first and third prizes, Colonel Wingfield being placed second with a stand we admired for its freshness.

The Asters in all classes were of no special merit, and Carnations and Picotees might have been better. The twelve bunches or trusses of stove and greenhouse flowers were very beautiful, Messrs. Pritchard being first there and E. C. Glover second. Both exhibits were exceedingly showy. In the class for twelve bunches of hardy herbaceous flowers Mr. Vertegans, nurseryman, Birmingham, was first with a magnificent stand, the flowers being finely developed, very showy, and beautifully set up. Messrs. Jones and Sons were second, and Messrs. Pritchard third, with blooms considerably behind the first. Phloxes were numerous, but not high in quality, the majority of the spikes being small. The best came from Miss Emily Cotes, Bickton. French Marigolds were very small, but the African Marigolds were extra large and very fine, especially from Mr. T. S. Minton and Mr. W. Jones, Montford. Pansies had evidently suffered from the drought, and the Stocks were deficient in size of spike and distinct colours. Verbenas, too, were poor, and this section was the weak point of the Show.

The bouquets were splendid. For a ball or hand bouquet Messrs. Perkins were first with a finely formed one, but we thought the dark Rose leaves had been used too freely amongst the white, and one lady who is a very good judge asserted that the colour was entirely unsuitable for many dresses. Mr. Cypher was second with a very choice arrangement, the majority of the flowers being white with a delicate piece of *Cattleya* here and there. Messrs. Jones and Sons were third. The buttonhole flowers were chiefly Orchids. The first prize for a stand of cut flowers was won by Messrs. Jones & Sons with a very graceful arrangement, the base being filled with Orchids, *Dipladenias*, and Water Lilies, and the top was light and elegant. Mr. Cypher was second with a pretty stand, and Messrs. Jones were third. Messrs. Cypher, Perkins, and Jones were the winners for the bridal bouquet, and this section was very attractive. The amateur cut flower stands were mostly spoiled by the glasses being too clumsy.

For Wild Flowers there were three classes, and each was well filled; indeed, the show of these was a good one, and the principal winners were Miss M. M. Goyne, Shrewsbury; Miss Moore, Ellesmere; Miss M. Harrison, Millington's Hospital; Mrs. Jones; and Miss K. James, Wynn's Cottage, Shrewsbury.

FRUIT.

The show of this was excellent in every respect, the entries being more numerous and the quality much in advance of that at any previous show. The bulk of it was arranged along the centre table in the long 290 feet tent, and found many admirers. As soon as judging was over the officials put up a wire netting fence along the front of the Grapes and other fruits, and where the sightseers become such a multitude this plan is very necessary,

and must be much appreciated by the exhibitors. The first class in the fruit section was six bunches of black Grapes, two bunches of three varieties, and there were fourteen lots staged. A capital class. Viewed superficially the best six appeared to be on the stand of the Earl of Harrington, Elvaston Castle, Derby (gardener, Mr. Goodacre), who had two very fine bunches of Muscat Hamburg and also good Black Hamburgs; but Madresfield Court, his other variety, was quite green near the footstalks, and no doubt this led the Judges to award the first prize to Joseph Evans, Esq., Hurst House, Prescott, Lancashire (gardener, Mr. A. Young), who had six large finely ripened bunches of Black Hamburg, Madresfield Court, and Alicante in wonderful condition for the season. These were perfect and even, and had been grown with great care. The Earl of Harrington followed with those just spoken of, and the Rev. Walter Sneyd, Keele Hall, Stafford (gardener, Mr. J. Wallis) came third with good Madresfield Court, Muscat Hamburg, and Black Hamburg. Three prizes only were offered, but the exhibits being so meritorious the Judges awarded a fourth prize to Major J. S. Thursby, Llandudno (gardener, Mr. C. Joseph), whose bunches were certainly not large, but the berries were uncommonly fine. Colonel Wingfield was first for three bunches of black Grapes with Black Hamburg, finely coloured, good in size of bunch and berry, and well finished. The Hon. C. H. Wynn, Rug Corwen (gardener, Mr. J. Bennett), was second with three beautiful clusters of Alnwick Seedling. They were perfectly coloured, carried a deep bloom, and were very attractive. H. Baxter, Esq., J.P., The Tower, Rainhill (gardener, Mr. J. Brotherton), was third with Madresfield Court, very fine in berry, and well finished. A fourth prize was added for the Alicante from Viscount Combermere, Combermere Abbey (gardener Mr. N. E. Owen), and a fifth prize to Mr. I. Roberts, Stourbridge. The finest Hamburgs in this class came from H. W. Foley, Esq., Prestwood Hall, but they were weak in colour and bloom. The Misses Bannerman also showed well in this class.

In the white Grape class four bunches of two varieties, Joseph Evans, Esq., was again first with Muscat of Alexandria, very good in bunch and ripe; and Foster's Seedling, very fine in bunch and finish. J. Corbett, Esq., M.P., Droitwich (gardener, Mr. R. Parker), was second with Golden Champion, rather loose in the bunch, but large in berry and spotless; and Muscat of Alexandria, small in berry, but good in quality. S. Meakin, Esq., The Hazes, Stone (gardener, Mr. Wilkes), was third with Muscat of Alexandria and Foster's Seedling; and the Rev. W. Sneyd was fourth with moderate Duke of Buccleuch and good Muscat of Alexandria. The Rev. J. D. Corbet exhibited strongly here, his Buckland Sweetwater bunches being very good. In the three bunches of white Grapes class James Watson, Esq., Berwick House, Shrewsbury (gardener, Mr. J. Purser), was an easy first with the finest coloured Muscat of Alexandria in the Show. The berries were large, bunches if anything too thin, but the colour was superb. The Misses Bannerman followed with bunches of the same style. H. Baxter, Esq., was third with Muscat of Alexandria, very fine in the bunch, as were the fourth-prize Grapes from the same gentleman. The highly respected President of the year, Sir V. R. Corbet, Acton Reynold (gardener, Mr. J. Hawkesford), was fifth with Muscat of Alexandria, very large in bunch, but rather uneven in berry, and not quite ripe. E. C. Glover, Esq., staged some good examples of Duke of Buccleuch; and Sir C. R. Boughton, Downton Hall (gardener, Mr. H. E. Kennedy), a good specimen of Buckland Sweetwater. The Grapes from the amateurs, especially those from Mr. Blakeway Phillips, Hanwood, and Mr. George Burr, were very good.

For the collection of twelve dishes of fruit there were five competitors. Last year there was not one. The Earl of Harrington was first here, the weightiest dishes being two beautiful bunches of Muscat Hamburg and good Muscat of Alexandria Grapes, and a Charlotte Rothschild Pine Apple of fine shape weighing $7\frac{1}{2}$ lbs. Other good dishes were Hero of Lockinge Melon, Goshawk Peaches, Pine Apple Nectarines, Moor Park Apricot, De Montfort Plum, Morello Cherry, Garibaldi Strawberry, Doyenné d'Été Pear, and White Dutch Currants, by no means a strong dish in a collection of twelve sorts, but the first named brought up the points. J. Corbett, Esq., M.P., was a very close and good second with Black Hamburg rather small, clean Muscat of Alexandria, a good Queen Pine Apple, Best of All Melon, Royal George Peach, and Elruge Nectarine of fine quality. The Hon. C. H. Wynn was third with clean samples, amongst which there was a Pine Apple named "New Black Jamaica," which we recognised as our old friend Prince Albert. The Rev. J. D. Corbet was fourth with a very good Queen Pine, fine large Figs, and fair Muscat of Alexandria, but the Melon was past its best. The Misses Bannerman were placed first with nine dishes. The Muscat of Alexandria and Madresfield Court Grapes being very good, as were also the Peaches, Nectarines, Apricots, Cherries, Plums, Gooseberries, and Melon, which formed the other dishes. Colonel Wingfield was second and J. Watson, Esq., third, both being very close up to the first, the Muscat with the latter being very fine, but the Peaches and Nectarines were deficient.

The Peach class was well filled, the prizes going to Mr. W. Shaw, G. Meakin, Esq., and E. Wright, Esq. The Hon. C. H. Wynn was first for Nectarines, Sir C. R. Boughton second, F. H. B. Sladen, Esq., Leighton Hall (gardener, Mr. C. Davies), third, and General Jenkins, Cruckton Hall (gardener, Mr. J. Withers), fourth. Apricots were very good, Plums inferior and few, Melons plentiful, but not of general high quality, Sir V. R. Corbet taking first in the green-flesh variety class and G. Meakin, Esq., first in the scarlet-flesh variety class. Cherries were remarkably fine, the first prize being easily won by the Rev. R. E. Warren, The Mount, Shrewsbury, with a first-rate dish, as were also the second and third prize fruits from Sir P. Smythe, Acton Burnell (gardener, Mr. J. Edwards), and the Earl of Harrington. With six dishes of hardy fruit the Earl of Harrington was first, Mr. W. Shaw second, and J. Watson, Esq., third, the latter spoiling his chance for first place through introducing two dishes of Currants, the White inferior.

VEGETABLES.

The prizes for collections of twelve varieties produced keen competition, and although Colonel Wingfield's gardener, Mr. Lambert, was placed first there would have been no mistake made if Mr. Milner from Sundorne Castle had been placed equal, both showing uncommonly well. The former having Canadian Dwarf Beans, Major Clarke's red Celery, The Lyon Leek, very fine; Giant Cauliflower, too old; Tripoli Onion, Hathaway's Tomato, John Bull Pea, Brussels Sprouts, Telegraph Cucumber, Nutting's Beet, Covent Garden Perfection Potato, and James's Carrot. Mr. Milner's Perfection Tomato was

grand, as were also his Giant Cauliflower and Williams' red Celery, and, indeed, so were his other dishes, including Favourite Potato, Canadian Bean, Intermediate Carrot, Carter's Six Weeks' Turnip, Pragnell's Beet, Giant Rocca Onion, and Telegraph Cucumber. J. Watson, Esq., came third with well-grown produce, and this gentleman was first with six dishes of Potatoes, showing fine samples of Pride of the Valley, Woodstock Kidney, Blanchard, Vicar of Laleham, Webb's Surprise (one of the best), and Schoolmaster. General Jenkins came second, and these two exhibitors changed places in the three-dish competition. General Jenkins was first in the single-dish class with International. Tomatoes were numerous and fine; Peas were not in good form; Onions, spring and autumn sown, were abundant and good; Cucumbers, especially the first-prize brace from J. Watson, Esq., were capital; Cauliflowers were mostly too large and a little past their prime; Celery, French Beans, Parsnips, Carrots, and Turnips were extensively shown and good as a rule. Altogether local competitors in all departments are to be congratulated on being able to hold their own so well, as, although the handsome prizes offered bring many weighty opponents from a distance, the local growers certainly secure the lion's share of the prizes, and if they continue to improve as they have done in recent years it will soon be a hard matter to match them in any of the classes.

The cottagers had a tent 150 feet in length and 50 feet in width all to themselves. Someone suggested that the Potatoes exhibited in some instances had been dressed with furniture polish, but perhaps they had only accidentally come in contact with the beeswax in the honey tent close by. The vegetables in this section were certainly highly creditable to the growers, and so were the cut flowers and plants. The chief prizetakers were Messrs. George Roberts, Sundorne Lodge; W. Maund, Lidlöw; Robert Gand, D. Hughes, Henry Jones, Market Drayton; Thomas Downes, W. Haycock, H. Clarke, M. Williams, and Mary Douglas.

MISCELLANEOUS EXHIBITS.

Messrs. Webb & Sons, seedsmen, of Wordsley, Stourbridge, had a large stand of vegetables, upwards of 100 varieties. They consisted of all the leading kinds for which this firm has become noted, and they were displayed in large heaps in a very attractive manner. The quality throughout was exceedingly fine, better indeed than could be found in the majority of the competing dishes, and being near the entrance to one of the principal tents it commanded much attention. A special first-class certificate of merit was awarded for this excellent collection, and if a higher award had been at the command of the Judges it would no doubt have received it. Mr. T. Laxton, Belford, exhibited a fine stand of summer-flowering Chrysanthemums, Potatoes, Onions, Peas, and Kidney Beans of good quality, the whole of which was very highly commended. Messrs. James Dickson & Sons, Chester, had a fine collection of Conifers in pots near to the main entrance, and with these were many fine Liliums. Some admirable specimen Vines in pots were also shown by this firm, and inside one of the tents they had some good stands of Rose blooms, single Dahlias, and hardy flowers. Messrs. Richard Smith and Co., Worcester, filled a large table with Ferns, Palms, Crotons, Aralias, Heaths, and Caladiums; the whole edged with *Euonymus albo-marginatus*. This was a most attractive table. The cut herbaceous flowers from this firm were exceedingly fine, as were also the Yuccas and Rose blooms. Messrs. F. & A. Dickson, Chester, filled a large stand with many excellent stove and greenhouse plants, as did also Messrs. Pritchard & Sons, Messrs. Jones & Sons, and Mr. Myers of the Sutton Lane Nurseries, Shrewsbury. Mr. Vertegans, nurseryman, Birmingham, exhibited largely and attractively his cut hardy flowers, seedling Carnations, Hollyhocks, Tuberoses, and Gaillardias being excellent in quality and beautifully set up. Outside "The Simplex" pot washer from Mr. E. Bennett was on view, and Messrs. Balfour from Longton had a good display of fancy and useful pots.

Messrs. Webb & Sons received a first-class certificate for a new unnamed seedling Potato. It has a rough brown coat, shallow eye, and appears both good and distinct. Mr. Laxton received the same compliment for his new White Beauty of Hebron Potato, which was shown cooked and uncooked, and a like distinction was bestowed on his White Czar runner Bean, which is out of the common in size.

SIDE-SADDLE FLOWERS.

UNDER the general term of Pitcher Plants are included several very peculiar and interesting groups of plants, of which the *Nepenthes* form the largest and most important genus; next to these come the *Sarracenia* and the strangely beautiful *Darlingtonia*. These are all distinguished by the remarkably singular structure of the leaves, which have departed from the ordinary form and apparently become more or less adapted for carnivorous habits similar to the Venus's Fly Trap *Dionaea muscipula*. In the *Nepenthes* the alteration is most completely effected, for of these the extremities of leaves assume a distinct pitcher-like form, the lower portion of the leaf-blade being of its normal character; in the *Sarracenia*, however, this is reversed, for in them it seems as if the leafstalk had been hollowed to constitute "the pitcher," while the blade takes the form of "a lid" at the apex, and this character also prevails in the *Darlingtonia*. As to the origin of these peculiarities opinions differ, and the plants are strangely isolated from their nearest relatives in leaf-form. So many links are wanting in the chain of evidence that we cannot satisfactorily trace the origin of the structure. That it has a use there can be little doubt, and, like the other "carnivorous plants," this seems to be mainly connected with the supply of nitrogenous nutriment to the plants through the medium of their leaves. Both *Sarracenia* and *Nepenthes* secrete a liquid which serves first to attract insects and then to kill them, and there are so many adaptations to this end that unquestionably the plants are intended to derive some advantage from it. The pitchers also serve another purpose. They in several cases act as reservoirs of moisture much in the same way as the closely imbricated leaves of the *Bromeliads*, or in a more remarkable degree in the "Traveller's Tree" of Madagascar. In some of the *Sarracenia*s, however, "the lid" is so closely placed or curved over the entrance to the leaf-tube that it is scarcely possible for rain to find an entrance, and a few of the *Nepenthes* are almost as effectually protected in a similar

manner. It is curious, too, that most of the carnivorous plants, including the *Sarracenias*, inhabit swamps where it might be supposed there would be less need of any additional means of support besides that furnished by the roots. These, however, are some of the problems of the plant world, very interesting to reflect upon but difficult or impossible to solve.

several other plants often widely separated as regards relationship the stigma assume a greatly enlarged form, and the true stigmatic surface is confined to small lines or points on the under side. This form is very strongly marked in the *Sarracenias*, the five large lobes being strongly curved downwards, and affording a puzzling structure to beginners in



Fig. 34.—SIDE-SADDLE FLOWERS—*S. Patersoni*, *S. flava maxima*, *S. Drummondii*.

The Side-saddle Flowers, as the *Sarracenias* are popularly known both here and in North America, have derived their title from another peculiarity, but for this we must look to the flowers. In the *Iris*es and

botany. To the imagination of the early settlers in America these lobes were suggestive of the pommels of a side saddle, especially when the flowers are hanging slightly downwards, as in the usual position, with

drooping petals between the lobes, which an old writer says, was "supposed to resemble the position of a woman's leg when sitting on a side saddle." The origin of the generic name is less fanciful, and has nothing to do with the Sarracens as some might suppose, but simply commemorates the name of a French physician, Dr. Sarrazin of Quebec, and was bestowed upon these plants by the botanist Tournefort.

It has already been incidentally remarked that Sarracénias are inhabitants of swamps and similar situations in North America, and some idea can be formed from this as to the method of culture most likely to be successful. They are indeed easily cultivated, but there is considerable difference in the way their respective characters and attractions are developed, for when in their best condition they are extremely ornamental plants both for their pitchers and their flowers, but when badly treated they are not likely to attract much admiration, for they then have a miserable appearance. Mistakes are sometimes made in growing these plants by keeping them in too high a temperature, and this leads to failure as much as anything, for it should be remembered that except during active growth the plants thrive much better in a cool temperature. At Kew Sarracénias have been very successfully grown for some years, and there the position chosen for them during the summer months is the porch of the cool Orchid house, where, in company with *Pinguiculas*, *Dionæas*, and *Droseras*, they thrive most satisfactorily, producing large and finely coloured pitchers. Liberal supplies of water is another point requiring careful attention, and even during the winter they must never be allowed to become thoroughly dry, while in hot weather syringing amongst the plants (but very lightly on the pitchers) is necessary to preserve a constant moisture. In the following note from Dr. Alexander Paterson, Fernfield, Bridge of Allan, whose fine hybrid is shown in fig. 33, page 181, and who succeeds as well with these plants as he does with his Orchids, all the essential points in the culture of Sarracénias are summed up.

"As to the treatment adopted in the culture of Sarracénias, I find the best way to grow them is to imitate their native climate as much as possible. During the winter, when they are at rest, keep them cool; in the early spring, when they begin to start, they should be repotted in good fibrous peat and turf with some fresh living sphagnum, powdered sheep's droppings, and horn shavings. Top-dress with chopped living sphagnum, and put them into a warm Orchid house or stove, where they will grow with vigour. To increase the number and size of the pitchers pinch off all flowers as they appear, and whenever the pitchers are fully developed remove the plants to a cooler house without any shade, as the sunlight develops the rich colour some of them have. By the first week of June they should be placed out of doors, exposed to the full blaze of the sun. As a bedding plant (the pots being plunged) nothing could be more interesting than a clump or bed of these interesting and curious plants. All the care they want is to be well supported by stakes and plenty of water. In autumn, before frost sets in, remove them indoors to their winter quarters, a cool greenhouse."

It should be remembered, in regard to the latter portion of Dr. Paterson's note, that Bridge of Allan is a favoured spot; yet there is no doubt that many of the plants could be treated as he suggests. Certainly, the old *S. purpurea* is frequently grown out of doors on rockeries all the winter with very little protection, but it cannot be said that it looks happy in the majority of cases, and all are safest and colour best in a cool house.

The number of species of Sarracénias is not large, but in recent years very numerous and handsome hybrids have been raised, which comprise some of the most ornamental forms in cultivation, though in a few cases there is a strong family likeness which renders them rather difficult to distinguish. This is probably owing to the fact that it was found the plants grew very readily with each other, and in consequence many forms have been obtained, showing all intermediate gradations of character. It is probable also that some of those which have been sent out as introductions are natural hybrids.

SPECIES AND VARIETIES OF SARRACENIAS.

Those usually regarded as species, or at least as introduced forms of which the parentage is unknown, are as follows:—

S. ATROSANGUINEA.—An introduction from North America, sent out by Mr. Bull in 1880. In a young state the lid of the pitchers is green with red veins, but as they become older and larger the colour deepens to an intensely rich red hue with a glossy surface.

S. CRISPATA.—Very attractive. The pitchers and lids green, but the latter are beautifully veined with red in bold and regular lines. This is one of Mr. Bull's introductions, and was described in his catalogue for 1880.

S. DRUMMONDI.—A very handsome plant with tall pitchers, bright green at the lower part, beautifully mottled with white and veined with bright red at the upper part and in the lid, the flowers being purple. This has been freely used in hybridising with good results, as it is a free-growing and really fine species. It inhabits swamps in Florida, whence it was introduced rather more than half a century ago. A plant is shown in fig. 34.

S. ERYTHROPUS.—Remarkable for the deep red lids with which the neatly formed pitchers are furnished. It is another of Mr. Bull's plants, and was certificated by the Royal Botanic Society in 1881.

S. FILDESI.—A bold and handsome plant, the pitchers large and somewhat trumpet-shaped, green veined with purple. Sent out by Mr. B. S. Williams in 1881.

S. FLAVA.—The original form of this, that figured in the "Botanical Magazine," t. 780, at the commencement of the present century, is much

less attractive than the varieties that have subsequently been obtained. It has narrow, straight, plain green pitchers, and medium-sized yellow flowers, and had then been known in gardens as a curiosity for several years.

S. FLAVA LIMBATA.—A pretty variety, with the lid of the pitcher distinctly margined with red. Certificated by the Royal Botanic Society in 1881.

S. FLAVA MAXIMA.—Much superior to the ordinary form both in size and general beauty, the pitchers being very large, of a clear light green colour, and with large bright yellow flowers. It is a handsome companion for the dark-flowered Sarracénias. The light flower in fig. 34 is one of this variety grown by Dr. Paterson.

S. FLAVA VAR. ORNATA.—Distinguished by its bright green pitchers being closely netted with veins of a purplish hue, an extremely pretty contrast to the other forms of the species.

S. FLAVA PICTA.—This and the preceding are somewhat alike, the light green pitchers being beautifully veined with crimson at the upper part.

S. MINOR.—A diminutive form which has been confounded with *S. variolaris*, but quite distinct as represented in Sweet's "Flower Garden," New Series, p. 138. It has plain green straight pitchers and purple flowers, and is said to be a native of Georgia.

S. PORPHYRONEURA.—A neat dwarf form, the pitchers of medium size, with round lids, green veined with purple. Certificated at Regent's Park in 1882. One of Messrs. J. Veitch & Sons' additions to the genus.

S. PSITTACINA.—The Parrot's-head Sarracenia is very pretty and distinct, its small pitchers having a curiously curved lid or apex, purple or crimson, handsomely mottled with white. Introduced from Florida, 1866.

S. PURPUREA.—Though not one of the most beautiful, this is interesting as being the first species introduced to England, having been imported by the younger Tradescant before 1640. The pitchers are green and red, the flowers purplish.

S. RUBRA.—In this the lid is more acute or ovate than in most of the larger forms, and is green veined with red, the flowers being of a very rich red hue.

S. VARIOLARIS.—A distinct form with narrow pitchers, the small lid being curved closely downwards, spotted with white and having a few red veins. The flowers differ from the others in the shorter greenish petals spreading instead of drooping.

HYBRID SARRACENIAS.

The best of the hybrids are as follows, the name given after each being that of the raiser or firm which sent it out in England, and the date, except where otherwise stated, indicates the year when it first appeared in the catalogues.

S. ATKINSONIANA (Bull).—A hybrid from *S. purpurea* and *S. flava maxima*, much resembling the latter.

S. CHELSONI (Veitch, 1879).—A beautiful hybrid between *S. rubra* and *S. purpurea*, raised by Messrs. Veitch & Sons, Chelsea, and especially interesting, as being the first of now numerous hybrids obtained artificially. In habit and form of the pitchers it is strikingly intermediate between the two parents, but it surpasses both in the rich crimson colour, and in this respect is one of the best of the cultivated forms.

S. COURTII (Veitch).—A very pretty and neat hybrid between *S. psittacina* and *S. purpurea*. The pitchers are deep red in colour, and form close tufts 4 to 5 inches across, and in some instances there are a dozen pitchers in that space. It is a curious and attractive form, evidently intermediate between the parents named, and partaking largely of the *S. psittacina* habit. It was certificated by the Royal Horticultural Society in 1881, and at the Regent's Park in 1882.

S. EXCELLENS, *S. EXCULTA*, AND *S. EXORNATA*.—All hybrids sent out by Mr. Bull. 1, From *S. variolaris* and *S. Drummondii alba*. 2, From *S. atropurpurea* and *S. crispata*. They are pretty, but not remarkably distinct.

S. FORMOSA (Bull).—A hybrid between *S. psittacina* and *S. variolaris*, and combines most of the attractive characters of each parent, being a dwarf, compact form, with prettily marked pitchers. A certificate was awarded for it at Manchester in 1881.

S. ILLUSTRATA AND *S. MADDISONIANA*.—1, From *S. flava picta* and *S. Stevensi*, quite of the flava style. 2, *S. variolaris* and *S. psittacina*, prettily mottled.

S. MELANORHODA (Veitch).—A hybrid between *S. purpurea* and *S. Stevensi*, with pitchers 6 to 8 inches long, of an extremely dark red colour, almost black in some cases. It is a very distinct form, and has been honoured by certificates both at Manchester and South Kensington in 1881, and at Regent's Park in 1882.

S. MITCHELLIANA (Williams).—A hybrid between *S. Drummondii rubra* and *S. purpurea*, the pitchers large and very handsome, the lid broad, undulated, and heavily veined with deep red. Certificated in 1884 at Regent's Park.

S. PATERSONI.—A hybrid between *S. purpurea* and *S. Drummondii*, raised at Fernfield by Dr. A. Paterson, Fernfield, Bridge of Allan, N.B., about ten years ago, and of which there are only nine plants in cultivation—one at Sandringham, one at Glasnevin, one at Edinburgh, and six in Dr. Paterson's possession, the plant exhibited at Kensington, August 11th, and then awarded a first-class certificate, being subsequently sent to the Royal Gardens, Kew. The pitchers are very strong, 12 to 18 inches high, proportionately broad, with a lid 4 inches in diameter and of a uniform rich dark red colour from the top to the base, the lids being veined on a slightly lighter ground colour. It is a very strong-growing handsome Sarracenia, and will take its place amongst the finest of those in cultivation. Fig. 33 represents a portion of one of the pitchers, and in fig. 34

the dark flower is one of this hybrid, which, together with the others, were sent by Dr. Paterson.

S. SWANNIANA (Bull).—A hybrid between *S. variolaris* and *S. purpurea*, with medium-sized pitchers of a deep red colour, the leaves broad and heavily veined with dark red. Certificated at South Kensington in 1883.

S. TOLLIANA (Williams).—A hybrid between *S. purpurea* and *S. flava*, the pitchers slender and elegant in form, bright green, with a broad lid veined with bright crimson. Certificated by the Royal Botanic Society in 1884.

S. WILSONIANA (Bull).—A hybrid between *S. purpurea* and *S. Drummondii rubra*, somewhat resembling *S. Swanniana* in form and size, but with bold crimson veins.

S. WRIGLEYANA (Veitch).—A hybrid from *S. psittacina* and *S. Drummondii rubra*, resembling the first named parent in habit, but rather stronger, the pitchers veined with red on a white or semi-transparent ground. An extremely handsome form. Certificated by the Royal Horticultural Society in 1884.—LEWIS CASTLE.

NOTES ON GRAPES.

GROS MAROC.—This Grape seems likely to come more into fashion as it becomes more generally known. It seems capable of being improved in flavour by grafting on the Black Hamburgh, which is a good thing, as on its own roots it is very much wanting in flavour. It appears to colour very well in comparatively little heat, takes on a fine bloom, makes a very pretty dish on a table or a basket for market, and if, as stated, grafting on the Hamburgh improves its flavour, may be called a fairly good Grape when its edible qualities are discussed.

It will no doubt prove useful as a Grape for consumption after Hamburghs are finished and before Colman is ready. In this particular it may be classed along with Alicante, which, though capable of being kept very late, has also the recommendation of being eatable before Colman. For grand appearance, however, no variety of black Grape can equal Gros Colman.

MUSCAT OF ALEXANDRIA.—This noble Grape—in some ways superior to all others—is often met with in circumstances which are adverse to the development of all its excellencies. Lately the writer was visiting a place where Alicante, Lady Downe's, and other varieties were growing side by side with Muscats, to the evident detriment of the latter. The house was being treated to abundance of air, and the temperature maintained was one which, though it seemed to suit Alicantes, &c., evidently did not suit the Muscats, as they were small in berry, very green, and looking quite like shanking considerably—indeed, compared with samples from another vineyard where a Muscat temperature is maintained, those in the mixed house were very far from being fair examples of this grand Grape. All who can manage it should devote a house to Muscats; they will then be able to do justice to them, other conditions of successful culture of course being present, such as good borders and good management generally.—V.

BATTERSEA PARK.

IN addition to the rich collection of flowering trees and shrubs which this park contains, it possesses a totally distinct appearance from all other gardens provided for the benefit of the London public. Now that the trees and shrubs have attained a good size, this park has a natural and picturesque appearance. It is simply charming, and rendered so to a large extent by its undulating surfaces and well-kept winding walks, which have to be followed to discover its many attractions. The whole of the park cannot be seen at a glance, which makes it the more enjoyable. There can be no question about its beauty, independent of its many and varied floral decorations of both flowers and foliage during the summer months.

The well-shaped nooks and corners in this park are admirably suited for displaying to the best advantage the various bedding arrangements that may be carried out. These are extensive, and afford evidence of both intelligent thought and great artistic taste. Sub-tropical bedding is admirably represented, and in many instances the beds afford a pleasing relief and a splendid background to the carpet and flowering beds. Whatever skill might be employed, it would be utterly impossible to carry out sub-tropical gardening to produce the same effect on the level surface of the grounds at Hampton Court. Roses had been a fine feature at one of the entrances, the old Cabbage, common Moss, and such varieties that did well, being employed with Pentstemons and ribbon borders surrounding them. Ribbon borders are continued more or less until the lake and more undulated portions of the park are reached. There are, however, several breaks into the ribbon borders by suitable openings in the shrubbery, where a number of flower beds are tastefully arranged and filled with a mixed variety of flowering plants. These mixed beds are becoming very popular, and strikingly effective they are, yet the public do not appreciate them, or linger about them the same as they do round the beautiful carpet beds.

Upon reaching that portion of the grounds where the principal bedding is arranged, the first group that took my attention was composed of

Ailantus glandulosa, that is cut back annually and allowed to go away again with one shoot only. This handsome tree, used in this way, is one of the most beautiful foliage plants for the purpose. These were very strong, some of the leaves measuring no less than 4 feet 6 inches in length. These rose out of and towered considerably above a groundwork of Bamboos, while *Catalpa syriacifolia aurea*, with its golden foliage well coloured, stood out prominently in the front, the group being faced with a row of Pelargoniums and the old *Gazania splendens*. Near to and very effective was a large plant of *Polygonum sachalinense*, with its large bold foliage and white flowers. No other plant could have been more suitable for the position. *P. Sieboldi* and *P. cuspidatum crispulum* I also noticed was employed in other prominent places in connection with Palms and foliage plants. *Aralia Sieboldi* was rising from a groundwork of flowering plants, and *Araucaria excelsa*, a good-sized plant, with its branches overhanging silver-leaved Pelargoniums. *Convolvulus mauritanicus* formed a charming edging to another group, and was most striking with thousands of its pretty blue flowers. Behind this was a fine row of pink Pelargonium *Cleopatra*, with a mass of a yellow-flowering *Canna* just coming into bloom, and backed by dark-foliaged shrubs. A bed of *Wigandia caracasana*, with its noble foliage, was very noticeable rising from a mixed groundwork of *Gnaphalium*, *Ageratum*, and *Scabious*, with a few *Gladioli*. The edging to this bed consisted of a ring of Pelargonium *Crystal Palace Gem*, *P. Manglesi variegatum*, and *Lobelia* alternately. Another really charming sub-tropical bed was composed of *Aralia papyrifera*, mixed with variegated *Maize* rising from an undergrowth of *Lantanas*, and edged with Pelargonium *Vanessa*, rosy salmon in colour and a most beautiful free-flowering bedder. *Tropæolum Bedford Rival* formed the margin, and was covered with hundreds of its bright scarlet flowers. This variety, from its dwarf, compact, free-flowering nature, is evidently well adapted for bedding. Amongst a groundwork of *Marguerites*, *Petunias*, and *Ageratum*, *Eucalyptus globulus* rising considerably above them was very attractive; the remaining portion of the bed being completed with *Cannas*, Pelargoniums, and *Gazania splendens*. Another simple yet striking arrangement was produced by *Acacia lophantha*, springing from an undergrowth of *Centaurea candidissima*, surrounded with a band of *Amaranthus melancholicus ruber*, edged with *Lobelia* and *Achillea umbellata*, its silvery Fern-like foliage contrasting admirably with the grass.

What are known as the great S shaped beds are next reached, and the contrast between the style of bedding adopted was all that could be desired. Small variegated *Yuccas* were rising from a groundwork of *Mentha Pulegium gibraltarica*, banded with *Euonymus radicans variegata* and Golden Nugget Pelargonium. *Coleus* and *Dactylis glomerata longissima* were in association, the ground being carpeted with *Lobelia* and *Alyssum*, the bed being edged with *Alternanthera*, *Pyrethrum*, and the *Euonymus* named above. Near to it was a large *Phoenix reclinata*, with a carpet beneath of *Coleus*, with bands of Pelargonium *Surprise* and Golden Fleece, *Echeveria glauca metallica* forming the edging next to the grass. Close to, and strikingly conspicuous, was *Solanum macrophyllum*, with *Lobelia cardinalis* and *Agapanthus umbellatus* in flower, the spaces between being filled in with *Heliotrope*. These were encircled by a row of silver-leaved Pelargonium, with *Lobelia* next, and *Veronica Andersoni variegata* pegged neatly down next to the grass. At one of the windings of the walk where the shrubs reached nearly to the margin a very pretty arrangement of mixed plants again arrested attention. *Hyacinthus candicans* and *Nicotiana affinis* were most noteworthy, with their white flowers rising above plants of a somewhat lower growth, *Calceolarias*, and even the old *Fuchsia fulgens*, was not despised, while *Tigridias* were just coming into flower, and in a very short time would be truly gorgeous, this interesting group being edged with two or three rows of flowering and foliage plants very similar to other beds detailed. Very gay and attractive amongst this wealth of foliage and flowers was a circular bed of Pelargonium *Mrs. Ware*, pink, banded with a variegated variety, and edged with *Lobelia*.

The scene was again changed by a large mass of Bamboos, surrounded on the front side with *Funkias* in flower, while the shrubs formed a capital background. Every winding in the walk brought into view some telling arrangement, and one of the very finest had been obtained by a large bed of *Abutilon braziliense*, planted alternately with *Veronica Andersoni variegata* and *Iresine Lindenii*, banded with *Alyssum saxatile* variegata, edged with *Lobelia Omen*, and margined with a small *Echeveria*.

A beautiful carpet bed was arranged in a lovely spot surrounded by beds of *Cannas*, flowers and foliage, with Palms and other stately plants amongst them in suitable and telling positions. With such surroundings the beauty of carpet beds are really delightful. The bed to which reference has been made had for its centre a diamond-shaped figure of *Alternanthera amabilis*; central circles were formed by *Diotis candidissima*, carpeted with *Mentha* and panelled with *Veronica incana*. Three concentric bands of *Pyrethrum* enclosed with *Alternanthera paronychioides* major and *Leucophyton Brownii*, with circular and diamond patches of *Alternanthera amœna*, the whole being margined with *Antennaria tomentosa*, and edged with *Sedum acre elegans*. Between this and the next carpet bed was a telling mixture at the front of the shrubs, the back being scarlet single Dahlias with *Lobelia fulgens* in front, margined with a very fine row of Pelargonium *John Gibbons*, which appears a great favourite in this park, and edged with *Saxifraga ligulata*. The carpet bed to be detailed was an oblong in shape with three circles down the centre, the central one being planted with *Pandanus Veitchii*, and the two end ones with *Dracæna gracilis*, with a carpet beneath of *Pilea muscosa*, edged with Pelargonium *Manglesi variegatum*, with panels of *Iresine*

Lindeni and *Alternanthera aurea*. *Leucophyton Browni* and *Kleinia repens*, narrow rows, were arranged between two bands of *Alternanthera amoena*, edged with *Sempervivum tabulaforme* and *Herniaria glabra*. This was a charming bed. Behind it was a very suitable and telling background of stately plants of *Brugmansia Knighti* in full bloom, with single Dahlias beneath them, *Pentstemons* and *Pelargoniums* in the front, with a margin of *Pelargonium tomentosum* (peppermint-scented variety). A bed of the variegated Vine (*Vitis heterophylla variegata*) was very beautiful, being well-coloured, with *Acacia lophantha* rising from amongst it, banded with a ring of *Lonicera aurea reticulata*, variegated *Arabis*, *Alternanthera*, and *Spergula pilifera aurea*. *Pelargonium Mrs. Turner* made a pretty bed, and was full of bloom of a rich pink colour, edged with *Miss Kingsbury* and *Lobelia*.

Very effective was another carpet bed in front of a splendid mass of dark-foliaged *Cannas*. The central plant of the carpet bed was *Chamaepeuce diacantha*, surrounded with *Alternanthera magnifica* and *Mesembryanthemum cordifolium variegatum*, dotted with *Rochea falcata*, half-circular figures being formed of *Alternanthera amoena*, edged with *Echeveria secunda glauca* and *Sedum acre elegans*. *Convolvulus mauritanicus* was again most conspicuous, forming an edging to single *Petunias* and a splendid mass of *Erythrina crista-galli* in full beauty. A large square bed was the next notable feature, with raised cushions of *Mentha* dotted with fine *Yuccas*, the centre one being variegated, alternately with *Dracæna congesta* and *D. gracilis*, edged with *Kleinia repens*. Small cushions were also formed in the angles with *Sedum glaucum*, each containing three plants of *Echeveria glauca metallica*, edged with *Leucophyton Browni*, the groundwork of the bed being formed of *Sedum glaucum* margined with *Lobelia pumila*, and edged with *Sempervivum tabulaforme* and *Herniaria glabra*.

Under a large Willow tree a very natural arrangement had been effected with *Philodendron protusum* trained up the stem, probably more beautiful than it would appear in its natural habitat. Beneath the tree in the grass was the old *Sansevieria zealanica* with large succulents and Palms, such as *Seaforthia elegans*, peeping out in the background. Close to was a striking mass of *Acer Negundo variegata* that was shown to great advantage by the surrounding dark foliage. The *Acers* were small standards, their legs being hid from view by *Carnations* tied to them, many of which were in bloom, but the dry weather had told upon them considerably. *Pelargonium Mrs. Pollock*, mixed with *Agatheæ celestis*, with its blue *Cineraria*-like flowers, edged with *Lobelia*, made a simple yet very effective bed.

The coffin-shaped beds, as they are termed, were really perfect examples of carpet bedding, having most beautifully shaped designs, with different varieties of *Alternantheras* margined with *Kleinia repens*, with scrolls of *Leucophyton Browni* intersected with *Mesembryanthemum cordifolium variegatum*, margined with *Alternanthera amoena* 4 inches wide, and edged with *Echeveria secunda glauca*, *Kleinia repens* running through the whole design. The other bed of the same shape was equally beautiful, having *Mesembryanthemum* in the place of *Leucophyton Browni*, and *Mentha* in the place of the first mentioned, the *Alternantheras* used being darker varieties. Another distinct and striking bed was arranged with large plants of *Bonaparteæ gracilis* and *B. tenuifolia* with their long narrow rush-like leaves, a plant of the latter producing its enormous spike of bloom, each plant being surrounded with a row of a Golden-leaved *Pelargonium*, the ground of the bed filled with a blue *Lobelia* and *Alyssum saxatile variegatum*, a band of *Alternantheras* encircled the whole, while the edging was composed of *Sempervivum ciliare*. A very imposing group was formed with dark-foliaged Castor Oil Plants (*Ricinus*), with *Heliotrope* in full beauty beneath, bronze *Pelargoniums* and *Euonymus radicans variegata* forming an edging to the bed.

The scroll beds were very well carpeted, being planted with *Alternantheras*; between single lines of *Pyrethrum* and *Kleinia repens* were *Alternanthera amoena*, *A. versicolor*, *A. aurea*, and *Leucophyton Browni*, the groundwork being composed of *Mentha*, and the bed margined with *Lobelia*, *Echeveria*, and *Sedum*. This was really a charming bed, and displayed that high finish which renders the appearance of these beds so delightful. Another bed no less beautiful had the ground carpeted with *Sedum acre elegans*, panelled with *Leucophyton Browni* and *Alternantheras* between narrow rows of *Pyrethrum*, *Leucophyton*, and *Kleinias*; circular pieces of *Rochea falcata* were conspicuous with *Coprosma Baueriana variegata* in the angles being very dwarf and effective. The edging was similar to that named in the previous bed; the artistic scrolls in these beds being really past description. A simple, yet very pretty carpet bed, was effected by *Rochea falcata* in half-circular figures, *Iresine Lindeni* and *Centaurea candidissima* being also prominent in various shaped figures, with a groundwork of *Mesembryanthemum cordifolium variegatum*, *Mentha*, and *Alternanthera*. In a very suitable position close to what may be termed the alpine garden, was a very effective group of *Acanthus longifolius* with its large spikes of white flowers and leathery, bright, deeply cut foliage. The alpine portion was very effective, with pointed mounds made to represent hills in the background, their summits covered with the silvery foliage of *Antennaria tomentosa*, while *Mesembryanthemums* in great variety, *Yuccas*, various succulents, and other suitable low-growing plants were established on the slopes, the ground beneath them being carpeted with *Sedums*, *Mentha*, *Herniaria glabra*, and other similar small-growing plants. This was a pretty interesting corner, and a beautiful change from the large quantities of fine-foliage and flowering plants to be seen elsewhere, the most conspicuous of which have been noted above.

Last, but not least in importance, are the lovely, natural, cool shady groves of hardy and exotic Ferns that are so tastefully arranged. These Fern groves are charming, and I do not hesitate in saying that such

another piece of outdoor decoration equal to this cannot be found in this country. Many of us have doubtless seen most beautiful masses of Ferns growing luxuriantly where Nature has placed them, but they have been less effective than the group under notice, because the surroundings have not been such as to show them off to the very best advantage. The Fern groves are beautiful, and it is very difficult to fully describe them, for to really appreciate them they must be seen.

I wandered from this Park by the river entrance, where the cornice style of bedding had been adopted, but I shall not stay to describe it. Before closing, however, I must here thank Mr. Rodger for his kind attention and courtesy, and must congratulate him and his able foreman upon their success, for I do not remember ever seeing this Park in such admirable condition before.—B.

DEVON AND EXETER HORTICULTURAL SOCIETY.

AUGUST 21ST.

THE above Society held its annual summer Show of plants and flowers, fruits, and vegetables on Friday last, under favourable circumstances as regards the weather, number and quality of the exhibits staged, not forgetting the financial proceeds of the day, so that on the whole the Exhibition may be pronounced a decided improvement upon any of its immediate predecessors. Plants were shown largely and well. Mr. Lock, who had done so well at Weston, Taunton, and Salisbury, secured the silver cup for ten stove or greenhouse plants in flower, with plants similar to those enumerated in our reports of the shows indicated. The same exhibitor was also first in most of the leading classes for fine-foliage, stove and greenhouse plants. Following him in the same classes were Mr. Brock and Mrs. Ensor's gardener, whose name did not appear. Mr. A. Truman and Mrs. Panget's gardener were also successful exhibitors in classes for Ferns, &c.

The large marquee in which the plants were arranged was rendered very effective by several tastefully set up groups of miscellaneous plants, for the best of which a silver cup was offered, and which was secured by Mr. Brock for an excellent arrangement of suitable plants covering a stage 25 feet by 5 feet. Mr. Lock was a good second. Lord Fielding's gardener was first for six Fuchsias and twelve Gloxinias, &c. Lord Coleridge's gardener showed some good Cockscombs. Mr. Brock was first for six Orchids. Mrs. Ensor was first for a group—an excellent one, too—of miscellaneous plants arranged on a stage 15 feet by 5 feet. Cut flowers were shown well—that is, Roses and Dahlias, and *Gladiolus*, by Messrs. Curtis, Sanford & Co., Mr. Nation, Rev. T. J. Yarde, Mr. S. Dobree, Captain Christy, who had the best twelve Roses distinct. Asters were shown well for the season by Mrs. Hart, Mr. Drew, and also by Mr. Nation, who also had the best Dahlias in the Show.

FRUIT.—137 bunches of Grapes were staged, many of them being of a high order of merit, but the awards in several of the classes were made in the most indiscriminate manner possible, except in cases where size of bunch, form, and finish went together. Red-berried *Hamburgs*, *Madresfield Court*, *Lady Downe's*, *Alnwick Seedling*, and Mrs. Pince, and green-berried *Duke of Buccleuch*, *Golden Champion* and *Foster's Seedling* had no weight whatever with the Judges in question (we are going by their awards) so long as the bunches were larger. Neither had symmetry of outline anything to do with a show bunch of Grapes unless it had size also to commend it to their notice. Such was the standard of excellence set up by the gentlemen who made the awards on this occasion. The most palpable errors of judgment were manifest in the collection of six varieties, the three-bunch *Black Hamburg* class, and the second prize stand in the any other black variety class, as well as the stands in the collection of six bunches, distinct, to which first prize was awarded, most decidedly should not, in the opinion of competent judges present at the Show, have been placed in the prize list at all. Having made the above remarks, which the necessity of the case and the interest of the Society, exhibitors, and Grape culture in the district call for, we will proceed with a summary of the awards as they were made.

For a selection of six bunches of Grapes distinct—First, Mr. W. C. Rafarel, showing *Madresfield Court*, *Duchess of Buccleuch*, *Alnwick Seedling*, *Duke of Buccleuch*, *Lady Downe's*, and *Golden Champion*. Second, Mr. H. W. Ward, with *Gros Maroc*, *Madresfield Court*, *Foster's Seedling*, *Muscot of Alexandria*, *Black Prince*, and *Alnwick Seedling*. Extra, Mr. James, gardener to Sir John Walrond. Six collections were staged. Four good collections of ten kinds of fruit were staged in competition for the silver cup presented by Messrs. R. T. Veitch & Son, the well-known nurserymen of Exeter. First, Mr. H. W. Ward, *Longford Castle*, *Salisbury*, showing three bunches each of *Muscot of Alexandria* and *Alnwick Seedling* Grapes, *Providence Pine Apple*, *Captain Lark's Melon*, *Pine Apple Nectarine*, *Dr. Hogg Peach*, *Moor Park Apricot*, *Old Orleans Plums*, *Morello Cherries*, and *Brunswick Figs*, which was the weakest dish in the collection. Mr. D. C. Powell, gardener to the Earl of Devon, *Powderham Castle*, was a very good second, showing good Grapes, *Pine Apple*, &c. Mr. Bull, gardener to General Buller, also showed well in this class.

There were nine lots of *Black Hamburg* Grapes staged, the first prize being awarded to Mr. G. P. Beumore for three immense bunches, consisting of medium-sized red berries. Second, Mr. James, with medium-sized compact, well-finished bunches. Several other good lots were staged in this class. For three bunches of *Muscats* there were four entries—first, Mr. J. H. Stevens, gardener to C. D. Cave, Esq., for three grand bunches. Second, Mr. J. Barnes, gardener to P. C. Daniels, Esq.; the same exhibitor being again easily first with well-proportioned and superbly finished bunches of *Alnwick Seedling* in the class for any other black variety than *Hamburg*, the second being awarded to three rather loose bunches of the same excellent Grape, the berries being somewhat green about the foot-stalks, in preference to three large well-formed and well-coloured bunches of *Madresfield Court* belonging to some local grower. There were seven exhibits of any other white than *Muscot of Alexandria* shown. First, Mr. H. W. Ward with *Buckland Sweetwater*, the three weighing over 12 lbs. Second, Mr. J. Barnes with three loose bunches, but having large well-coloured berries.

Mr. Bull had the best *Pine Apple*, and Mr. Ward the second best. Mr.

James had the best of Peaches, showing even well-coloured fruit of Princess of Wales; second Mr. Mairs, gardener to Sir John Shelley, with Crawford's Early. Ten dishes were shown, and for nine Nectarines there were a like number of entries, the first prize going to Mr. W. Seward, gardener to Sir H. Davie, for a nice dish of the Pine Apple; second Mr. J. Drew. For one green or white-fleshed Melon, first Mr. W. Seward; second Mrs. Hart. Ditto scarlet, first Mr. Mairs; second Mr. Geeson, gardener to Lord Haldon, Haldon House, Exeter, with R. ad's Scarlet. For nine Apricots, Mr. Mairs was first, Mr. Powell being second. There were thirteen dishes of excellent fruit shown in this class. There was only one dish of Figs—excellent fruits of Castle Kennedy—staged, and for which Mr. Geeson deservedly secured first prize. Mr. Geeson was also first for nine Pears, showing good fruits of Beurré Giffard, and out of nine lots of dessert Apples, Mr. Mairs was first with a good even fruit of Red Joaneting. Second Mrs. Ensor. Mr. Underdown, gardener to Sir John Kennaway, Bart., had the best dish of kitchen Apples, and Mr. Powell the second best. The last named exhibitor had the best dish of yellow or green Plums, showing good fruits of Coe's Golden Drop. Second Mr. Seward. And for a like number of red or purple fruit, Mr. Lang, gardener to Lord Poltimore, was first with good Kirke's. Mr. Powell had the best dish of Morello Cherries, and Mr. Mairs the second best.

VEGETABLES.—These, as regards the collections and single dishes, were shown well in quantity rather than in quality, and without any attempt at dishing up, one collection covering as much space as a like number of dishes of specified quantities in two collections as staged in London would cover. For collection of twelve kinds, first Mr. Sparks, second Mr. Leach. Mr. Ward had the best dish of twelve Tomatoes, showing Stamfordian, and Mr. W. Rowland the second best. We may be excused for suggesting that at future exhibitions of this really good south of England Show the address as well as the names of gardeners and their employers be given on the individual exhibition cards.

Not for competition plants, &c., Messrs. Lucombe, Pince & Co., and Messrs. R. Veitch & Son, both of Exeter, showed a grand lot of plants, consisting of choice stove and greenhouse, fine-foliage, and flowering plants. Messrs. Veitch's plants of single and double-flowering Begonias being remarkably good, the flowers large, well-formed, and the colours well defined. This firm's Pelargoniums were also very good. Messrs. Curtis, Sanford & Co. also contributed some good stands of Roses of Merveille de Lyon, Marechal Neil, and other varieties.

GRAPE-GROWING AT BATH.

I AM happy to be able to somewhat alleviate the fears of "J. S. W." that the extension system of Vine-growing is in danger at my hands. So far from that being the case I have as yet seen nothing to induce me to alter the views expressed in the sentences he quotes from my book. I will endeavour to explain what may appear an inconsistency.

"W. I." remarks, "The position chosen is on a rather sharp declivity with a south-west aspect, a great amount of excavation being necessary before the vinery could be built." Thus one side of the house faces the south-west, and stands well out of the ground, and this is planted entirely with Muscats. The north-east side, in addition to its less favourable aspect, is also below the ground level, and although everything is done that can be done for it I never expect the Vines to flourish there as they will on the more favourable side, and probably they will only remain there temporarily till those on the south-west side grow quite across.

In addition to the disadvantages mentioned all the young Vines were propagated under unfavourable conditions. The workmen were not out of the house till April (last year) was considerably advanced, and the best place I had to strike the eyes was in a frame across the hot-water pipes before the roof was on the house. Now, supposing "J. S. W." to be a greater enthusiast than myself about the extension system, he would not, I believe, recommend leaving growth where there could be the slightest doubt about its perfect maturity. Give me thoroughly ripened wood on which the growths have been kept pinched the same way as for pot Vines, and I would as soon leave 20 feet as I would 1 foot.—WM. TAYLOR.

HALLAMSHIRE FLORAL AND HORTICULTURAL SOCIETY.

THE eighteenth annual Show of this Society was held on the 17th inst., in a field lent for the purpose by C. H. Firth, Esq., the President, at Ranmoor, Sheffield. The weather was all that could be desired and the Show was undoubtedly a financial success, as it may also be considered a success as a high-class exhibition. The exhibits well filled two large tents, one being occupied by the open and gentlemen's gardeners' classes, the other by amateurs and cottagers, who at this Show are always very strongly represented. The President kindly threw open his beautiful grounds and conservatories at Riverdale to the people visiting the Show, which added much to the attractions, and caused the gate money to flow fast and freely into the Society's coffers.

In the gentlemen's gardeners' tent there was a very good display of well-grown specimen stove and greenhouse plants, the principal prizetakers for which were Mr. T. Shelley, gardener to Mrs. Hobson, Burnt Stones, Sandgate; Mr. T. Fogg, gardener to Mrs. Wilson, Lupton Hall; and Mr. Sheridan, gardener to Mrs. Harman, Ranfall, Ranmoor. The first prize for six plants was well taken by Mr. T. Shelley with beautifully fresh and finished specimens of *Miltonia spectabilis*, 4 feet across and full of bloom; *Ixora coccinea* *snperba*, very fine; *Croton undulatus* and *variegatus*, *Stephanotis floribunda*, and *Allamanda Hendersoni*. The same exhibitor was also first with six exotic Ferns, all splendidly grown specimens, one of which, *Davallia Mooreana*, was a magnificent example 6 feet across. Mr. T. Fogg was second with very good examples of stove and greenhouse plants, having fine examples of *Bougainvillea glabra*, *Stephanotis*, and *Dipladenia Brearleyana*, and he also secured first prizes in the classes for *Fuchsias*, *Coleus*, and *Zonal Pelargoniums*, in each of which he showed finely finished specimens.

In the amateurs' tent the most noteworthy exhibits in the classes for plants in pots were the British Ferns. These plants are cultivated in a really first-class manner by numerous amateurs in and around Sheffield, inasmuch that I do not know of any other town or district in which they are equally so; and much of this is, I think, due to the example set for many years past by an enthusiastic and skilful cultivator. Mr. John Eadon, an occasional contributor to the Journal on the subject, and who was for many years a very active and useful member of the committee and large exhibitor at the shows of the Hallamshire Society. The principal prizetakers on this occasion were Messrs. R. Middleton, T. Marples, T. Froggat, and W. Smith.

Vegetables were shown in large numbers, but were not considered to be quite equal in quality to the exhibits of last year, owing to the long-continued dry weather. This was especially noticeable in the classes for Potatoes, which were generally inferior both in size and appearance to those shown last year.

Fruit was very well represented, Grapes, Peaches, and Nectarines being shown by several exhibitors of excellent quality, and Melons especially being very fine and numerous.

Cut Roses were shown in extra fine condition by R. Proctor, nurseryman, Chesterfield, and Duncan Gilmour, Esq., Sandgate. A bloom of A. K. Williams in the stand of the former was the finest which has been seen at any show in the district this season, and will scarcely have been surpassed at any of the National Rose Society's shows.

Capital groups of choice plants not for competition were exhibited by Messrs. Fisher, Son, & Sibray, Handsworth Nurseries, and by Mr. B. Crossland, Richmond Nurseries.

AVERAGE TEMPERATURES.

ONE of your readers writes, with reference to my remark that the temperature of the week ending August 15th was near the average, that "It is cold comfort, when we are suffering from frigidity, to be told we are enjoying the average temperature," and then he adds that he thinks that it will be of interest to give the difference between this August and last.

With your permission I will give two little tables, which will show the exact state of the case.

MAXIMUM IN SHADE.

August.	Average.	1882.	1883.	1884.	1885.
1st week.....	72.0	74.5	72.4	79.7	70.7
2nd „	71.5	73.9	69.7	81.2	71.3
3rd „	70.8	70.6	74.9	79.3	70.0
4th „	70.0	67.7	77.3	68.6	—

MINIMUM IN SHADE.

August.	Average.	1882.	1883.	1884.	1885.
1st week.....	53.8	53.0	53.2	53.5	52.5
2nd „	53.5	53.1	53.9	58.5	51.5
3rd „	52.8	56.4	54.3	52.9	50.8
4th „	52.2	50.8	53.1	52.4	—

This shows that the weeks have been, as I said, near the average (1° or 2° below it), and it also shows that 1884 was as I described it in three successive weeks—"Glorious summer weather," "Another week of glorious summer weather," and "The fine summer weather which had prevailed since the beginning of the month lasted through this week, but it was not quite so hot, the temperature being about 3° below that of the preceding week, though still considerably above the average."

My correspondent seems to have forgotten that an average, to be good for anything, must include a long series, not merely a few.—G. J. S.

CIRENCESTER.

AUGUST 20TH.

THE annual Exhibition of the Cirencester Horticultural Society was, by the kind permission of T. W. C. Master, Esq., held on the date named in the Abbey grounds, situated but a short distance from the centre of the town. The Abbey, dedicated to St. Mary, was founded by King Henry I., upon the abolition of the collegiate church that existed long before the Norman Conquest; but this, in its turn, suffered demolition. There is, however, almost overshadowing a portion of the grounds, the splendid edifice of the Church of St. John the Evangelist, with its handsomely proportioned, embattled, and pinnacled tower 134 feet high, from the top of which, on such a day as this, a view of the surrounding country excites a sense of admiration, the recollection of which cannot but be treasured, more especially that of Oakley Park, the seat of the Right Hon. the Earl Bathurst. The poet Pope was among the celebrities who enjoyed the hospitalities of Allan Lord Bathurst, to whom he dedicated his third epistle of "Moral Essays," commencing "Who shall decide when doctors disagree?" and there is in one of the rides in the park a stone structure designated Pope's Seat, besides many other objects of interest that may be seen by visitors, the noble owner of this magnificent park allowing it to be open to the public.

The schedule of the Society does not comprise a class open to all, consequently growers within an easy distance of Cirencester ("Our town of Cirencester in Gloucestershire."—King Richard II., act 5, scene vi.), who are famed for their stove and greenhouse plants, are not attracted to the capital of the Cotswolds as they might otherwise be. Nevertheless, the exhibits in many of the classes were of a high order of merit. The productions were exhibited in two large marquees, the largest measuring 130 feet by 60 feet, on the central stage of which were arranged some of the most noteworthy of the exhibits.

In the amateurs' class for a collection of plants grouped for effect, the first prize was awarded to the Misses Brown, Further Barton, the second position being gained by Mr. James Taylor, Rendcombe Park. For six distinct varieties of stove and greenhouse plants in bloom the same exhibitors succeeded in taking the prizes in the same order. In the premier

exhibit the plants, with the exception of *Statice profusa*, were remarkable well grown. These were, *Allamanda grandiflora*, *A. nobilis*, *Vinca oculata*, *Cassia corymbosa*, and *Dipladenia amabilis*, and in the latter were very fine specimens of *Allamanda nobilis*, *Bougainvillea glabra*, *Vinca alba*, and three *Ixoras*, the third prize going to H. Van Notten Pole, Esq., Watermoor House. For six ornamental-foliaged plants, *Begonias* and *Coleus* excluded, Mr. James Taylor was placed first with a splendid *Cycas revoluta* and fine specimens of *Maranta Lindenii*, *Croton Weismanni*, *C. interruptus*, *C. pictus*, and *Anthurium crystallinum*. In the second prize collection of the Misses Brown were fine specimens of *Cissus discolor*, *Caladium Prince Albert Edward*, and *Cycas revoluta*. Major Chester Master, M.P., Stratton House, was third, amongst his best specimens being a finely coloured *Dracena McArthurii*, *Alocasia metallica*, and well-grown plants of *Croton pictus* and *C. Weismanni*.

For a collection of exotic Ferns, Mr. James Taylor occupied the premier position, and his exhibit comprised some remarkably fine specimens, particularly those of *Davallia Mooreana*, *Dicksonia antarctica*, *Blechnum corcovadense*, *Adiantum trapeziforme*, *A. gracillimum*, and *Neottopteris nidus* avis. The second prize was taken by H. Van Notten Pole, Esq., who staged fine plants of *Davallia canariense*, *Adiantum farleyense*, *A. concinnum latum*, *A. Veitchii*, *A. trapeziforme*, *A. gracillimum*, and *Lomaria gibba*, while the third prize was taken by the Misses Brown, in whose collection there was a well-grown specimen of *Nephrolepis Duffii*, as well as good examples of *Cyathea dealbata* and *Adiantum farleyense*. The class for British Ferns was well contested, the collections embracing some of the best forms of our indigenous Filices, but the manner in which they were staged easily admitted of further improvement. Mr. W. Miller was awarded the first prize, the Misses Brown being a good second, and Mr. James Creese was placed third. In the class for six Zonal Pelargoniums, very creditably grown plants were staged of Ferdinand de Lesseps, Mrs. Wm. Paul, L. Grand, Emile Licau, Elegance, and Vesuvius, the prizes going to the Misses Brown and H. Van Notten Pole, Esq., in the order named. For six tricolor Pelargoniums, the schedule, it might appear, designedly discourages the cultivation of this class; however, there was a collection of six varieties staged by Major Chester Master, M.P., which was justly awarded the first prize. The classes for Fuchsias were both represented by specimens that reflected much credit on the growers of them, they being far above the average merit of plants generally exhibited at provincial shows. In both classes the successful exhibitors were the same, and the awards were in the same order, the first prizes being won by Major Chester Master, M.P., second honours going to the Misses Brown. For Gesneriaceae plants, no number being stipulated, the first prize was awarded to H. J. Elwes, Esq., Preston House, for six Balsams the Misses Brown were first, and H. Van Notten Pole, Esq., second. For six *Begonias* in flower the same competitors occupied the positions as in the former, and the Misses Brown were again placed first for six *Coleus*, while Major Chester Master, M.P., was second. For Cockscombs, six plants, T. W. C. Master, Esq., The Abbey, was first, H. Van Notten Pole, Esq., second, and the Misses Brown third. For a specimen stove or greenhouse plant in bloom the Misses Brown secured the first prize, exhibiting

One of the most interesting plants in the Show was *Peristeria elata*—the "Dove Plant"—introduced into this country from the neighbourhood of Panama in 1826. The plant in question bore a tall spike, on which there were eight expanded, peculiarly fragrant, waxy-white flowers, the columns of which, bearing a resemblance to a miniature dove, suggested to the inhabitants the name of "*El Spirito Santo*," (doubtless through the same religious feelings as obtained for the *Passiflora* the name of *Passion Flower*), under which name it was first imported. In this class H. J. Elwes, Esq., was second with an exceedingly well-flowered plant of *Hoya bella*, and Mr. James Taylor was third with *Bougainvillea glabra*. For three hardy plants grown in pots H. J. Elwes, Esq., was first, H. Van Notten Pole, Esq., second, and T. W. C. Master, Esq., third. The collections of cut blooms of Pelargoniums, Verbenas, Carnations, and Asters were fairly well represented, but Roses and Dahlias were meagre. The bouquets to be competed for by ladies as well as the epergnes of flowers did not present the artistic finish that we are accustomed to see. Wild flowers arranged in vases or baskets for effect were fairly good, as were those of stove and greenhouse plants. For cut flowers of hardy herbaceous plants H. J. Elwes, Esq., secured the first prize. Amongst his most noteworthy specimens were *Veratrum nigrum*, *Sparaxis pulcherrima*, *Gladiolus dracephalus*, *G. Lemoinei*, *Allium Wallichii*, a yellow form of *Verbascum phoenicum*, and *Alstromeria chilensis*. The second prize was awarded to T. W. C. Master, Esq. J. H. Elwes, Esq., also obtained the first prize for new, rare, or interesting plants, the most noticeable one being that of *Darlingtonia californica*.

Fruit and vegetables were of a high order of merit, especially those of Grapes, Melons, Peaches, Apricots, Plums, and Red Currants, the three bunches of Madresfield Court Grapes exhibited by Sir T. Bazley being extraordinarily fine, the berries being very large and well coloured. The most noticeable of the vegetables were those of Beet, autumn-sown Onions, Potatoes, Carrots, Red Cabbage (very fine), Kidney Beans, and Vegetable Marrows.

In the cottagers' division the quality of the exhibits generally was surprisingly good. There were also staged by Messrs. Jno. Jefferies & Son, not for competition, a fine collection of Tuberous *Begonias*, comprising about forty varieties, three stands of cut Roses, in which were fine blooms of François Michelin, Alfred Colomb, Magna Charta, A. K. Williams, Mrs. Jowitt, Charles Darwin, Madame Eugène Verdier, Dr. Andry, Maréchal Niel, and Madame Victor Verdier. The same firm also exhibited a number of groups of *Gladioli*, stands of white Carnations, the beautiful *Tigridia grandiflora alba*, and an effectively arranged stand of eighteen bunches of hardy perennial flowers from their Cirencester nurseries.—I. B. E.

AMONGST THE NOVELTIES.

NOVELTIES unfortunately are very attractive to me, and the consequence is that I often lay out money in them which would have been far better spent on sterling old standard varieties. "Nothing venture nothing win" applies to purchasers of new vegetables as well as to other

matters, and if we never tried we should never know, so I expect I shall go on in the same way, trusting to light on a treasure now and again to recompense me for failures. This season has been a very trying one for my garden, for my soil is poor and shallow, on gravel, and situated in the highest part of Essex. If vegetables have stood this season fairly in my garden I think they must be good. However, here goes for the results of my trials. Mr. Editor will cut me short if I attempt too much, so I will begin alphabetically, leaving over half for another issue.

Broad Beans.—King's Essex Wonder Longpod I found inferior to several other varieties. John Harrison, Prolific, quality good, but pods not long enough for exhibition. Nettlefield's Prize, a tall very productive variety of good quality. Weh's Mammoth beats them all in every respect.

Dwarf Beans.—Ne Plus Ultra I find early, very productive, and good. I can strongly recommend it as a first early, and the Monster Negro Longpod is a first-rate one to follow, bearing a large crop of tender and very long pods.

Runner Beans.—Whether I have the true variety or not seems doubtful to me, because after seeing it so highly spoken of I hardly expected to find it (as I have it) no whit better or longer podded than the old Scarlet.

Beet.—Goldie's Superb Black. I like the look of it very well, but have not tried it yet. Broccoli and Brussels Sprouts will have their turn later on, also Cabbage.

Chou de Burghley I am much taken with when planted late, so that it comes in just before spring Cabbage. Its Marrow-like flavour is unique. It requires plenty of water in the pot when cooking, and if this is not observed it may taste something strong, like many other vegetables under the same treatment.

Carrots.—Stuart & Meins' Early Exhibition and another early variety of Messrs. Biddle's I tried, of which the former was preferable, but Early Nantes when true is far better.

Cauliflower.—Snowball I found early, white as snow, and of first-class quality.

Cucumbers.—Purley Park Hero I think very highly of. It is very productive, handsome in appearance, and of very delicate flavour. Empress of India I found a rather shy fruiter, but the quality was good.

Onions.—Golden Rocca and Queen, autumn-sown, did well, of which the latter came in early, having bulbs weighing over half a pound each on the average. The young ducks found these Onions very useful. The Roccas are very good, and I am pleased with them. Cranston's Excelsior, Rowsham Hero, Lancashire Prize, and some of Gilbert's strain were spring-sown. I find the first and last the best, Excelsior being a globe and Gilbert's a flat. Both are very good, and I look forward to trying them in a better season. Rowsham Hero I am disappointed in, but perhaps another season it may do better. So far it looks no better than Lancashire Prize, and that is of no account.

My favourites, Peas and Potatoes, I will leave to another time if the Editor will give me room. I look forward to porusing the remarks of some far more able pen on the novelties they have tried this season. Let us live and learn, and above all let us try to distribute the knowledge we have attained by sometimes sad experience.—H. S. EASTY.

WESTON-SUPER-MARE SHOW.

THE thirteenth annual Exhibition of this Society was generally considered one of the most successful yet held, and in some respects was superior to that just previously held at Taunton. The arrangements were perfect, and Mr. F. T. Perrett, the new Secretary, is to be congratulated upon the success attending his labours. Mr. John Matthews, of pottery fame, takes great interest in the Society, and is a most genial and hospitable chairman. Fine weather prevailing, the attendance of visitors was most satisfactory, and it is to be hoped a good balance at the bank is the result.

Liberal prizes were offered for twelve stove or greenhouse flowering and fine-foliaged plants, and with these Mr. G. Lock, gardener to W. B. Cleave, Esq., Crediton, was easily first, his collection including fine healthy specimens of *Kentia Fosteriana*, *Areca lutescens*, *Kentia Belmoreana*, *Croton Disraeli*, a grand plant of *Erica Marnockiana*, *E. æmula*, *Dipladenia Brearleyana*, *Ixora Duffii*, *Eucharis amazonica*, all in good condition. Mr. J. Cypher, Cheltenham, was a rather poor second, his most noteworthy specimens being of *Erica ampullacea*, *Anthurium Andreanum*, and *Croton majesticus*. Mr. J. F. Mould, Pewsey, was a good third. The best six flowering plants were staged by Mr. J. Mould, who had fresh, medium-sized, well-flowered examples of *Dipladenia amabilis*, *Erica Anstiniana*, *Ixora reginae*, *Bougainvillea glabra*, *Erica Marnockiana*, and *Clerodendron Balfourianum*. Mr. Cypher was placed second with a fairly good collection, but not up to his usual form. Mr. Lock was also first for six fine-foliaged plants, having immense healthy specimens of *Cycas revoluta*, *Lantana borbonica*, *Areca Verschaffeltii*, *Gleichenia rupestris glauca*, *Croton Williamsii*, and an *Alocasia*. Mr. Cypher was a good second. The best six exotic Ferns were staged by Mr. Lock, these including very large specimens of *Davallia Mooreana*, *D. polyantha*, and *Gleichenia rupestris*. Mr. W. Brooks was second, and Mr. J. E. Cole third, each having very creditable groups. In the class for six *Adiantums* Mr. J. F. Taylor won the first prize, having medium-sized and very healthy specimens of *A. tenerum*, *A. cuneatum*, *A. cardioclona*, *A. gracillimum*, *A. farleyense*, and *A. amabile*. Mr. W. Rye, gardener to J. Derham, Esq., Snayd Park, Bristol, was a good second, his best plants being of *A. cardioclona*, and *A. Farleyense*, and Mr. J. P. Cassell was third. Zonal Pelargoniums were very well shown by Mr. W. Adams, gardener to W. Smith, Esq., the varieties being *Emily*, *Mucevia*, *Ellen*, *New Life*, *Arabella*, and *Mrs. Strachey*. There were also classes provided for Fuchsias, Lillies, Clematis, *Coleus*, *Begonias*, Balsams, Achimenes, Cockscombs, and Lycopodiums, and all were fairly well shown, the most successful exhibitors

being Messrs. W. Brookes, W. Ash, J. E. Cole, J. P. Cassell, and F. W. S. Wicksteed.

A second large tent was devoted to the productions of amateurs or their gardeners, and here again the competition was remarkably good. With six flowering plants Mr. Lock took the lead, these consisting of medium-sized fresh examples of *Ixora Williamsii*, *Dipladenia Brearleyana*, *Allamanda grandiflora*, *Erica tricolor Wilsonii*, *E. Eweriana superba*, and *Clerodendron Balfourianum*. Mr. W. Rye was a good second, his collection including a good *Stephanotis floribunda* and *Ixora Williamsii*, and the third prize was won by Mr. W. Hughes, gardener to H. Pethick, Esq. Mr. Lock was again first with six fine-foliaged plants, these including a handsome specimen of *Croton Warreni*, and a large *Gl. ichenia spelunca*. Mr. W. Rye followed very closely, his fine even group being somewhat marred by the similarity of the *Crotons*, variegatus, *Weismanni*, and *pictus*, the remainder consisting of large, very healthy specimens of *Areca sapida*, *Latania horbonica*, and *Dæmonorops palembanica*. With four *Adiantums* Mr. Lock was easily first, and Mr. C. Holland, gardener to W. Ash, Esq., a creditable second. Several good groups of *Coleus* were arranged, the first prize going to Mr. W. Andrews, gardener to W. Smith, Esq., who had fine plants of *Butterfly*, *Sensation*, *Weston Favourite*, and *Weston Sunset*. *Balsams*, *Fuchsias*, *Gloxinias*, *Begonias*, and *Zonal Pelargouiums* were also shown creditably by various exhibitors.

Cut flowers, including *Roses*, *Dahlias*, and *Gladioli*, were shown in greater numbers and excellence than might have been anticipated, and there were a considerable number of very tastefully arranged vases and bouquets. Mr. E. Miller, gardener to F. Tagart, Esq., Old Sneed Park, Bristol, was first in the open class for cut flowers, the collection being noteworthy both on account of the choiceness of the flowers and also the tasteful manner in which they were set no. Messrs. Cypher, and Perkins & Son, Coventry, were the most successful exhibitors of bouquets, the former, as usual, occupying first position, the quality of the flowers, as well as their arrangement, being of the best description. The first prize for cut spikes of *Gladioli* was easily won by Mr. Dobree, Wellington, some of his best sorts being *Bushman*, *Flamboyant*, *King of Scarlets*, *Celestine*, *Prosper Langier*, *General Chasse*, *Eugène Scribe*, *Leda*, *Helen Masterman*, and *Belzoni*. Mr. W. Brooks, Weston-super-Mare, also staged creditably, and was awarded the second prize. *Hollyhocks* were well shown by Messrs. W. J. Burgess and W. Brooks; *Asters* by A. Walters, Bath; single *Dahlias* by T. Carr, Trunkle, and A. Walters; double *Dahlias* by A. Hill; and S. Budd, Esq., was the principal prizewinner with *Roses*. Some of the best of the latter were *La France*, *Alba rosea*, *Marie Baumann*, *Captain Christy*, *Louis Van Houtte*, *Bouquet d'Or*, *Mons. E.Y. Teas*, *Marie Van Houtte*, *Queen of Queens*, and A. Colomb. Messrs. Parker & Sons, Bristol, received the second prize for *Roses* for a meritorious stand. The latter firm also exhibited a stand of a charming white bedding *Viola*, this variety possessing the merit of being sweet-scented.

Cut flowers were also well shown in the amateurs' tent. Mr. Rye was first with twelve varieties of choice cut flowers, and Mr. E. S. Cole, Sneyd Park, Bristol, displayed great taste in his first-prize device, combining fruit and flowers. Mr. M. Hookings was first in another good class for a floral device, the *Bristolians* generally excelling in this section. With twelve varieties of *Roses* Mr. S. P. Budd was easily first, his stand including excellent blooms of A. K. Williams, Duke of Wellington, François Michelon, Duchess of Bedford, Magna Charta, Arthur Dickson, and Comte de Raimbaud. Mrs. J. Burgess was a good second with *Roses*, and Mr. Dobree again first with *Gladioli*.

The display of choice fruit was fully equal to former occasions, but there was rather less hardy fruit than usual. With eight dishes of fruit Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, was first, staging a collection very similar to that he had at Taunton; and Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, followed closely, his collection including good Black Hamburg Grapes, Black Tartarian Cherries, High-cross Hybrid Melon, Grosse Mignonne Peaches, and Moorpark Apricots. The third prize went to Mr. W. Rye, whose best dishes were fairly good Muscat of Alexandria Grapes, Hero of Lockinge Melon, and a very fine dish of Ford's Seedling Peach. Muscat of Alexandria Grapes were not represented in great quantities, and the only really well finished examples were shown by Mr. W. K. Wait, the second prize going to Mr. J. Marshall, gardener to M. Whitwell, Esq. In the any other white class, Mr. A. Young, Clifton, was placed first for three beautifully finished bunches of Buckland Sweetwater; Mr. Miller following with fine bunches of a seedling Grape bearing a strong resemblance to Canon Hall Muscat, and Mr. J. Marshall was third with good Buckland Sweetwater. There were fifteen entries in the class for Black Hamburg, Mr. Iggulden taking the first prize for compact, well finished bunches, the second prize going to Mr. J. Ellicott, gardener to W. Tugwell, Esq., Bath, and the third to Mr. A. Young, each having good examples of this popular sort.

There were fewer exhibits in the class for any other black variety, and here Mr. W. Nash took the lead with three grandly finished bunches of Black Alicante, Mr. E. T. Hall following with fairly good Madresfield Court, while the third prize went to Mr. Sweeting, Sneyd Park, Bristol, who staged Venn's Seedling in fairly good condition, but the examples were by no means so good as those with which he caused a sensation the first time he exhibited this presumably distinct sort of his own raising. Melons were shown in good numbers, and some were very good. Mr. Rye was first in the class for green-fleshed varieties with Hero of Lockinge, and Mr. Miller was first in the class for scarlet-flesh varieties with Blenheim Orange, the fruit being of excellent quality in both instances. Peaches and Nectarines were very fine, but the Judges rather unduly favoured those of best appearance. For instance, a handsome and somewhat small dish of Crispin Galande, staged by the gardener to Mrs. Temperley, were placed before a very fine dish of Grosse Mignonne exhibited by Mr. W. Daffurn, gardener to Mrs. Walker; and a handsome dish of Elruge staged by Mr. Daffurn was put before a grand dish of Pitmaston Orange staged by Mr. Wollen, Wedmore. Figs were well shown by Messrs. J. Matthews, gardener to T. T. Knypton, Esq., an W. Fear; and Apricots by W. Fear and A. Hill, while the classes for Cherries, Pears, Plums, and Apples were all fairly well filled.

Vegetables were not so plentiful as usual, but the quality was remarkably good. The best collection of eight dishes was put up by Mr. Tilley, gardener to Colonel Cotgrave, and comprised good examples of Sutton's

Perfection Tomatoes, International Kidney Potatoes, Autumn Giant Cauliflowers, Snowball Turnips, Sulham Prize Celery, Lemon Rocca Onion, Intermediate Carrot, and Scarlet Runner Beans. J. Law, Esq., was a good second, and Mr. J. Chaff, gardener to T. Chamberlain, Esq., third. Mr. Rye had the best Tomatoes, a fine dish of Hackwood Park Prolific; and Mr. J. H. Parsons was first in the class for Cucumbers with a fine brace of Webb's Perpetual Bearer. The cottagers also showed a lot of good vegetables, fruit and flowers.

Mr. J. Matthews, the Royal Pottery, arranged an extensive assortment of terra cotta statuary, vases, and other useful articles, which for excellence of design, perfection of finish, and quality of material, could not well be surpassed.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 25TH.

THE exhibits in competition for the prizes offered for cottagers' and artisans' garden produce formed the greater portion of the display at this meeting, and constituted a really wonderful exhibition of vegetables. There were between 600 and 700 entries, and in several classes the number of competitors was astonishing, as for instance in the class for a collection of six dishes of vegetables, of which there were no less than thirty-two exhibitors, and the Potatoes were also surprisingly numerous. The whole of a table extending down the centre of the conservatory and some portions of the side tables were devoted to these contributions, which comprised, in addition to those named, Beans, Peas, Onions, Beet, Turnips, Vegetable Marrows, Cucumbers, Tomatoes, Herbs, Apples, Gooseberries, Currants, and a few other fruits.

Gardeners had been invited to send dishes of Plums to this meeting for comparison and re-naming where necessary, but the only response were those sent from Mr. Smee's garden, together with the collections from Messrs. Rivers and the Society's Gardens at Chiswick. Messrs. Bunyard's handsome Apples were, however, much admired amongst the exhibits before the Fruit Committee.

The floral groups were not quite so numerous as on some previous occasions, but Mr. T. S. Ware again contributed liberally from his extensive collection of herbaceous plants, and had some choice arrangements of Lilies and Dahlias. Messrs. Kelway & Son similarly furnished a bright and important group of *Gladioli*, including 140 spikes of nearly as many varieties. Several fine Orchids added interest to the meeting, and one very remarkable incident occurred, the new *Angraecum Leoni* being shown in flower by five exhibitors, to each of whom a first-class certificate was awarded—a memorable event in the history of certificated plants, for probably a similar occurrence has never taken place before.

FRUIT COMMITTEE.—Present, T. F. Rivers, Esq., in the chair, Harrison Weir, G. Bunyard, J. Willard, J. Ellam, J. Roberts, Dr. R. Hogg, Wm. Paul, R. D. Blackmore, J. Woodbridge, G. T. Miles, and F. R. Rutland. Mr. Ward, the Gardens, Longford Castle, Salisbury, sent three splendid bunches of Buckland Sweetwater Grapes, to which the large bronze Banksian medal was awarded. Mr. G. Cummins, the Gardens, The Grange, Wallington, sent six dishes of Plums, two of Apples, and two Pears. Mr. P. Robertson, the Gardens, Hartridge, Jedburgh, sent a branch of a seedling Red Currant called Mrs. Gladstone. It was a very fine Currant, but not to be distinguished from others in cultivation. Mr. Humphrey, the Gardens, Nash Court, Faversham, sent a very handsome seedling Melon, which, when cut, was found to be inferior in quality. Mr. Hudson, the Gardens, Gunnersbury Park, also sent a seedling Melon which was not of good flavour. Mr. G. Bunyard, the Nurseries, Maidstone, exhibited fruit of Bijou, Triomphe de Vienne, and Beurré Giffard Pears. They had been grown under glass, and therefore the flavour was not well developed. Triomphe de Vienne was quite rotten at the core. A letter of thanks was awarded. Messrs. Kelway and Son, Langport, sent three Cucumbers—Hero of Langport, Melton, and Conqueror—to which a cultural commendation was awarded. Messrs. W. Paul & Son, Waltham Cross, sent a dish of Beurré Giffard Pear, which was in excellent condition, and also Beacon and Peach Pears, to which a letter of thanks was awarded. Mr. William Earley of Ilford sent fruit of *Prunus domestica* Myrobalana, the yellow-fruited variety.

Mr. G. F. Wilson of Weybridge Heath sent a dish of Transparent Gage Plum, beautifully coloured and highly ripened, to which a cultural commendation was awarded. Messrs. T. Rivers & Son, Sawbridgeworth, exhibited a collection of twenty dishes of fruit, chiefly Plums, many of which were seedlings of their own raising; to this the large bronze Banksian medal was awarded. Mr. George Bunyard of Maidstone sent sixty-five dishes of fruit, to which a silver Banksian medal was awarded. Thirty dishes of Plums were sent from Chiswick, representing as many varieties, some of the most remarkable being Reine Claude d'Oullins, Belgian Purple, Bradshaw, Diamond, Dammas Musque, Gisborne's, Victoria, and Sharpe's Superior, very prolific.

FLORAL COMMITTEE.—Present John Fraser, Esq., in the chair, Shirley Hibberd, H. Cannell, E. Hill, H. Turner, F. R. Kinghorn, W. Wilks, W. Bealby, Maxwell T. Masters, J. Child, J. James, H. Bennett, G. F. Wilson, G. Duffield, J. Noble, Thomas Baines, J. Dominy, H. M. Pollett, H. Williams, J. Hudson, James O'Brien, and Amos Perry.

The exhibits before this Committee were not very numerous, but, as will be seen from the list of plants certificated, they comprised several of much interest. Some stands of Dahlias were shown by Messrs. Keynes, Williams and Co., Salisbury; C. Turner, Slough; Rawlings Brothers, Romford; and T. S. Ware, Tottenham, representing the best of the early varieties in good condition. G. F. Wilson, Esq., Weybridge, exhibited a stem of *Lilium auratum* with twenty blooms from a plant 8 to 9 feet high planted in 1881, for which a vote of thanks was accorded. *Lilium superbum rubro-striatum* is a pretty variety with regularly striped flowers. *Lilium tigrinum splendens*, a handsome variety, and *Gentiana asclepiadea* were also well shown by the same gentleman. Messrs. H. Cannell & Sons, Swanley, sent a fine-foliage Begonia with silvery leaves, red in the centre, edged with green, spotted with white. Lady Howard de Walden, The Mote, Maidstone, sent a fine double yellow Tuberous Begonia bearing her name. Mr. Owen of Maidenhead also had a plant of a double yellow Begonia named *Maréchal Niel*, and a single rose-coloured one named *Marquis of Lorne*, both good. M. J. Linden, Ghent, sent a plant of a *Cattleya* named *Magenta*, which was not considered

distinct enough to merit an award. Mr. W. Bull, Chelsea, had some fine Caladiums, Ibis Rose and Perle du Bresil with that certificated being the best. A vote of thanks was also accorded for *Dion edule lanatum*, a woolly-leaved form, which, we believe, has been previously honoured. *Cattleya crispavenusta*, from the same establishment, with white flowers and a crimson fringed lip, was also noteworthy. Messrs. J. Veitch & Sons, Chelsea, had a pretty collection of *Salpiglossis* in many varieties, crimson, purple, yellow, and parti-coloured. They also had several handsome *Gladioli* of the Lemoinei type, which have been previously noted, and plants of their magnificent *Rhododendrons* Dyak and Gloria Mundi, the former orange and the latter rosy salmon.

A silver-gilt Banksian medal was awarded to Messrs. Kelway & Sons, Langport, for their grand collection of 140 spikes of *Gladioli*, most varied in colours, and representing the most distinct of the very numerous varieties now grown. Mr. T. S. Ware, Tottenham, was adjudged a similar award for his superb and extensive collections of hardy flowers which invariably attract a crowd of admirers. The New Plant and Bulb Company were awarded a bronze Banksian medal for a large collection of *Lilium auratum* in many varieties, arranged with a few Orchids and other plants.

PLANTS CERTIFICATED.

Dahlia Mrs. John Walker (Rawlings Bros.).—A handsome, compact, well-built bloom, the florets white tipped with purple; distinct and attractive.

Androsace lanuginosa Leichtlini (Max Leichtlin).—A white variety of this well-known plant, the flowers having a red centre; pretty, but not more so than the ordinary type.

Dahlia Germanica nova (H. Cannell & Sons).—An exceedingly distinct Dahlia with acute closely packed florets of a bright rose colour, the blooms of medium size and neatly formed.

Lælia elegans Littleana (H. Little, Esq.).—A handsome variety, suggestive of *L. elegans* Turneri; sepals and petals tinted with purple to the base, the lip being an intensely rich crimson, except in the throat, which is pure white, contrasting well with the deep neighbouring colour.

Angraecum Leoni.—Certificates were awarded for this plant to Sir Trevor Lawrence, Bart., M.P.; Mr. W. Bull, Chelsea; R. H. Measures, Esq., The Woodlands, Streatham; C. Dorman, Esq., The Firs, Laurie Park, Sydenham; and W. Vanner, Esq., Camden Wood, Chislehurst. It is a pretty species, but has been somewhat over-estimated, and its comparison to *A. sesquipedale* is certainly not justified. The leaves are thick, curved, and placed vertically. The flowers are pure white, 2½ inches in diameter, the lip 1½ inch long, and three-quarters of an inch wide, of an ovate form, the sepals and petals being narrow, and the greenish-white spur several inches long. The plants had two or three spurs of four to five flowers each clustered rather closely on the foliage.

Gastranema hybrida (Sir Trevor Lawrence, Bart., M.P.).—An extremely interesting plant, a hybrid between *G. sanguinea flammea* and *Vallota purpurea*, with narrow deep green leaves, and flowers resembling the *Vallota* in form, but slightly smaller, and of a light orange-scarlet hue.

Blandfordia flammea (Sir Trevor Lawrence, Bart., M.P.).—A very handsome bulbous plant, with a head of twenty flowers and buds, the former bell-shaped 3 inches long, scarlet, with a yellow throat and green-tipped lobes.

Caladium Comtesse de Maille (W. Bull).—Leaves semi-transparent, with a green margin and red veins; a very pretty and delicate variety.

Odontoglossum Insleyi splendens (W. Bull).—Flower of great size, the sepals and petals brown, the lip yellow, spotted with bright red.

Rhododendron Pearl (J. Veitch & Sons).—A supposed hybrid between *R. Princess Royal* and *R. Aucklandi*, though the influence of the latter parent cannot be traced. It is, however, very distinct, with neat white and faintly rose-tinted flowers, with small closely set leaves.

Gladiolus Masque de Fer (J. Veitch & Sons).—One of the *G. Lemoinei* type, scarlet, with the two lower petals deep maroon. A distinct and handsome variety.

Lælia Sedeni (Baron Schröder).—A magnificent Orchid, with narrow crimson sepals and petals, the lip nearly 1½ inch broad, intense crimson, with a white throat. The colour of the lip is exceedingly rich, and renders it one of the best of its type.

Aqanisia cœrulea (H. J. Buchan, Esq., Southampton).—A botanical certificate was awarded for this curious but not very attractive Orchid. The sepals and petals pale purplish, and curving over the hollowed purple-veined lip.

New Gladioli (Kelway & Son).—*Princess Olga*, flowers white, beautifully streaked with rose, large and borne in a massive spike; a grand variety. *Prince Albert Victor*, scarlet, with a white central blotch in the lower petals, spike very compact. *Viscount Cranbrook*, salmon scarlet, crimson throat, spike long and dense; very handsome. *Princess Irene*, flower large, white margined with rose, of fine substance, and borne in a noble spike; a lovely variety. *Sir Henry Drummond Wolff*, brilliant scarlet, with a crimson blotch in the lower petals; very effective. *Prince Henry*, purple streaked with white, and central blotch.

THE COTTAGERS' SHOW.—As the largest exhibition of the kind that the Royal Horticultural Society has yet held, this merits a word or two of notice. Between 600 and 700 entries were received in the thirty classes provided, and throughout the quality of the productions was highly creditable to the exhibitors. The collections of six kinds of vegetables were especially good, and that the competition was keen may be judged from the fact that thirty-two collections were staged, five prizes being awarded, two collections highly commended and two commended. The first-prize vegetables from Mr. C. Beckett, Tyler's Green, Penn. Bucks, were extremely good, and would not have disgraced a professional gardener. They included Excelsior Tomatoes, Woodstock Kidney Potatoes, Veitch's Autumn Giant Cauliflowers, Carter's Champion Beans, Long Red Surrey Carrots, and Giant Rocca Onions, all neatly arranged on dishes with Parsley. Potatoes were well shown, there being 112 entries in the four classes. Both Runner and Kidney Beans were also strongly represented, the former by thirty-six and the latter by twenty-four dishes. Onions were fine, Turnips, Carrots, Beet, Vegetable Marrows, and Tomatoes being equally deserving of commendation. Apples were mostly of fair size and numerous, Gooseberries being large, and Currants good. As a whole the Show was most satisfactory, and proved con-

clusively that the working classes are making substantial progress in the cultivation of the useful garden crops.



HARDY FRUIT GARDEN.

LATE SUMMER PRUNING.—Now is the time when much good or much harm may be done to fruit trees by pruning. Good, if we shorten the midsummer growth sufficiently to give free admission of light and air to the spurs and every part of the branches; harm, if we shorten so much as to induce basal buds to start into growth now when the time remaining during which growth can advance, is so short, that the full development of shoot and bud is impossible. In five weeks from this time October will be here; we may then expect a fall in temperature that will at once check growth. It requires very little calculation, therefore, to see that if by injudicious pruning now we induce buds to start into growth, that growth will prove abortive and worthless. Instead, therefore, of close pruning, leave the wood from 4 to 6 inches in length according as the buds are thick set or otherwise, and then while the outer buds start into growth, the inner or basal buds will become full and plump without bursting, so that we can prune down to them after the fall of the leaves, and so leave them in the best possible condition for an early strong growth in spring. At one time it was our practice at this season of the year to twist and bend down the midsummer growth to render the lower buds plump, and not to prune at all till winter; but the hanging shoots proved so serious an obstruction to the passage of light and air that shortening of the shoots was adopted with the best results. Why, when, and how to prune is not half so well understood as it ought to be. These hints apply solely to trees cultivated on the spur system, the free growth of orchard trees only requiring some slight regulation and thinning in winter. As we prune now it will be well to mark barren trees of gross rampant growth for root-pruning to be done in September, both to arrest the flow of sap as early as is safe, and to induce the roots to put forth some rootlets this autumn. It may safely be laid down that the best time for root-pruning is early in September, and there can be no reasonable objection to the pruning being thorough in its application to young trees, provided they are prevented by stays from becoming subsequently loosened in the soil. Old trees, on the contrary, should have only half the roots shortened this autumn, leaving the remainder for next year, but we must take especial care to go fully half way under the tree so as to sever tap roots running downwards into the subsoil. The length of roots left on the tree should be about 2 feet for young trees up to 6 feet for old trees according to size: the greater length being only necessary for very large old trees. After pruning we like to fill the trench with sound, rich, mellow loam for the young roots to lay hold of, and to give a top-dressing of rich manure from the stem outwards to the trench. Do not root-prune trees indiscriminately; it is to trees of rampant growth that we must apply it, fruit-bearing and not mere wood growth being our end and aim in the culture of fruit trees; and when we see a fruit tree with robust growth of branch and stem, sturdy, stout, and strong, yet bearing no fruit year after year, we know that there is also excessive vigour of root-growth, which must be checked if we would have fruit.

Fruit-growers generally have recently had a severe lesson about the importance of shelter for orchards and fruit gardens. High winds prevailed so generally just as the fruit was half grown, that even from Ireland came the sad plaint of the fruit being swept off every tree, and many a fruit-grower on this side the Irish Channel has repeated the cry. To plant standards at all is to run much risk of such losses, but to plant them in exposed situations adds considerably to the risk. To know how to plant and what to plant, we must live much among fruit trees during the season of growth, and we must be eager to learn and quick to apply the lessons of the seasons in our practice. Let no young man suppose that because it has been his privilege to serve for a time under some famous fruit-grower, and among a large collection of fruit trees, that he is proficient in fruit culture. If he is intelligent, earnest, teachable, and therefore humble, he may have gained much useful knowledge, but it is only the costly teaching of experience that can render him a past-master of the art—costly because of the penalty of some of the best years of our life which we have to pay for its acquisition.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Early House*.—The trees in the early house have completed their growth, and the resting period may be said to extend through September, October, and November, though when very early forcing is practised the trees are started by the middle of November, therefore to give them the full benefit of the intervening ten weeks or so measures should be taken to keep them as cool as possible. If the trees are trained to trellises under fixed roofs all the doors and ventilators should be kept constantly open, but these forms of roofs are not suitable for early-forced trees, as the difficulty is to prevent premature development of the buds; hence if the roof-lights are fixed, and there is the least sign of the buds becoming too prominent, the removal of some of the squares from the central part of the roof will increase the current of air, and tend

greatly to reduce the temperature of the house. The removal of the lights for a time will arrest premature bud-development, and the exposure to dew and autumnal rains will benefit the foliage, whilst the roots will receive a more uniform moisture than is ever attained by artificial watering. When the leaves fall the final pruning should be done, but all weak and useless wood having been cut out immediately after the fruit was gathered the autumnal pruning will be of a very trifling character.

Second House.—The trees having been cleared of the fruit quite a month ago, as well as any weak and useless growths, they will now have the wood quite firm and the buds prominent. Ventilate freely both top and front, and with moveable roof-lights, which there ought to be in all fruit houses subjected to early forcing. These should be removed by the early part of September or during the first fortnight of that month, as exposure to night dews and autumnal rains is of great benefit to the trees. The trees will need an occasional syringing to keep the foliage clean and healthy, and there must not be any lack of moisture at the roots. In the case of vigorous trees it will be well to keep the wood rather thin, so as to secure its thorough ripening by the free admission of light and air.

Third House.—Trees that are forced so as to ripen their fruit from the middle of July onwards will now be cleared of the fruit, and when this takes place all useless wood should be cut out, and the growths if at all crowded thinned, leaving no more wood than will be required for next year's fruiting or for affording the needful extension of the trees. Thoroughly cleanse the trees of dust and insects by means of the garden engine, and if necessary apply an insecticide to keep red spider and scale in check if not to eradicate these pests, it being important that the foliage be kept clean and healthy to the last. If the trees are young and vigorous and the wood not ripening kindly close with sun heat early in the afternoon, running up to 85°, and towards evening commence ventilating for the night.

Watering Peach Trees in Houses.—An impression prevails that dryness at the roots hastens the ripening of the wood, but this seriously injures the trees; indeed, many fine trees have been irreparably damaged by withholding water, and more buds fall from this cause than any other. When the borders are properly made and drained there is scarcely any fear of over-watering, and in such, or indeed any, the soil should never be allowed to become dry, and the mulching should not be taken off until the time comes for the annual surface dressing of fresh compost. When the borders are badly drained the roots strike downward in search of moisture, and make late growths—a quantity of breastwood and soft growth—when they should be resting. When trees are in the latter condition careful lifting and relaying the roots in new soil resting on good drainage is the best and most profitable expedient. The proper time to operate on the roots is when the foliage shows signs of ripening, but before it falls from the trees.

Late Houses.—The fruit in these is more advanced for ripening, and will need free ventilation night and day, but syringing the trees should cease, though if the days are bright a moderate air moisture will be necessary for the benefit of the foliage. The borders should not be allowed to become dry. The growth of the latest varieties, such as Walhurton Admirable, Princess of Wales, Salwey, &c., will still be swelling, and if the present dry weather continue the trees will derive considerable benefit from the continued supplies of liquid manure and mulching. The wood in all late houses should be kept rather thin, so as to secure the solidification of the growths, and if the wood is not likely to ripen kindly gentle fire heat with a free circulation of air will be of great benefit and tend to improve the quality of the fruit as well as ripening the wood. Midseason varieties, however, will under the influence of a favourable autumn ripen the wood without fire heat.

MELONS.—The fine weather has been very favourable to Melons growing in unheated pits and frames, in which water henceforward should be used very sparingly; but should the plants be likely to require water give it before midday, or sufficiently early to allow the foliage to become dry before night, otherwise mildew will be likely to be troublesome, and canker will probably appear, for which a sharp look-out must be kept, and quicklime rubbed well into the affected parts upon its first appearance. Houses in which the fruit is ripening will need a free circulation of air, and if the weather prove cold and wet gentle fire heat will be necessary. Late plants will require attention in stopping, thinning, and tying the shoots, keeping them fairly thin to admit of light. Damping and watering must be regulated according to the weather and the condition of the plants. Fire heat will be necessary to prevent the temperature falling below 70° at night, and to keep it between that and 75° in the daytime. Expose the fruit as much as possible to the sun's rays.

THE BEE-KEEPER.

UNITING OR RETURNING SWARMS.

THE old-fashioned bee-keeper seems to have an instinctive dread of preventing an inordinate increase of his bees, even if he learns—as he often does, from the larger amount of honey obtained in the apiaries of his more advanced neighbours—that a far greater weight of honey can be accumulated by stocks that are allowed to follow their natural instinct by

swarming once, but are prevented from further weakening themselves. If the latter is permitted the bee-master cannot gain from the short honey glut of most counties so great a weight of honey as he would have been enabled to do if, content with a moderate increase only, he had returned or united to other hives his casts or second swarms. This would prevent the mother hive being reduced so seriously in strength by sending out a number of starveling swarms, which are of themselves unable to prepare a home against the coming winter season. They might, however, if two or more were united, or if each swarm after the first was returned to the mother hive, make the stock not only to gather a plenteous store, but to give a moderate surplus to the bee-keeper, and to remain a strong healthy colony, fit to brave the winter. Weak stocks in autumn are also constantly liable to the hosts of pilferers ever ready to rob a weakling hive of its unprotected stores.

There is no manipulation so simple as that of uniting swarms and stocks; but a very few minutes are needed to effect the union so beneficial to both the bees and their master. I remember Dr. Bevan gives three usual methods by which union has been attempted, and he himself adds a fourth. These are—"Fuming them, immersing them in water, and aspersing them with sugared or honeyed ale," and another by operating upon their fears." Imagine the poor bees immersed in water to effect a union, or put to sleep by nauseous fumes, or sprinkled with sugared ale! Possibly each method was successful, but the one which to me appears by far the simplest is perhaps related to the third and fourth methods of the good doctor. It matters little whether two stocks or two swarms, or a stock and a swarm, are to be operated on; it is equally successful in any case, under any circumstances, and as an additional recommendation to those who love simplicity it is quite unnecessary to seek an interview with her majesty the queen mother of the hive.

Suppose, then, a swarm has issued and been hived in straw skep, it should be placed as near as possible to the stock or swarm to which it is proposed to unite it, and there left till the evening. The only requisites to have at hand ready for the dusk are a cloth and a smoker and a little syrup scented with a few drops of peppermint with which to sprinkle the bees in order that the peculiar scent may be deadened, they being the more kindly and certainly received by the occupants of their future home. At dusk, then, spread the cloth before the hive with which it is desired to effect the union; not that there is any virtue in the cloth itself, but it prevents the bees from being entangled in the grass or any other refuse or herbage near the hive. Let some sticks be placed upon the cloth to prop the hive placed upon them up some 2 inches from the ground. After sending into the stock hive a few puffs of smoke and leaving the bees time to fill themselves, take up the hive containing the swarm, and with a "violent jerk" throw down all the bees upon the cloth; sprinkle them quickly with the scented syrup, and place over them the other stock, covering the whole to protect them from wet or wind. Leave them till early morning, when the now strengthened stock should be placed once more upon its old stand, in order that the bees flying early to the fields may not, missing their hive, fly away and die at the entrances to other hives. The above simple plan, then, carefully carried out, never fails to bring about the desired union without the loss of time, the loss of bees, or the trouble entailed by some of the more elaborate plans for effecting the same purpose, in which catching the queen and killing her generally holds a foremost position.

Let each one try for himself and see how simply the union may be effected, and he will in future never hesitate to unite whenever he thinks such union likely to benefit his bees. One word of warning, however, should be given, and that is, that if a second swarm be joined to a first it sometimes happens that the older queen succumbs to the attack of her more nimble rival; but as in such case the eggs only of a very few days are lost, and a young active queen takes

the place of her more aged predecessor, there is perhaps more gain than loss.

The plan of action when uniting two stocks is exactly similar, with the exception that one stock has first to be driven from its combs into an empty hive, the less time that elapses between the driving and uniting the more complete and certain will the success attending the operation be. To conclude, let me say that if it is preferred—and it is in many cases the wiser course—to simply return the second swarm, the plan of action is to hive the swarm in the usual manner, leaving it for a few hours, and then taking it and throwing it back upon the front of the hive from which it issued. This, too, rarely if ever fails; but if next day the swarm should issue again the same operation should be repeated, and the result will be that the desire of the bee-master will most certainly be attained. These hints are given at the suggestion of a bee-keeper who does not always succeed in effecting happy unions; but when he did attempt to unite according to his old plan there was often a massacre, ending in the almost total annihilation of the bees of both stocks. To some the plan here given may be of use, and if those who are already acquainted with good systems for effecting a like object look with contempt upon rules so often repeated and so well known to them, let them call to mind that when they were novices such hints were of good service to them in enabling them to become proficient in the art of bee-keeping. —FELIX.

FRAME HIVES v. SKEPS.

In the Journal for July 30th "A Hallamshire Bee-keeper" makes the extraordinary statement that he would not simply give the skep a place in the apiary, but he would place it first. He then gives what he calls "a nut for advanced bee-keepers to crack." Now, as I have kept bees in skeps for something like twenty years, and have discarded skeps in favour of frame hives for the last four or five years, I would like to ask him by what magic he will insure the skeps swarming and the swarm giving a maiden swarm after giving a "crop" of surplus honey before the stock in a frame hive is ready to swarm. If the stock in the frame hive is properly managed it will be quite ready for swarming by the middle of May, and in all probability the stock in the skep will not swarm before the 7th of the same month at the very earliest, and not more than one or two out of a dozen stocks will give swarms during the first half of May at all. "A Hallamshire Bee-keeper" also says that to get the most profit by bee-keeping "stocks must be kept and wintered in skeps and the swarms put in frame hives." What, may I ask, is to be gained by this except a lot of trouble and loss of time? as bees will winter at least as well in a frame hive as in any skep, or, if you like, Stewarton hive that has ever been made. It seems to me "A Hallamshire Bee-keeper" should learn to manage and winter bees in frame hives before attempting to instruct others; this is easily done without any such absurdities as ventilating floors, so strongly recommended by "A Lanarkshire Bee-keeper," whose first "hint" in last week's Journal I most cordially endorse—viz., "To ask all bee-keepers to take nothing for granted, but test and prove everything before putting anything into general execution.

I have often been surprised to find bar-framists have not replied to many of the articles which have of late appeared in the Journal, and beginners will, I fear, be likely to take many things for granted simply because they have not been contradicted. I would ask all such to bear in mind the above-mentioned "hint" whenever they feel inclined to try any of the ways of bee-keeping given in such variety. There is no question in my mind as to the superiority of the bar-frame hive over all others, either for comb, or extracted or run honey; either for quantity or quality the skep is simply nowhere, and the Stewarton cannot give the comb honey in a saleable form for this part of the country. Even 2 lb. sections do not sell so readily as 1 lb., and as to supers they are quite unsaleable except at a lower price than extracted honey. I do not consider "A Lanarkshire Bee-keeper" has in any way "shown the superiority of supers over sections," as he assumes. Will he kindly say on which half of the hive he had the sections and supers this season to test which was best? as I find the bees will often fill tier above tier of sections over the centre and front of the hive, and at the same time not work the back row of sections in any of the crates. My crates hold twenty-four sections each, and I have had three or four of these on a hive at once.

I think "A Lanarkshire Bee-keeper" was a little mixed when he wrote his article for the Journal of the 13th inst., I mean when he says, "For indeed if people are as fastidious as I am they will hesitate before purchasing the finger-marked comb in sections, which will have to be broken up and sold in small pieces." This is just where the 1 lb. sections, so strongly recommended in the "Bee Journal" and by most bar-framists, are so vastly superior to the large bars of the Stewarton and the supers "A Lanarkshire Bee-keeper" is continually recommending. Sections do not have to be broken up to be sold in small pieces, as they are small pieces ready sealed up when finished by the bees; and if hives will give

"126 lbs. of fully finished sections" what more can anyone want? I last year took 62 lbs. of sections and 85 lbs. of extracted honey from a hive managed in the exact way "A Lanarkshire Bee-keeper" says is so fatal—keeping the queen breeding late in the season by feeding, and feeding and spreading brood in spring. It is the facility a frame-hive gives for spreading brood which is one of its most valuable points; and if the hive is kept crowded with bees as recommended by Mr. Cowan, the author of the system, there is no risk of chilled brood, it is only when part of the advice is acted on that mischief occurs.—A CAMBRIDGESHIRE BEE-KEEPER.

USEFUL HINTS.

I CANNOT do better than refer your readers to the article by "Felix" in the number for August 6th, page 123. Bee-keepers following the advice given there will not regret it.

Enlarging Hives.—As this season has shown many bee-keepers the folly of having too small hives, and carrying supers close to the brood of the stock hive, being the immediate cause of brood in supers and discolouration of combs. All such hives should be enlarged. This can be done either by nadiring or supering. Had the frames been on, the compound principle, nadiring, would have been the better plan, but when not, supering should be resorted to. An intermediate super of sufficient dimensions should be put on, and have it filled before the honey season is on, when the supers proper should be put on. The intermediate super should have a bar less than the hive has, the two outside ones on each side to have the extra width. When the supers proper are put on, care should be taken that the outside combs of intermediate supers are not sealed; if they are, break the seals, as bees dislike to travel over sealed honey to enter supers.

Preparing for Winter.—All hives not at the Heather should be put into proper order for standing the winter without delay. Feed where required, cover, and contract the entrance. Make stands secure, and put the ground in front of hives so that water will not stand in pools. Where roofs are deficient in ventilation have the defect remedied, and when once a hive is arranged make no alteration of hive or site. If moving is necessary, take the hives some miles distant for a month, when they may be brought back and set on the new site.

At the Heather.—If fine weather continues bees will make great weights. Great attention should be paid that none lack super room, as well as being careful not to give too much. When many are crowded together strict watch should be kept as to robbing, and if the bloom is past remove the frame at once.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

F. & A. Dickson & Sons, Chester.—*Catalogue of Dutch Roots.*

E. Webb & Sons, Wordsley, Stourbridge.—*Catalogue of Bulbs, 1885 (illustrated).*

James Veitch & Sons, King's Road, Chelsea.—*Catalogues of Hyacinths and other Bulbs (illustrated), Trees, and Shrubs, and Lists of Carnations, Picotees, and Strawberries.*

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway.—*Catalogue of Bulbs, Fruit Trees, Roses, &c. (illustrated).*

William Paul & Son, Waltham Cross.—*Bulb Catalogue, 1885.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (Pitcairnie Correspondent).—Your letter has been forwarded in accordance with your request.

Rose Garden (A Lady Gardener).—Arrange the beds in a series of oblongs scalloped at the ends alternately, with round beds of the same width, following the curved outline of the ground, allowing plenty of grass between them, and the garden will look very well.

Vines Unsatisfactory (A Subscriber).—There are far too many canes the house. They should be at least 3 feet 6 inches apart (better 4 feet

6 inches), and the spurs upon them on opposite sides 18 inches. This would give you stronger and better ripened wood and much finer fruit. The roots are in a very poor kind of border, but as the Vines show plenty of fruit the soil cannot be in a very wet sour condition. We hardly think Muscats the size of peas now will come to anything. Apply a dressing of quicklime in autumn at the rate of a hushel per rod (30½ square yards), and point it in with a fork. It will not answer to make holes in the front wall and a border inside, as the roots will not be induced to enter it, or very tardily. Train the rods more thinly, and you will soon see a marked improvement.

Heating a House for Cucumbers and Tomatoes (*Idem*).—You will need bottom heat for the Cucumbers, two rows of 4-inch pipes for each bed, presuming there will be one on each side of the house with a pathway up the centre, and two rows of 4-inch pipes will be needed for top heat. Bottom heat is not necessary for Tomatoes, and for top heat you will require two rows of piping along both sides of the house to afford the requisite heat in winter.

Training a Passiflora (*A. J. R., Brixton*).—We scarcely understand your letter. You ask the "best time for slipping, and whether it would harm them if trained up now." If you desire to propagate from your plant, young shoots cut into lengths of 6 inches, and inserted in pots or boxes of very sandy soil, kept moist and covered with a bellglass or squares of glass, and stood in a warm shaded place, will strike now. The ends of the cuttings should be severed close to a joint from which the leaves are removed, and be inserted firmly a little more than half their length in the soil. The plants may be trained now over the space they are desired to cover, but not crowding them closely together, as the more thinly they are disposed the harder the growths will become, and the better they will flower next year.

Propagating Dracanas (*J. B. W.*).—If you will split some flower pots lengthways and place the two parts together around the stems close to the leaves, fill the pots with a free compost of loam, leaf mould, and sand, affix them firmly, and keep the soil moist, the pots will become filled with roots, and the tops can be cut off. If the stem is rather hard, rooting is facilitated by notching; but if not hard, and they should not be where the pots are placed, they root freely without being cut. Roots are also emitted into thick balls of moss tied firmly round the stems and kept constantly moist in a warm house.

Grapes Shanking (*A. H. G.*).—It is very difficult to account for the Grapes shanking. Overcropping can hardly be the cause in the case of the Alicante, which is lightly cropped. No doubt if the "thousands of surface roots" were allowed to become dry there would be a break in the supply of sap, and this might cause the failure, especially if followed by a deluge of water and a damp atmosphere. Perhaps you started the Vines early, and forced out the bunches before there was good root-extension for their support. The other Vines are too heavily cropped, and the sooner the fruit is cut the better, or the Vines will be so weakened as to be unable to perfect even a fairly good crop this year. Do you open the ventilators very early in the morning? There is something wrong in the management somewhere, and we have observed that when a person makes such a mistake as to overburden young Vines he is apt to commit other errors. If the border is inside the house is it moist throughout the mass? If wet on the surface and dry below the Vines will not flourish. We are very willing to help you, but only appear able to do so by suggesting possible mistakes, or directing your attention to matters that may possibly require your attentive consideration.

Carnations (*L. P. Bouchier*).—Pride of Penhurst is good, and the pods do not split; Belle Halliday is also good, and you may grow both. You will find a list of Carnations and Picotees for beds on page 83, the varieties being arranged as nearly as possible in the order of merit under the respective sections. Strong plants of seedling tree Carnations will stand the winter the same as the others, and flower when large enough in the open air, and continue flowering for a long period.

Seakale (*Knocklinn*).—When Seakale is flowering the stems should not be cut down to the ground. The proper method is to take off the heads before the flowers expand, leaving all the foliage on the stems, as the leaves secrete matter for the formation and support of crowns at the base of the stems. The flower heads when cooked in a young succulent state are excellent, many persons considering them delicious. If you have any not too far advanced try them; ours were pinched off several weeks ago.

Blush Hyacinth (*A. M.*).—Your question is not as you suggest, "unreasonable," but quite the contrary. The Hyacinth to which you refer is not likely to be *La Grandesse*, the bulbs of which are too costly to be largely grown for "flower shops." It has a massive spike with closely set pure white bells, and is perhaps the finest white Hyacinth in cultivation. From your description of the flowers we suspect the variety to which you refer is either *Norma* or *Tubiflora*. The former is dwarf, with large bells thinly arranged on the spike, colour very delicate pink, changing almost to blush. The latter is flesh colour, with large bells and a taller spike. *Norma* we know is largely grown for market, and this is possibly the variety you have admired. You might order bulbs of both, which are cheap, but we should have the greater number of the variety last mentioned. We know a gentleman who has 700 plants grown of *Norma* for the decoration of his London mansion.

Heating Glass Structure (*Chas. E. Smith*).—We presume you wish the structure heated so as to afford two different temperatures, as you have a division in the house, practically forming two houses or divisions. In that case you will need four rows of 4-inch pipes in one structure to maintain a temperature of 60° to 65° at night, and 70° to 75° by day, as required for stove plants, and two rows in the other to afford a temperature suitable for greenhouse plants. It will be advisable to have the pipes so arranged that you can heat the houses separately or together, which will entail somewhat more expense in the first instance in valves as well as piping, but it will be more satisfactory and cheaper in the end. We should think the vertical boiler would be sufficiently powerful to heat the quantity of piping you will require, as you will not have 200 feet altogether, but its power will of course depend on its size, of which you do not furnish particulars. We should not go to the expense of another boiler until we had ascertained the heating capacity of the present one, which we think will be sufficiently powerful unless of a very small size. We should have 4-inch pipes, those being the best for general purposes.

Crassula coccinea (*Miss Kemp*).—We presume this is the plant to which you refer, and is commonly known as *Kalosanthes*. If all the shoots are cut down the plant will not flower next year, but will be fine the year after, and on this account cultivators often have two sets of plants; but it often happens that plants with only two shoots will produce but one head of bloom, and then the second shoot will be sure to follow the year after, and thus a plant may be made to flower every year. If this plant with two shoots offers to flower on both instead of one, and you wish the plant to flower every year, you must forego the pleasure of having both shoots to flower the first season. In that case, as soon as you can perceive the flower-buds in the spring, you must cut down one of the two shoots, and let the other one flower. The lower down the shoot is cut the better. If there is only an inch or two of it left, it is sure to produce three times the number of young shoots that will be necessary to retain. If you select three of the best placed, these will be enough for a plant so young; therefore, instead of two flower-heads, we have only one of them, and three others coming up to flower next season. As soon as the single truss of flowers begins to fade, about the middle of August, this flowering shoot must be cut down close likewise, and from it succession shoots will be obtained, so that, in a large old specimen there are many flowering shoots and succession ones growing on at the same time; and, as soon as the plants are done flowering, the shoots which have borne the flowers are cut back to different lengths, according to the size or shape the plant is intended to be grown. Every portion of the old shoots cut off in August will make cuttings; but the best cuttings are obtained from the top ends of young vigorous shoots; they will root in a greenhouse, window, or frame. Abundance of air, strong sunlight, and plenty of water during their two months of active growth, but little during the rest of the summer and autumn, and scarcely any in winter, are the leading principles in their culture.

Names of Fruits (*E. H. B.*).—1, Nectarine Peach; 2, if the flowers are large it is *Barrington*; 3, too much decayed—perhaps a small specimen of *Dr. Hogg*; 1, Nectarine Victoria; 2, *Rivers' Orange*; 3, *Albert Victor*, but we cannot be certain about any of these, not knowing the size of the flowers. (*W. M. Rose*).—*Citron des Carmes*.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Mrs. H. S.*).—The specimens with no numbers attached are *Salisburia adiantifolia*, *Taxodium distichum*, *Antennaria plantaginifolia*. (*J. C.*).—1, *Sedum album*; 2, a *Selaginella* resembling a variety known in gardens as *densa*; 3, *Epilobium angustifolium*; 4, *Lycium europæum*; 5, *Campanula pumila*; 6, *Sedum spurium*. (*G. J.*).—1, *Lysimachia lanceolata*; 2, *Veronica longifolia*; 3, *V. gentianoides*; 4, *Spiræa salicifolia*; 5, insufficient to be recognised; 6, *Linaria cymbalaria*. (*J. D. P.*).—The plant with white flowers and pinnate leaves is *Spiræa Lindleyana*; the other is *Eucomis punctata*.

COVENT GARDEN MARKET.—AUGUST 26TH.

TRADE quiet, but at low prices clearances are eventually made.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 6 to 3 6	Melons	each	1 0 to 2 0
Cheerries	½ sieve	0 0 0 0	Oranges	100	8 0 12 0
Filberts, Kent. ..	per 100 lbs.	25 0 0 0	Peaches	per doz.	1 6 8 0
Currents, Red ..	½ sieve	3 6 4 0	Pears, kitchen ..	dozen	0 0 0 0
" Black	½ sieve	4 0 5 0	" dessert	dozen	1 6 2 6
Figs	dozen	1 0 1 6	Pine Apples English ..	lb.	2 0 3 0
Gooseberries	½ sieve	1 6 2 0	Plums	½ sieve	1 3 4 0
Grapes	lb.	0 6 2 0	Strawberries	lb.	0 0 0 0
Lemons	case	15 0 21 0	St. Michael Pines ..	each	3 0 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 3
Asparagus	bundle	0 0 0 0	Musbrooms	punnet	0 6 1 0
Beans, Kidney	lb.	0 3 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 1 0 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzoneria	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 6
Heros	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 5
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 6



THE CLERGYMAN'S FARM.

(Continued from page 172.)

A DESIRE to know our best sorts of Grass and Clover intimately prompted the sowing of small trial plots with the best selection to be had of them, and it was the remarkable result

of this experiment that fully convinced us of the value and importance of what is now termed alternate husbandry. On well-drained soil in a high state of fertility, free from all noxious weeds, ploughed deeply and worked to a fine tilth, sow a mixture of strong-growing Grass and Clover seed, and you will obtain a crop of highly nutritious fodder of twice the bulk of an ordinary crop of meadow hay for one, two, three, or even more consecutive years, provided the fertility is fully sustained by seasonable applications of manure. Turned to full account partly for hay and in part as green food, such a crop is not only profitable in itself, but it enables us to dispense with some portion both of manual and horse labour, and thus it adds to the profits and lessens the expenses of the farm. Economy of labour is a matter of vital importance to every farmer, and as a means to that end alternate husbandry merits general attention. Upon the clergyman's farm it should be applied to all the land not wanted for corn, roots, permanent pasture, or other green crops. Perennial Rye Grass, Trefoil, red and white Clover, is frequently the mixture for one or two years; and to impart a more permanent character to the herbage we add Cocksfoot, Timothy, Meadow Foxtail, Alsike Clover, and Cow Grass. Whether we retain the crop for two or more years altogether depends upon the manner in which we are able to treat it. A heavy annual dressing of manure is necessary for the Grasses, and if we can add a liberal quantity of wood ashes to it the Clovers will derive much benefit from them.

It has been stated that by laying down the land in this manner we practically give it a rest, and it is subsequently broken up again in an improved fresh condition. This statement is erroneous and misleading, for the land requires no rest: it is simply a medium for giving food to plants, and so long as we keep it fully stored with fertility, taking especial care to restore to it the elements of plant life or food taken from it during each season of growth, we may continue cropping it with corn, roots, or green crops, with a feeling of certainty that there will be no falling-off in the quantity or quality of produce. Of equal importance to sustained fertility is mechanical division and drainage of the soil. The three things are to be regarded as indispensable. With them in judicious combination we can afford to laugh at the idea of the land wanting rest. Without them we are quite certain to have failure in some degree—not in a fitful uncertain manner, but strictly in proportion to our faulty culture or negligence of the soil. Far, however, from laughing at the grave assertion that the soil requires rest just as though it had sinews and muscles, we would express our regret that it has been made and repeated so frequently, for is not the long fallow a result of such teaching? Glibly enough are we told that the land wants rest when we ask why we still meet with bare fallows in summer, but in vain do we inquire why it wants rest. No doubt after two or three consecutive wet summers it is liable to become foul with perennial weeds, and more time and finer weather is required to eradicate them than can be had in spring.

To spend our lives in the culture of land, and not to understand clearly its nature and requirements, is really to court failure. Why do we drain soil? Why do we impart mechanical division to it? What is mechanical division? What sort of manure is best for each crop? When ought we to apply it? If farmyard manure or artificial manure best? What advantage or disadvantage is there in the use of either manure? These are some of the questions of vital importance to which we have striven to give plain answers repeatedly, and although they cannot be dealt with at length in these articles they cannot be altogether ignored, and may be answered briefly. We drain soil to relieve it from an accumulation of surface water, to prevent water rising from the subsoil to the surface by capillary attraction, and to check excessive evaporation, by which the air upon the surface is rendered moist and cold to the serious harm of tender vegetation. Mechanical division is imparted to the soil by an admixture of hard gritty matter, and its effect is to prevent

the soil from settling down into a hard, crude, inert mass, and in combination with drainage to afford free admission to the air and its fertilising gases. Speaking generally, genuine artificial manures are best if applied soon enough for each crop to derive full benefit from them during its growth. The advantage of artificial over farmyard manure is obvious, for by its use we avoid the heavy outlay involved in the manufacture, carting, and spreading of farmyard manure, only we must avoid all dealers' specialties for farms, procuring the manures separately from a reliable source and mixing them ourselves. We are fully aware that the doing this demands scientific knowledge of a higher nature than that possessed by an ordinary farmer, but if he be teachable there are plenty of means available for the acquisition of such knowledge; and the man who takes full advantage of the opportunity to learn and apply to practice the teaching of science will with care succeed when others fail, simply because he knows how to combine science with practice.

(To be continued.)

WORK ON THE HOME FARM.

Corn harvest is now in full progress. It was our intention to have threshed most of the Peas as they were carted from the field, but owing to unsettled weather we were unable to do so, and they were either stacked or put into barns. Wheat and Beans came next, the Beans being taken in the earlier part of the day, and the Wheat when the sun was high—say by 10 A.M. Much Wheat is already in the stack, for it ripened fast under the hot sun. Oats were left till the straw was well ripened, as we are always afraid of much heating in the stack, and subsequent mustiness. Barley, though last, is on the whole an excellent crop, but its culture has been extended so considerably that prices are almost certain to be low for some time to come. As soon as horses and men can be spared, barrows will be run over the stubbles to clear off most of the straw, then horse hoes and harrows will be brought into full play to render the land clean as soon as possible. Pigs will first be run over the stubbles to pick up loose and fallen corn. Draining of all wet land will promptly be taken in hand as men can be spared, for it is a good rule to do a certain number of acres every year, and so to spread out the expense that it may not at any time prove to be a serious matter. There must be careful supervision of this work, the pipes in each drain being put in along the entire length of it before any soil is put in, so that an inspection may be made and any faulty work set right, a single pipe put in out of line or too high or low, often spoiling a drain. See that the gradient is sufficiently correct from end to end, and the outfalls clear and well away from all risk of subsequent obstruction. Let corn ricks be thatched as soon as they are built, and see that an air of neatness and finish is imparted to the whole of them. Stubble Turnips may be sown as soon as the land is cleared and ploughed for them. Late-sown Turnips have not come well owing to the drought; late Mustard, too, is a comparative failure. We must, however, let no chance slip of sowing again so long as there remains any hope of getting even half a crop, for the value of any green crop later on in the season is so great that we must do our best to obtain it. Should the drought continue, we shall probably make exceptionally large sowings of Rye, Trifolium, and Winter Oats this autumn, all of them being valuable green crops, to which we shall duly turn next spring when pastures may be bare and winter stores run low.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain
		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1885.		Inches.	deg.	deg.		deg.	deg.	deg.	deg.			
August.												
Sunday	16	30.282	63.9	56.0	S.E.	60.0	77.7	49.9	113.7	44.8	—	
Monday	17	30.141	63.8	56.8	S.W.	60.5	79.8	49.7	122.7	43.3	—	
Tuesday	18	30.118	60.6	55.8	N.	61.5	73.3	54.2	84.9	48.4	—	
Wednesday ..	19	30.118	54.8	51.0	N.E.	60.6	62.3	45.7	85.6	39.8	—	
Thursday	20	29.927	55.2	51.4	N.W.	60.2	68.4	51.6	115.6	47.6	0.146	
Friday	21	29.869	56.9	52.4	W.	59.7	62.4	52.6	99.4	48.7	0.035	
Saturday	22	29.844	56.2	53.8	N.W.	59.2	66.3	52.2	101.8	43.3	—	
		30.043	58.8	53.9		60.2	70.0	50.8	103.4	45.8	0.179	

REMARKS.

- 16th.—Fine, bright, and warm.
 17th.—Fine morning, rather cloudy in afternoon.
 18th.—Overcast morning, then brighter, but no sunshine.
 19th.—Dull and cold.
 20th.—Dull and cold, with a little drizzle at 11 A.M., then some sunshine. Thunder, rain and hail about 2 P.M., then showery.
 21st.—Fine morning, cloudy afternoon and evening, rain in night.
 22nd.—Generally cloudy till evening, then fine.
 Rainfall still very small, and temperature very near the average—slightly below it—
 G. J. SYMONS.



COMING EVENTS

3	TH	Abingdon.
4	F	Crystal Palace (Fruit and Dahlias) two days.
5	S	
6	SUN	FOURTEENTH SUNDAY AFTER TRINITY.
7	M	
8	TU	Royal Horticultural Society (Dahlias and Grapes).
9	W	Edinburgh (two days).

THE ROSE SEASON OF 1885.

AS the din of battle has now ceased and the weapons of war laid aside for another year, for the combatants in this strife are like those Italian commanders, of whom we read that after a hard summer's fighting they used to go into winter quarters, so as to prolong the strife, their trade being likely to suffer if the contests were too quickly decided. It may now be a good time to do as I have been wont to do in former years—take a survey of the past season. I feel, however, some difficulty, for I have seen the most conflicting accounts, and on matters which one would think there could be little room for difference of opinion. Let me take one example. It was stated in one gardening paper that the blooms at South Kensington stood remarkably well, as there was a cool breeze through the conservatory—very different from the day before; while another writer stated that the blooms opened more rapidly than he ever recollected. No less an authority than Canon Hole has stated that it was the best season he remembered for forty years, while I have seen the statement of others that it was inferior to last year.

I must, then, take my own lines, and not be influenced by any of the opinions that I have read or heard. I have had, again, a tolerably fair opportunity of judging; for although I have gone neither to Wales or Scotland, I have enjoyed the opportunity of judging at thirteen or fourteen shows, beginning at Canterbury on June 26th, and ending at Darlington on July 25th, and have moreover visited many private and public gardens where the Rose reigns supreme. But the difficulty of judging about the quality of the Rose season has been considerably increased of late years. In the first place the Rose season, or rather the Rose-showing season, is very different from what it used to be. Before the establishment of the National Rose Society Rose shows were few and the exhibition season was soon over; in fact, after the first week in July, although Roses might be seen at other shows, they held only a secondary place. When considering the character of the Rose season only these had to be taken into account; but now all this is changed. As I have said, from the end of June up to the very end of July exhibitions in which the Rose forms not the principal but the sole feature are held. The number of exhibitors has multiplied beyond what one would have at one time deemed possible, and as most growers are influenced by the condition of their own plants in giving their opinion concerning the general growth, it comes to pass that we have so many different opinions; and one has, in deciding as to the character of the Rose season, not to think over some three or four shows, but over some three or four and twenty and a corresponding number of gardens. Another reason why it is difficult to judge is that the requirements of the Rose-grower and exhibitor, and I may add the demands of the public, have so much advanced of late years. The standard of excellence is so much higher than it used to be; the size to which Roses have attained without destroying their symmetry

is so remarkable, that we must, however difficult it may be, dismiss from our memory the seasons that have past, and only judge by the present high standard. I am no *temporis laudator acti*. I believe that stands of Roses which fifteen years ago excited applause and wonder would look miserable alongside of winning stands of the present day; and hence it is most difficult now, so used have exhibitors and the public become to the very finest exhibits, that it is very difficult to bring forward anything which shall come out prominently above all others. There is a more level style of exhibiting, but the level is higher.

It will thus be seen that I am fully alive to the difficulties which beset the task which I have before me, and that my opinion is one not hastily given. That opinion is most decidedly that it has been a good Rose season—the best, in fact, that we have had for some years, but briefer than usual owing to the very dry weather, which, although unfavourable to the exhibitor, was on the other hand favourable to the managers of Rose shows. I have attended my usual number, have heard about a good many others, and with the exception of some rain at Wirral I am not aware of one where fine weather did not encourage the secretaries and committees of shows. I do not recollect any season in which there was so total an absence of aphides, or when the Rose maggot was less troublesome. I fancy I see some holding up their hands in wonder at such a barefaced statement, notably my good friend Mr. Williams of Alderminster, who seems to have been specially favoured by them, but none the less do I maintain this opinion. In my own garden from beginning to end, on the walls or in the open, I hardly saw one. I have visited many gardens and have conversed with many growers, and that what I saw and heard fully confirmed this opinion. One would have thought the long-continued dry weather would have been favourable to their development, but some cause or other seems to have militated against them, and indeed with us all insect plagues have to a great extent been absent. The dry weather, too, was up to the middle of July favourable for the light Roses. Such flowers as Captain Christy, Madame Lacharme, and Mons. Noman had a good time of it and were shown in admirable condition, but in some places and soils it was too hot for the higher-coloured flowers; but it is a curious illustration of the uncertainty that clings to Rose-growing, that while last year a good bloom of Marie Baumann was rarely seen and Alfred Colomb was everywhere good, the case has been reversed this year. Marie Baumann has been shown generally, and Alfred Colomb rarely, well. Why this should be so in Roses so nearly alike it is very hard to say; indeed this peculiarity of one Rose coming out prominently in some particular season is one of those problems no “fellar can understand.” I do not know that this year any one variety has thus stood out prominently; indeed in the earlier part of the season there was often much difficulty in saying what Rose should claim the merit of being best in the show, but it is very difficult to find flowers that will beat A. K. Williams or Marie Baumann.

There has been no diminution either in the number of Rose shows or in the vigour with which they have been carried out. The National Rose Society has again had a most successful season, their shows at South Kensington and at Manchester having been very successful—that at South Kensington, both in the extent of the exhibition and the quality of the flowers, have been, in my opinion, superior to any of its predecessors. But here again the extreme hot weather of the early days of July told much against the smaller exhibitors, and the “fallings out” were much larger than usual, and had all who entered been able to come to the starting post I think it would have taxed even Mr. Barron's skilled hand to have given them a fair start. At Manchester the same held good. Many well-known exhibitors were absent, owing simply to the fact that the heat had driven their flowers out of bloom. But as showing how uncertain a thing Rose-showing is, Mr. Whitwell of Darlington, who has always

shown so well there, was not in bloom; and, indeed, when I was in his garden previous to the Darlington Show on July 25th, his Roses were not nearly in full bloom. How trying the weather then was may be evidenced in the fact that Messrs. Paul & Son, B. R. Cant, Prince, the Rev. J. W. Pemberton, and other distinguished growers, were not able to put in an appearance, and as telegram after telegram arrived announcing their failure the courage of a less experienced manager than Mr. Whitwell might have "oozed out at his fingers' ends." But he was not disheartened, and the northern men boldly sustained the reputation of the Show. The earlier shows, on the other hand, exhibited a decided advance—Canterbury, Reigate, Farningham, and Sutton all showing a large increase. One other very satisfactory fact has to be recorded—viz., that the number of inferior blooms exhibited at all the shows and slovenly ways of setting up have greatly diminished. The competition becomes more severe, and growers are put upon their mettle. The National Rose Society may well be proud of the impetus it has given to Rose-growing. Nor has it confined itself to the exhibition flowers only; garden Roses have been encouraged, and many a long-forgotten favourite has been inquired after. Questions of varied character are brought before it, and its decision is regarded as final in all matters connected with the Rose. One or two questions will have to be brought before it when the Committee meets again.

I do not think that there has been any such startling results of exhibiting as I was enabled to chronicle last year. Mr. Pemberton secured the challenge trophy, and exhibited, as he always does, well; but the weather was too much for even him, and he could not continue from the beginning to the end of the season, as he did in 1884. Mr. Slaughter again resumed the position he occupied in 1883, and exhibited in fine style. Mr. Girdlestone is evidently coming to the front, and is showing what can be done even in the Bagshot sand by an enthusiastic grower. In the north the Messrs. Harkness have developed into first-rate exhibitors, and their exhibits at Darlington and Newcastle were of a very superior order. It is pleasing to record the uprising of new exhibitors, for older ones drop off, and we want to have their places supplied.

Again have Tea Roses been shown in increasing numbers and in great beauty; and here let me say how heartily welcome was the sight of Mr. George Prince, after his long and most severe illness, at the South Kensington Show; still, indeed, showing signs of its severity, but giving us hope that he will one day resume his old place amongst us. The impetus given to Tea Rose-growing has been in great measure due to him, and he must rejoice to think how many apt pupils he has had. On this occasion we cannot pass by the remarkable success of Mr. E. Claxton of Liverpool, who, with a small number of trees, has been enabled to achieve a great success. One Rose which he has specially patronised, Madame Cusin, has a great future before it, owing mainly to the excellent manner in which he has shown it.

With regard to new Roses, there is very little to record. Mr. Henry Bennett has succeeded in raising a new Rose—Mrs. John Laing, which, if I mistake not, will be a much greater favourite than Her Majesty, and he is evidently reaping the results now of his careful hybridising. That wonderfully puffed Rose, Gloire Lyonnaise, which was described as a yellow Perpetual, has proved an egregious take-in. It is a pretty Rose of the Capitaine Christy type, but yellow? Well, you may perhaps discover at the base of the petals the very slightest tinge of sulphur yellow. It may be, as was said to me by a thoroughly good rosarian, that it is the forerunner of a new race, and that that is its claim to merit. Perhaps so; but the same was said of La France, of the same raiser, but nothing came of it. It remains, indeed, one of the grandest Roses for the exhibitor and the garden that we have, but it has produced no progeny. Merveille de Lyon has proved, I fear, a disappointing Rose. Nothing can exceed its purity when caught in perfection; but, alas, that it is too seldom! In every

stand that I have seen of it this year there was always a large number which showed the eye. A new Tea Rose, Madame de Watteville, is likely to become a general favourite. It is white, slightly shaded and edged with salmon, and is very attractive. The Hon. Edith Gifford has fully established its claim to be one of the very best of its class. Ulrich Brunner, though not a new Rose, has come out marvellously this year; and, indeed, if any Rose may claim to give a title to the year, one may say it was an Ulrich Brunner year. I have not seen Messrs. Paul & Son's Madame Norman Neruda, so can say nothing about it, but I hear a very high character of it. It will thus be seen that our catalogues are not likely to be much burdened by new Roses. There may still be some unknown to fame, but they have as yet bloomed in the desert.

I cannot conclude this rapid survey of the year without a word of thanks to all with whom I have been associated during the past season. I have received unvarying kindness, and have been further strengthened in the conclusion I came to long ago—that Rose-growers are a "good set of fellows," and to me it has been a cause of much thankfulness that I have been enabled to fulfil every engagement that I made, and when one is verging on to being a septuagenarian can I be thankful enough?—D., Deal.

NOTES ON FRUIT AND FRUIT TREES.

THE lovely tintings of purple, crimson, and gold now beginning to attract the eye on the ripening and clustering fruits of Apple, Pear, and Plum, forcibly remind us of the rapidly declining days of a charming summer. Although the abundant blossom which clothed the trees in early spring augured well for a good general crop of fruit in 1885, our expectations were not fully realised, but we have not much reason to be dissatisfied. It is true the Apple crop is not quite so bountiful as it was a couple of years ago, and this was no doubt owing to the late spring frosts, which occurred when the latter were in full blossom. In some districts, however, notably the southern and western counties, the crop is above the average, there being only a few isolated instances of failure known. Many of the orchards in the western counties had their trees badly infested with blight, and this, coupled with the excessive drought, has caused a great quantity of the fruit to fall prematurely, and will, no doubt, prevent the remainder of the crop from attaining its normal size. In some of the districts in Kent where fruit-growing is extensively carried on, we recently saw, in the course of a drive, the majority of the Apple trees bending under the weight of its crop.

Our American cousins are looking forward to having a bountiful harvest, and round the environs of Homburg in Germany we are told there is the heaviest crop that has been borne for years. Most of the Apple trees about Homburg are planted in the hedgerows by the roadside. It is a great pity that this plan is so seldom adopted in England, where so many hundreds of miles of favourable sites exist by the sides of our main roads. The planting of railway embankments with fruit trees has been suggested times out of number, but, before we attempt this, let our hedgerows by the roadsides be made both attractive, useful, and a source of profit. The total acreage devoted to Apple culture in Great Britain, however bountiful the crop, cannot supply the demand, hence the many thousands of barrels which are imported annually into this country. Now were Apple trees planted as we suggest, the farmer would possess a fruitful source of income, as well as the consumer the better qualities of home-grown fruit at a cheaper rate. Farmers are, however, beginning to find that fruit-growing is a profitable business as regards bush fruits and Strawberries, and the day is not far distant when they will become alive to the importance of planting Apple trees in the hedgerows.

Of Pears there is a grand crop all through the country, but the fruit will, in consequence of the drought, be far below the average in size. It will, however, be better ripened and well coloured. These remarks refer principally to standards and pyramids, but in the case of cordon-trained trees well looked after in watering and so on, the fruit will be very fine. We are more impressed than ever with the value of cordon-trained trees for walls; the trees are more certain of a crop, and the quality of the fruit superior to those grown in any other form. Out of a collection of some hundreds of cordons we have to record one failure this season, and that is in respect of Pitmaston Duchess, which has not borne a single fruit. It is planted near the

Duchesse d'Angoulême in the same soil and situation, and the latter is bearing a fine crop. It is somewhat curious how erratic the former is in regard to fruiting in certain districts. Mr. Luckhurst, we believe, found it very difficult to manage at Oldlands, and yet all other varieties succeeded admirably there. It was at the latter's wish that we tried it, but after three years' experience we are not very favourably impressed with it. It is undoubtedly a grand Pear where it can be grown successfully. A friend from Liverpool told us the other day that it succeeds well in that neighbourhood. A northern latitude may perhaps be more favourable to it than down south. Durondeau, Brockworth Park, Beurré Bachelier, Gansel's Bergamot, Thompson's, Emile d'Heyst, Olivier des Serres, Madame Millet, are a few of the heavily cropped cordons. When we write heavily cropped, we do not mean that the trees are overcropped, as every tree, according to its variety, had its fruit thinned in its infantine stage. A new Pear, Directeur Alphand, sent out by Messrs. Veitch a year or so ago, is fruiting, but the tree is not a vigorous grower.

Our pyramids are all carrying grand crops. These trees are fine well-trained examples, but had for years very meagre crops of fruit. In the spring time the trees would be a mass of blossom, but no fruit would set, in spite of an elaborate system of protecting the blossom from frost by means of a framework of wood and tiffany. The trees were a perfect thicket of wood and fruit buds, the latter far too numerous in fact. A careful thinning out of the branches was done the first year; the second, thinning out the fruit spurs, with judicious disbudding in summer and root-pruning in autumn; and the third and present season good crops of fruit. Although we rubbed off a vast number of the fruit buds while dormant, yet so numerous were they when in blossom that we decided to still further reduce their number. As the greater part of our pyramid Pears are planted two of a sort, we thought it would be interesting to try the effect of thinning the blossoms, and the young fruit afterwards on one of a sort only, leaving the others to Nature. The crop is decidedly more even, and the fruit in greater size and quantity where the thinning had been practised than on the unthinned trees.

It was a tedious task to thin out so many Pears in such a small state, but we are convinced that it more than paid for our trouble. We give great attention to the thinning of our Grapes and Peaches, and why not of the choice Pears, Apples, Plums, and Cherries? The thinning requires a certain amount of judgment, and must be performed as soon as the young fruit has set, and it can be seen which of the young is likely to take the lead, and not when the fruit has attained the size of a walnut. By this means an even and handsome crop of fruit can be secured, whilst if left unthinned the chances are, that although there might have been the early promise of a good crop, fully three-fourths would, in a dry season like the present, have dropped prematurely, or have been considerably under the average in size. An espalier-trained tree of Winter Nelis set a heavy crop. We thinned the fruit on one-half of the tree and left the other untouched. The thinned fruits are much larger and better shaped, as well as in greater quantity, whilst the other half has lost two thirds of its crop.

Such is the result of our experience of the timely thinning of the young fruit, and although it would not be practicable in the case of large trees, yet in the case of pyramids, espalier, and wall-trained trees, we are fully convinced that this simple operation, judiciously performed, will effect more good towards keeping trees in a healthy bearing condition than any amount of the severe winter pruning to which trees are often subjected.

Sufficient importance is not always attached to the value of summer pruning. We do not mean the pernicious system of allowing pyramid and espalier-trained trees to develop a large quantity of growth, and then suddenly remove it in a wholesale manner in July and August, but the timely and judicious disbudding extended over nearly the whole period of growth. Trees that are subjected to the first-named process are the reverse of fruitful. We have seen trees a perfect thicket of wood, the "spurs" left at the time of the wholesale pruning being only capable of producing a crop of gross and useless shoots the next year. Too often the situation, the soil, or the variety is condemned, when the real cause is too apparent in the mismanagement of the trees. The intelligent gardener has long been aware of these facts, and carries them out in practice, but there are still numbers who fail to see, or neglect to make use of, the benefits of timely and judicious disbudding.

Of Plums and Damsons there is a heavy crop throughout the country. Damsons are a very uncertain crop in some localities. The finest crops we have ever seen are growing on trees on the limestone formation in Worcestershire, and this year after year. This fact induces us to come to the conclusion that the presence

of lime in the soil is an important factor in the successful culture of Damsons. Farmers and cottagers in the west of England find the latter a paying crop, as in addition to supplying the various markets in the kingdom, a vast quantity is purchased for dyeing purposes. We are not quite so sure whether the orthodox plan of nailing in closely the shoots of the Plums in summer and winter is a sound practice. On a west wall we have two very old trees of Green Gage and Victoria Plums, which owing to many years of neglect had ceased to bear, and indeed appeared to all purposes only fit for "grubbing" up and consigning to the fire heap and replacing with young trees. These were allowed to make what growth they could last summer, which was not very extensive, without disbudding, &c. We were too busy with other matters in the autumn to "grub" them up, and the time went on until March, when on examining the shoots which were protruding from the main branches, we found them well furnished with fruit buds. These in due time developed into flower, and finally into fruit. The foliage sheltered the young fruit, and now the old trees have a marvellous crop from the tip to the base of the shoots. The non-nailing of the shoots in summer and winter had evidently given them a better chance of becoming more thoroughly ripened than if they had been nailed in and crowded with foliage. We shall therefore give our old friends another chance, and see what can be done next season. The Peach crop out of doors has not been so good this season, although the wood had such an excellent chance last year of getting well ripened. Just at the time they were in flower cold easterly winds prevailed, with a few sharp frosts, and this in our own neighbourhood was the primary cause of the failure. The trees are promising well for next year.

Apricots have been a fair crop, but many trees have suffered from that mysterious phenomena, the sudden dying of the branches. In our own case a fine young tree of Moor Park lost two-thirds of its branches. Cherries have borne abundantly. Büttner's Black Heart, Bigarreau Napoleon, and May Duke, cordon-trained, have borne fine fruits. Last spring we planted a new north wall upwards of a hundred yards long with some splendid maiden cordons of Archduke, Governor Wood, Florence Bigarreau, and the old Bigarreau, Black Tartarian, and other Cherries, which are making fine trees. On the same wall are growing similarly fine cordon Kirke's, Jefferson, Coe's Golden Drop, McLaughlin's Gage, and Angelina Burdett Plums. Many will, perhaps, be of opinion that these varieties will not succeed on a north aspect. Of course we do not expect an early crop, but we have good hopes of having good fruit of the excellent varieties above referred to coming in for use when those on warmer aspects are gone. At any rate we are giving the plan a good trial.

Bush fruit has been very good indeed. Gooseberry trees have not as yet suffered from the depredations of the caterpillar of the Gooseberry moth. Our latest fruit to gather was the sweet Champagne class of Gooseberries. A good variety of very much the same type is the Ironmonger—sweet and dark-skinned. Raby Castle and the old White Dutch Currants are still supplying us with fine fruit from a low north wall. Raspberries were very abundant for a time, but the continued drought checked the supply some time since. Out of several varieties we have found Carter's Prolific the best. We make it a point to cut away the old fruiting canes as soon as they have ceased to bear, to give the young canes the benefit of the light.

Strawberries have been very fine—the Vicomtesse Hericart de Thury being our earliest, and Bicton Pine and Loxford Hall our latest crops. The Hautbois have fruited better this year, the variety known as the Royal being the most prolific. Of the red and white Alpines we have had an incessant supply since the beginning of June. We have the runnerless type, the red and white Gallions of the Belgians, and Quatre Saisons, a large red type of Alpines, but these do not supersede the old forms from which we hope to gather daily until November. These we grow between the fruit trees and on sloping banks where little else would grow. Finally, a word as to the value of glass copings for protecting fruit trees in spring. We have tried it for three seasons, and find it of the utmost value both as a protector and in hastening the ripening of fruit of Pears, Apricots, Plums, and Cherries, and very considerably improving their flavour. A simple and inexpensive glass coping, with moveable panes of glass, will soon pay for itself by the protection it affords to the fruit trees when in blossom, and the greater certainty of a crop in adverse weather.—A KENTISH GARDENER.

VERBENA CULTURE.

As this is one of the most beautiful of all bedding plants, and perhaps one of the oldest, a few hints on its culture may possibly be of service to

the inexperienced. Cuttings should have been inserted a fortnight ago for those who require a large number of plants for bedding; but still, if a slight hotbed is at hand with a temperature of 60° they will strike readily. Choose shoots that spring from the base of the plants. The best plan to make sure of some good autumn cuttings is to pot a few of the surplus plants after the bedding-out is finished into 48-size pots, keeping them pinched to within three weeks of the time that cuttings are required, then placing them in a cool frame and keeping it rather close, so that the shoots will be tender. Three cuttings may be inserted in a small 60-pot, using a compost of equal proportions of loam and leaf mould with a free admixture of sand. Care should be taken not to let the cuttings wither before they are inserted, or they may fail to strike. They should not be exposed to the sun till they are well rooted. Those who have not the convenience to strike them in heat may succeed with a cool frame kept quite close for a few days, frequently sprinkling the cuttings.

As soon as the plants are ready for potting they should be placed in 32-size pots without parting any of them, using a compost of three parts good loam and one part decayed hotbed manure and leaf mould. They must then be placed in a frame facing the south, as well-ripened sturdy wood is the object, this giving a good supply of cuttings in the spring. If allowed to become dry the aphids and mildew will soon appear. A fumigating with tobacco paper will destroy the aphids, and a sprinkling of sulphur will destroy the mildew. On the approach of frost the plants should be removed into a cool house, keeping them close to the glass and free from decayed leaves, as they are liable to damp off. About the middle of January they may be placed on a shelf in an intermediate house. When cuttings are ready they can be inserted in pots or shallow pans of sandy soil. They will strike readily in a hotbed with top heat ranging between 60° and 70°.

No time should be lost in propagating as the cuttings advance, for if they become hard they take six or seven days longer to strike. When the plants are shifted they should be placed in the shade for a week, for if the sun shines on the pots it will scorch the roots and some of the plants will die.

At the commencement of April the propagating should be finished for the production of good plants. When these are properly hardened they may be planted 4 inches apart in good soil 1 foot deep, and pressed firmly in frames facing south, keeping the frames close for about ten days, shading the plants when required until established, never allowing the soil to become dry, and pinching the shoots occasionally.

I can recommend the following varieties as good bedders:—Purple King, Defiance, Mrs. Fisher, Boule de Neige, Pre-eminent, Lustrous, Mrs. Leach, Surpasse Auricula, Zulu, August Renz, Lovely Blue, Eclipse, Kate Stevens, Miss Edwards, Favourite, Géant des Batailles, Madame Anna, Hampton Court Crimson, F. Delaux, Mrs. Halford, Ariosto Improved, Lady Londesborough, Lady Cowley, Merry Maid, White Perfection, Madame H. S'enger, Flambeau, and Earl of Beaconsfield.—C. H. STEPHENS.

CULTIVATION OF THE PEA.

In giving a few remarks under this heading I do not intend to give a long list of the various sorts of Peas, but simply as to their cultivation in general as practised by myself. In some localities sticks or stakes can be obtained on the estate, at another every bundle must be purchased, and as I have had both of these to contend with, I will mention a few varieties to suit either. Where sticks are difficult to be obtained I would say, Grow American Wonder, Chelsea Gem, and Little Gem for the earliest crop. For the second I would mention Robert Fenn, about 2½ feet, and for a later crop Omega, 2½ feet. Everyone wishing to grow Peas would be able to get sticks to support these. Then, again, if I had plenty of sticks at command for the first crop I should sow Chelsea Gem and American Wonder, as 2 feet apart from row to row is sufficient for them, and the way I manage is to sow thickly in boxes in February, and place them in a vinery that is started at about that time, and when sufficiently advanced harden them, and eventually plant them on a well-prepared south border, and protect them with fern, or the lower branches of Beech trees to which the leaves still adhere. As these varieties can be grown so close together I think nothing is lost.

Then, again, if sticks were plentiful I should certainly sow the taller-growing sorts; then for the first, after one or both of those mentioned before, I would have William I, 3 feet; Laxton's Alpha, 4 feet; and Dr. Hogg, 4 feet. For second, Champion of England, 5 feet; Dr. Maclean, 3½ feet; Gladiator, 3 feet; and Telephone, which is 6 feet; and for the last crop I find nothing better than Ne Plus Ultra and Sturdy, their heights being 6 feet and 3 feet respectively. It is almost useless in this unsettled climate to sow the late varieties after the end of June—I mean as a rule—but it is possible that different localities might produce different results in this respect.

Many gardeners sow in November, but experience teaches me nothing is gained by so doing. As I before wrote, I prefer the system of sowing in heat and transplanting. For the third sowing I prepare trenches as for Celery, but not so deep, and put in manure in the same way, fork it well up, sow the seeds, and cover them with about 2 inches of the soil taken out of the

trench. It is a good plan before covering the seeds to give them a coating of soot and lime, as this prevents insects attacking the seeds. Another very good plan is to damp the seeds and dust them with red lead and another to sprinkle petroleum over them. The above remedies are to prevent underground attacks, but as soon as the seeds are above ground the sparrows attack them; and the only thing I have found effectual is to put Pea protectors or nets over them and again this is necessary when they begin to pod. If this is not attended to the birds will surely spoil the crop.—ROBERT D. LONG.

AMONGST THE NOVELTIES.

(Continued from page 190.)

PEAS.—Abundance (Bliss) I received from New York too late to test its earliness, but I can speak well as to its quality and prolific bearing. It is dwarf and very branching. Culverwell's Triumph I found good at all points, and I strongly recommend it. It grows from 2½ feet to 3 feet, bears abundantly handsome pods containing peas of very good quality. Victor is a remarkably sweet Pea—the sweetest I have tasted this season. The pods are not very large, but the peas are fine and packed so tightly that they are rather hard to shell. The foliage is very dark. Rural New Yorker is a very fair early Pea and bears well. Electric Light is a good Pea. Culverwell's Paragon I have again found invaluable. With many varieties I have found gaps in the pods, but I never find a single Pea wanting with Paragon, and no better Pea can be desired for any purpose. Even when they are old the peas boil sweet. Evolution is a very handsome-podded Pea, but unfortunately mine had the blight so bad that I could not judge it fairly. I hope to do better with it next year. Sturdy was completely destroyed by blight. Of Duke of Albany I sowed four rows about 4 yards long on the same day. I think very highly indeed of this Pea. It has an exceedingly handsome pod containing from nine to eleven fine peas of very good quality. It bears very abundantly and continues long in use. Although my four rows were grown on nothing but gravel enriched with plenty of muck, I managed to take a second at a show one week with it, a second at another show the next week, and a third the week after that. I could not have done it with any other Pea I grow, although I have about twenty varieties. Daniels' Early Longpod for market I do not care for. It is a great bearer, but grows too tall for field work and is not of good quality enough for the garden.

POTATOES.—Daniels' Norfolk Hero is a grand Potato. Fine tubers of splendid quality, being very white, floury, and of good flavour. To anyone who has a hot soil like mine I strongly recommend this Potato. It stands erect and grows strong when all other varieties but Clarke's Maincrop are looking weak and dwindly. Clarke's Maincrop is a very similar Potato, is very good, and is a capital variety for a hot gravelly soil. Beauty of Eydon is a very good Potato, but could not stand the drought well. I hope to try it more successfully next year with Purple and Gold, which also felt the drought.

General Gordon is a handsome variety. The Dean, I consider, an improvement on Vicar of Laleham, and am rather taken with it. It is a handsome and good Potato. These are the only new varieties I tried with the exception of one of my own, and it goes without saying that I consider my own chick better than any other. Of older varieties, I must say a word for Reading Russet, Matchless (or Holborn Favourite), and Snowdrop. They are three good Potatoes in every way, and whoever tries them will not be disappointed.

I may add that the White Plume Celery looks well, although I am rather behind with it. I should judge that it will be a great acquisition.

I have now given my experiences in testing the novelties, and hope a better man will continue the subject for our guidance next year.—H. S. EASTY.

SINGLETON ABBEY.

SINGLETON, the residence of Mrs. J. H. Vivian, is situated on a finely wooded eminence overlooking Swansea Bay towards the south, and is some two miles to the west of the town. The house, which is built in the Elizabethan style, is of moderate dimensions. It is closely surrounded with flower gardens, roseries, archery grounds, and noble trees and shrubs of luxuriant growth. To give an idea of the climate, it may be stated that Camellias planted outside grow to the size of large Portugal Laurels, and produce thousands of flowers in the spring and early summer months. The south side of the house is covered with a choice collection of climbers, amongst which are large plants of the white and yellow Banksian Roses attaining a height of 40 feet. These were clothed with hundreds of blooms at the time of my visit. Ceanothus puniceus and other plants were also flowering in great profusion. Attached to the house on the west side is a span-roofed conservatory with Tree Ferns planted out in the centre, and large Camellias and other plants in pots placed round the sides. The roof was draped with different varieties of climbers hanging down in long festoons.

Singleton is famed for its fine collection of arboreal and hybrid Rhododendrons, and for its fine specimens of rare Coniferæ and other trees and shrubs. There are few places in this country where one sees the tenderer varieties of Rhododendrons growing so freely as they do here, except perhaps in a few favoured localities in Cornwall. Though the climate is mild the soil in many places is poor, and much of the success attending the growth of the trees and shrubs is due to the care and attention of Mr. Harris, Mrs. Vivian's gardener, who has spared no trouble in draining the ground and improving the soil where the finer and more delicate kinds are planted. Towering up from amongst the Rhododendrons in the American ground are giant Oaks and Elms and large trees of *Araucaria Cunninghamii*, *Wellingtonia gigantea*, *Taxodium sempervirens*, *Cryptomeria japonica*, and many others from 80 to 90 feet high, affording shade and shelter to some of the finest varieties of Rhododendrons in cultivation. Many of these have attained a height of 30 feet, and have in themselves a true arboreal appearance. I was fortunate in seeing some of the best of them in flower at the time of my visit, and also in having Mr. Harris for a guide, who knows the history of almost every plant on the place, the date of planting, and when last shifted. He has raised many seedlings from the best species of the Himalayan section during the time he has been at Singleton, which in most cases keep true to character.

wide and 9 feet high, running east and west, with a division in the centre. Some of the trees in this house are planted near the centre of the inside border and have a clean stem of 4 feet before reaching the trellis. They are trained on both sides of the house, and it is surprising to see the difference there is in the time of the fruit ripening on the same tree when a portion is trained on the south side of the roof and the other on the north side. The portion trained on the south side ripens fully two weeks earlier than that on the north side. This system would be a great advantage to amateurs and others where the glass houses are limited in prolonging the succession from the same tree. The south side of the first division is planted with Hale's Early and Royal George, and the north side with Elruge Nectarine. The second division is planted with Early Louise and Bellegarde Peaches. Though some of the trees are old and not so good as those on the wall, the most of them were swelling off good crops in both divisions. In passing I might mention a vagary of a Royal George Peach tree in this house. One branch of it is conspicuous for its precocity. It is growing precisely under the same conditions as the rest of the tree, and yet the fruit on it ripens about two weeks earlier than any other portion of the tree. It was carrying three fine highly coloured fruits, which were nearly ripe when I saw it, while the remainder of the crop had scarcely done stoning. Mr. Harris has been observing the pre-

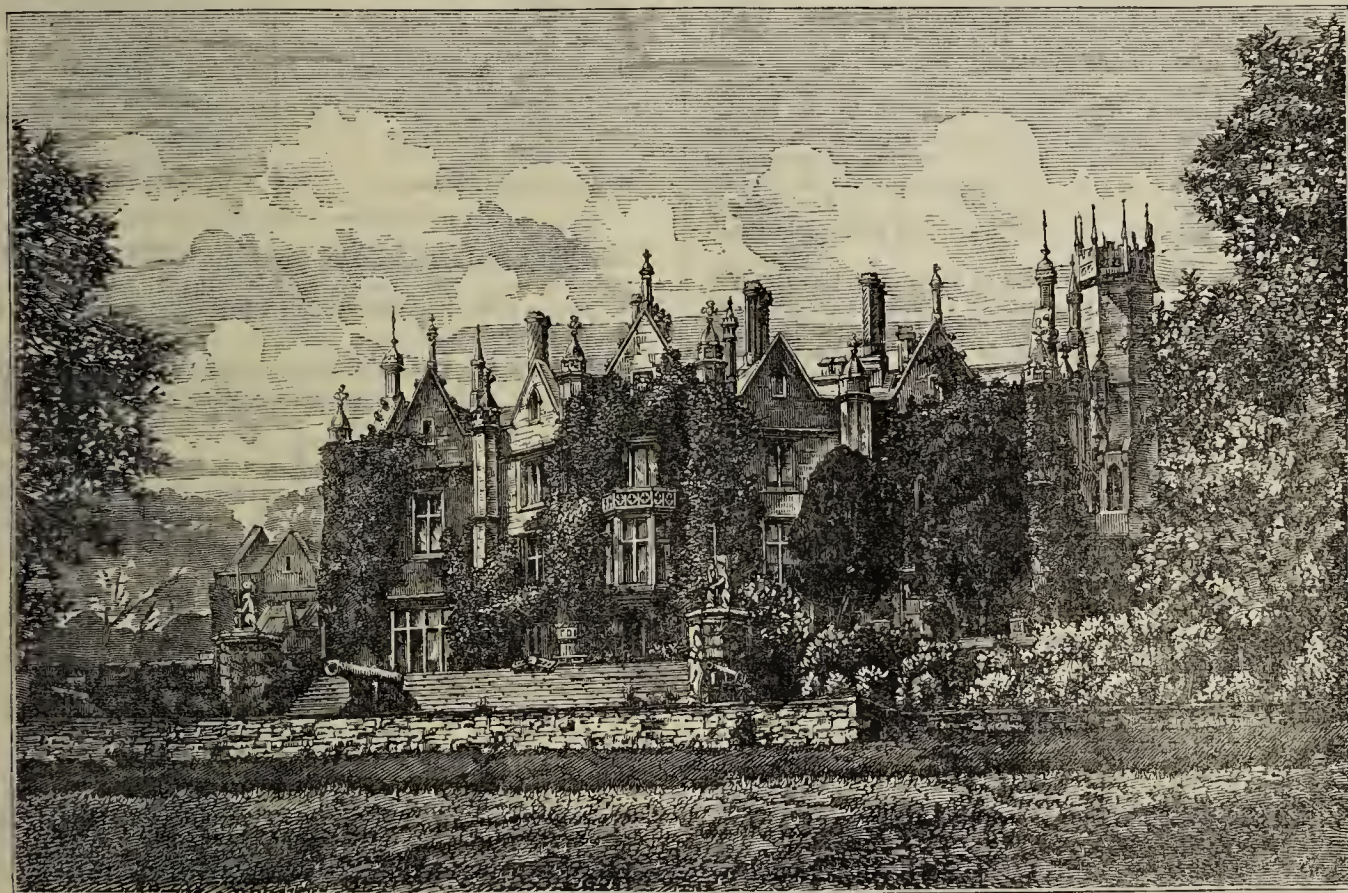


Fig. 35.—SINGLETON ABBEY.

Most of the Rhododendrons and many of the finer kinds of Coniferæ are labelled in large print, so that the visitor interested in either has no difficulty whatever in obtaining their names.

The kitchen garden and forcing and plant houses are situated at the north side of the park, and at a convenient distance from the house. The garden is enclosed with high walls, which are covered with well-trained trees. It would be difficult to find a better lot of Peach trees in the country than those at Singleton. The Peach wall forms part of a circle. It is 15 feet high and 90 yards long. The trees are planted at the distance of 20 feet apart, and the wall is regularly covered from top to bottom with healthy young trees in the best bearing condition possible. They bear heavy crops annually, which in ordinary seasons ripen well. There is a good collection of Peaches, comprising both early and late varieties. Amongst these are Walburton Admirable, Alexander, Salwey, Sea Eagle, Early Louise, Early Beatrice—the earliest of all—Hale's Early, and Dr. Hogg. The latter is a second early and a great favourite at Singleton. To show how well Peaches do here I may mention that a three-year-old tree of Sea Eagle produced no less than eighty-three fine fruits, a dish of which took the first prize at the Healthier Exhibition last year in a class where there was no fewer than thirty competitors. The Peach border was all made by Mr. Harris, and I do not hesitate to say that I never saw healthier or better trained trees anywhere, or trees carrying better crops throughout.

After leaving the Peach wall I was shown through the houses, which are mostly old and have not the same appliances as modern erections. Notwithstanding this Mr. Harris grows both fruit and plants successfully. The first we entered was a half-span Peach-house 80 feet long by 18 feet

cocity of this branch for the last few years and cannot account for it. He is, however, of opinion that its early quality is fixed, and he purposes propagating sufficient of it to plant one-half of the house.

The next house contained a good collection of greenhouse plants, amongst which were several sweet-scented Camellias, a quality rarely found in this plant. Mr. Harris is working up a stock of them, as they are highly esteemed by his employer, and no doubt when they become better known they will be general favourites. The collection of Indian Azaleas and Rhododendrons is made up of the best varieties. Azalea Fielder's White is the favourite for early forcing. It is had in flower from Christmas on till the other varieties come into bloom of their own accord. Pauline Mardener is the best coloured variety for forcing, and is very extensively grown along with Fielder's White. A plant of Rhododendron Edgworthii in this house produced no less than 100 trusses of its pure white cup-shaped flowers in April. A fine plant of *R. Sesterianum*, a companion to Edgworthii, flowers profusely. Part of the roof is covered with a large plant of *Maréchal Neil* Rose, which keeps up a supply of blooms for cutting, and it does not interfere much with the plants growing beneath.

The next house is filled with a healthy collection of Orchids, amongst which were some fine specimens of *Aerides odoratum*, *A. virens* Dayanum, and a particularly fine plant of *A. Fieldingi*, which had a spike more than 2 feet in length. A variety of *Vanda suavis* had six spikes and nine flowers on each, and a plant of *V. gigantea* bears three spikes annually on the main shoot, with from seventeen to eighteen flowers on each. There were also some fine plants of *Saccolabium præmorsum*, *S. guttatum*, and *S. Blumei* Dayi. Besides these, there were choice assortments

of Cypripediums, Dendrobiums, Odontoglossums, Oncidiums, Lælias, Cattleyas, &c. In passing to the succession Pine stoves I could not help admiring a large bush of Camellia Donkelaari growing outside close to the door. It produces hundreds of flowers during the season. The succession Pine stove is a mixed house. The bed in the centre was filled with a healthy clean stock of Ripley Queens. The front and back stages were occupied with large batches of Calanthes, Gardenias, Pancratium fragrans, and other plants. Melons and Cucumbers were growing in pots, and the Vines trained thinly at a proper distance from the roof. Both Melons and Cucumbers were bearing good crops, and seemed to luxuriate in the same atmospheric treatment. Part of the roof at one end was covered with a large Stephanotis, which was flowering freely.

Mr. Harris is a successful Pine-grower, and has won many first prizes at the London and other large shows in classes where there is strong competition. The plants in the fruiting stove were in the best of health, dwarf and stocky, and all of them swelling off large well-balanced fruits, which any grower might be proud of. Melons and Figs in pots are grown in this house too, and fruit well. The variety of Melon grown generally here is Highcross Hybrid—a dark green-flesh of great depth and of excellent flavour, and the Fig is the Singleton variety. The latter is a perpetual bearer. It is small, but finely flavoured, and much appreciated by the family. The plants are taken outside for a few months to rest, and then brought inside again. Part of this house was covered with Stephanotis and other climbers.

Next to this is a cool Orchid pit containing some good plants of Epidendrum vitellinum majus, Odontoglossum Alexandræ, O. Pescatorei, O. Rossii majus, and many others in fine condition.

Vines, like Pine Apples, are extensively grown here. The early house is filled with Black Hamburgs. The Vines are planted in the outside border, and in Mr. Harris's experience they do much better when planted outside than they do in inside borders. They were bearing a good crop of medium-sized bunches, which were ripe and highly coloured. Shelves are fitted up in all the vineries for forcing Strawberries. A great quantity of Strawberries are forced annually, the varieties being principally President, Sir C. Napier, and Keens' Seedling.

The second vinery is planted with Muscat of Alexandria, Cannon Hall Muscat, and Alnwick Seedling, and the third is filled with Black Hamburg. The latter was partly occupied with Peach trees in pots, which were being grown for trial. They consisted of such varieties as Royal George, Early Beatrice, Stirling Castle, and others. Besides these were a number of Tomatoes growing in 10-inch pots, and a large Brown Turkey Fig tree in a box which completely filled one end of the house.

The fourth vinery is all of Muscats. The Vines were carrying a heavy crop of well-set fruit, which were ready for thinning. Mr. Harris uses no artificial means to set the fruit, and it never fails to set well.

The fifth house is planted with Lady Downe's Seedling. The house is used in the early part of the season for growing Tea Roses, Fuchsias, and other plants before the Vines have made much progress. The Vines in all the houses were clean and healthy, and bearing good crops in different stages of growth.

I have had pleasure in describing many fine places in South Wales and elsewhere, but few of my peregrinations have afforded me more satisfaction than that which led me to Singleton, and afforded me the opportunity of inspecting its interesting collections under the guidance of its genial and intelligent custodian, Mr. Harris.—A. PETTIGREW, *Castle Gardens, Cardiff*.

GRAPE-GROWING AT BATH.

ALLOW me to say that Mr. Taylor's explanation is perfectly satisfactory. I can understand the Vines on the north-east side of the house not ripening well, and having to be cut back in consequence, and I make no comment on the wisdom of erecting a vinery with the aspect on one side; but what prompted me to put the question to Mr. Taylor was the statement of "W. I." that "all the Vines made most satisfactory growth," by which I understood that they grew and ripened well. It appears now that their progress was as unsatisfactory as it could possibly be to an extension trainer.—J. S. W.

MR. SMEE'S ORCHIDS IN AND OUTDOORS.

AS is well known, Mr. Smeë has given a number of his Orchids a somewhat lengthy sojourn in the open air during the past two years. The results have been such as to justify him in subjecting several plants to the same treatment this season, and nearly a thousand are now outside, the majority of them having been out since the middle of June, and will remain for a few weeks longer. The majority are placed on latticework rafts, supported a few inches above the water of the embowered streams that meander through his garden; a few are suspended from trees, and the Dendrobiums, with some Epidendrums, are in the full sun. The majority of the Dendrobiums were not put out till they had made about three-parts of their growth; this has been completed in the open, the pseudo-hulbs having ripened admirably, some of *D. nobile* and *D. Wardianum* showing well for bloom.

Many of the plants have evidently enjoyed the change, all those enumerated below being in the most satisfactory condition. The Odontoglossums are especially healthy, with fine bronzed pseudo-bulbs, extremely vigorous growths, and a few stout flower stems showing. These plants are not large, but it is not easy to imagine any in better condition. It must be remembered, however, that there are few gardens containing positions so peculiarly suitable for these plants as in the Grange Garden at Hackbridge.

The following are a few of the Orchids that have made vigorous growth in the open air:—*Ada aurantiaca*, *Cattleya citrina*, *Colax jugosus*, *Cypripedium insigne*, *Disa grandiflora*, *Epidendrum evectum*, *E. xanthinum*, *Lælia majalis*, *Lycaste Deppei*, *L. plana*, *L. Skinneri*, *Maxillaria grandiflora*, *M. venusta*, *Mesospinidium vulcanicum*, *Odontoglossum Alexandræ*, *O. bictonense*, *O. Cervantesi*, *O. cordatum*, *O. coronarium*, *O. gloriosum*, *O. Halli*, *O. nehulosum*, *O. Oerstedii*, *O. Pescatorei*, *O. pulchellum*, *O. radiatum*, *O. ramosissimum*, *O. roseum* (flowering), *O. Rossi majus*, *O. triumphans*, *Oncidium aurosum*, *O. concolor*, *O. crispum*, *O. Forhesi*, *O. macranthum*, *O. Marshalli*, *O. seriatum*, *O. tigrinum*, *Sophranitis grandiflora*, *Trichosma suavis*, *Vanda cærulea*, this latter producing wonderfully stout roots.

The Orchids under glass are looking extremely well. In one house about a dozen plants of *Vanda Sanderiana* are getting well established, and the *Phalænopses* have improved greatly since they were suspended over a bed carpeted with trailing stove plants. The following are now flowering in the collection:—

<i>Brassavola nodosa</i>	<i>Miltonia Regnellii</i>
<i>Cattleya Gaskelliana</i>	<i>Odontoglossum Alexandræ</i>
<i>labiata</i>	<i>bictonense</i>
<i>Leopoldi</i> (fine spikes)	<i>cordatum</i>
<i>Cælogyne cristata</i>	<i>grande</i>
<i>Lemoniana</i>	<i>hastilabium</i>
<i>pandurata</i>	<i>Pescatorei</i>
<i>speciosa</i>	<i>roseum</i>
<i>Cypripedium Harrisianum</i>	<i>Schleiperianum</i>
<i>Lowi</i>	<i>Oncidium aurosum</i>
<i>Lælia pumila</i>	<i>Batemanii</i>
<i>elegans</i>	<i>crispum</i>
<i>Lycaste Cobbiana</i>	<i>dasytyle</i>
<i>Smeana</i>	<i>flexuosum</i>
<i>Masdevallia chimara</i>	<i>linguiforme</i>
<i>amabilis</i>	<i>Saccolabium guttatum</i>
<i>Davisi</i>	<i>Sobralia macrantha splendens</i>
<i>Harryana</i>	<i>Satyrium aureum</i>
<i>Houtteana</i>	<i>Thunia alba</i>
<i>Normani</i>	<i>Vanda Batemanii</i>
<i>Veitchiana</i>	<i>Warszewiczella Wendlandi</i>
<i>Mesospinidium vulcanicum</i>	

WAKEFIELD CARNATION AND PICOTEE SOCIETY'S SHOW

The following awards were made by the Judges, Messrs. T. Bower, Little Horton Green, Bradford; and H. Ives, Wakefield, with the varieties arranged as represented.

PAN OF TWELVE CARNATIONS, NINE AT LEAST DISSIMILAR.

First, Mr. T. Madock, gardener to T. Ramskill, Esq., Lofthouse Hall.

Mars	Sybil	Lord Napier
Master Fred	J. D. Hextall	Sportsman
Stanley Hudson	Sarah Payne	Admiral Curzon
Mayor of Nottingham	Annihilator	Lord Milton

Second, Mr. George Lumb, Kirkgate, Wakefield.

Seedling	Lord F. Cavendish	Seedling
Lord Milton	Seedling	Seedling
John Hines	Benjamin Ives	Seedling
Harry Ives	Seedling	Seedling

Third, Mr. George Gill, Eastmoor, Wakefield.

Juno	Admiral Curzon	Master Bowen
Sportsman	Lord Milton	Sportsman
Squire Meynell	Edward Adams	Dolly Varden
Admiral Curzon	Dr. Cronin	John Hines

Fourth, Mr. J. Steel, Eastmoor.

Fifth, Mr. W. Wilson, Eastmoor.

PAN OF TWELVE PICOTEEES, NINE AT LEAST DISSIMILAR.

First, Mr. T. Madock.

Her Majesty	Master Norman	Prince of Wales
Lady Holmesdale	Master Nichols	Mrs. Rudd
Clara Penson	Mrs. Rudd	Tinnie
Lady Holmesdale	Ann Lord	Rev. F. D. Horner

Second, Mr. George Lumb.

Lady Holmesdale	Miss Sharpley	Fanny
Mrs. Gibbs	Nymph	Lady Holmesdale
Mrs. A. Chancellor	Dr. Epps	J. B. Bryant
Mrs. Summers	Mrs. Gladstone	Seedling

Third, Mr. George Gill.

Mrs. Dodwell	Mrs. A. Chancellor	Brunette
Mrs. Rudd	J. B. Bryant	Lady Holmesdale
Alice	Thos. Williams	Alice
J. B. Bryant	Master Nichols	Lady Holmesdale.

Fourth, Mr. J. Steel.

PAN OF SIX DISSIMILAR CARNATIONS.

First, Mr. T. Madock.

Master Fred	Sarah Payne	Lord Milton
Crista Galli	J. D. Hextall	Admiral Curzon

Second, Mr. George Gill.

John Hines	Sportsman	Edward Adams
Dr. Cronin	Dr. Symonds	Lord Milton

Third, Mr. W. Robinson, Wrenthorpe, near Wakefield.

Rifleman	John Ball	Clipper
Duke of Grafton	Ascendant	James Merryweather

PAN OF SIX DISSIMILAR PICOTEEES.

First, Mr. T. Madock.

Lady Holmesdale	Clara Penson	John Smith
Brunette	Miss Wood	Ann Lord

Mrs. Gibbons Miss Turner	Second, Mr. W. Robinson.	
	J. B. Bryant	Brunette
Lady Holmesdale Brunette	Third, Mr. George Gill.	
	Zerlina	Alice
	J. B. Bryant	Edith Dombrain

CLASS FLOWERS, EIGHT DEEP.

Scarlet Bizarres.

1, Admiral Curzon ... T. Madock	5, Admiral Curzon ... G. Gill
2, Mars do.	6, George J. Steel
3, Admiral Curzon ... G. Lumb	7, do. J. Hardwick
4, do. do.	8, do. do.

Crimson Bizarres, eight deep.

1, J. D. Hextall T. Madock	5, Lord Milton J. Steel
2, do. do.	6, do. do.
3, Seedling G. Lumb	7, do. G. Gill
4, J. D. Hextall W. Wilson	8, do. do.

Pink and Purple Bizarres, eight deep.

1, Sarah Payne T. Madock	5, James Taylor Geo. Gill
2, Seedling G. Lumb	6, do. W. Wilson
3, J. D. Hextall W. Wilson	7, do. J. Steel
4, Sarah Payne T. Madock	8, do. Geo. Gill

Scarlet Flakes, eight deep.

1, Sportsman T. Madock	5, Seedling Geo. Lumb
2, Clipper do.	6, Wm. Mellor do.
3, Sportsman G. Gill	7, Dan Godfrey W. Robinson
4, Dan Godfrey J. Steel	8, Sportsman G. Gill

Rose Flakes, eight deep.

1, Sybil T. Madock	5, Seedling G. Lumb
2, Jas. Merryweather W. Robinson	6, Rose of Stapleford G. Gill
3, Seedling G. Lumb	7, Geo. Lumb J. Wilcock
4, do. T. Madock	8, Rose of Stapleford G. Gill

Purple Flakes, eight deep.

1, Squire Meynell ... W. Robinson	5, Vicar of Wakefield G. Lumb
2, Sarah Payne T. Madock	6, Squire Meynell ... T. Madock
3, Squire Meynell ... W. Robinson	7, Master Bowen Geo. Gill
4, do. W. Wilson	8, Squire Meynell ... W. Wilson

PICOTEE.

Heavy-edged Red or Scarlet, eight deep.

1, Miss Turner W. Robinson	5, Picturata G. Gill
2, J. B. Bryant G. Gill	6, Brunette T. Madock
3, John Smith T. Madock	7, J. B. Bryant G. Lumb
4, J. B. Bryant J. Hardwick	8, Mrs. Dodwell W. Wilson

Light-edged Red or Scarlet, eight deep.

1, Thomas Williams Geo. Gill	5, Grosteen W. Robinson
2, do. T. Madock	6, Thos. Williams ... G. Gill
3, do. Geo. Lumb	7, Violet Douglas ... W. Wilson
4, Grosteen W. Robinson	8, Miss Small J. Steel

Heavy-edged Purple, eight deep.

1, Miss Summers G. Lumb	5, Zerlina G. Gill
2, Mrs. A. Chancellor G. Gill	6, Norfolk Beauty ... J. Hardwick
3, Alliance T. Madock	7, do. do.
4, Zerlina W. Wilson	8, Picco J. Wilcock

Light-edged Purple, eight deep.

1, Clara Penson T. Madock	5, Fanny Geo. Lumb
2, Master Nichols ... do.	6, Mary J. Hardwick
3, Ann Lord W. Robinson	7, Fanny Geo. Lumb
4, Master Nichols ... do.	8, Mary Geo. Gill

Heavy-edged Rose or Salmon, eight deep.

1, Lady Holmesdale G. Gill	5, Fanny Helen J. Steel
2, Mrs. Holdsworth... G. Lumb	6, Lady Holmesdale G. Lumb
3, Louisa W. Robinson	7, Mrs. Rudd T. Madock
4, Edith Dombrain... G. Gill	8, Miss Wood J. Wilcock

Light-edged Rose or Salmon, eight deep.

1, Mrs. Allcroft T. Madock	5, Seedling Geo. Lumb
2, Beauty of Plumstead G. Gill	6, Miss Wood T. Madock
3, Miss Wood do.	7, do. W. Wilson
4, Beauty of Plumstead G. Lumb	8, Beauty of Plumstead J. Hardwick

Sels, eight deep.

1, Mars Geo. Lumb	5, Sportsman G. Gill
2, Sportsman G. Gill	6, Seedling J. Steel
3, Seedling Geo. Lumb	7, Dan Godfrey do.
4, Rose of Stapleford J. Hardwick	8, Seedling J. Hardwick

Premier Carnation, Master Fred, T. Madock; Premier Picotee, Lady Holmesdale, T. Madock.—J. WILCOCK, Hon. Sec.

JUDGES AND THEIR WORK.

A CORRESPONDENT calls attention in your last to the way some Melons are treated at shows, and another complains of some very indiscriminate judging at Exeter. Of late I have been taking notice of how judges are

appointed at many shows, and I am not surprised that many of them make mistakes. At our county show some of the men who judge fruit and vegetables have to my certain knowledge never had charge of good fruit houses or a good vegetable garden. Their knowledge of plants and cut flowers may not be disputed, but their judging of fruit and vegetables is all a farce. Not very long ago they gave the first prize in a Black Hamburg Grape class to three bunches of Black Alicante which one exhibitor vowed he would "cheek them with," and he did. There was a class for other Blacks besides Hamburgs, and I verily believe that had there been a good example of the Hamburg amongst these it would have had the first prize.

Many good growers of vegetables have ceased staging at the Show in question. The largest and coarsest Potatoes are almost sure to be placed before those of finest quality of tubers. I suppose the judges think that by "going in" for size alone they are sure to please some—those who have the prizes for instance—but the system is entirely wrong, and is sure to have an injurious influence on all shows where the judging is done in such a manner.

I think it is probably on the score of economy that such men are appointed as judges. Some florists who may be at the show think they are obliging the society by doing the judging for nothing, their knowledge of the subjects on which they adjudicate being a secondary matter. Of late I have known men, who grow nothing but plants, bring their exhibits to shows, and as the officials thought they had no connection with the fruit and vegetables they might as well judge them, and they gladly do it for nothing, hence the glaring mistakes we often find in these sections. "Who are your judges?" I have sometimes asked, and the reply was, "Oh! no one in particular; So-and-so is bringing plants and he will do it," and so the system goes on, and that, too, in connection with many societies which could very well afford to secure the services of qualified men.

At a large show in the west of England the other day I heard a visitor volunteer to judge the fruit, and to my knowledge this youth never had even a subordinate charge of fruit-growing of any kind. He would have got on, too, as the officials knew no better until I protested, not on my own account, but on behalf of exhibitors generally, and this is why I am writing now. It may be economy to work in this fashion, but it certainly is not satisfactory, and the one should be striven for as much as the other. It is all very well to try to make shows pay, but what is saved in this way will soon be lost in the standing of the show, as good growers will not compete where men profess to judge who know little or nothing of the products. I have no doubt many of your readers will have known of similar cases to those I have stated. Exhibitors, managers, and especially in cases where there are practical gardeners on the committee, should see to this matter, as this cheap makeshift system of appointing judges will ultimately tell more than anything against a show.—A KITCHEN GARDENER.



CHARLES TURNER MEMORIAL.—The promoters will hold a meeting in the conservatory of the Royal Horticultural Society at the conclusion of the business of the Floral Committee on Tuesday next at 12.30 P.M. to appoint a sub-committee to manage the details of the "Memorial," and to approve a circular that has been prepared for distribution. Subscriptions to the fund may be forwarded to the Treasurer, H. M. Pollett, Esq., Fernside, Bickley, Kent.

— SCORCHED MUSHROOM BEDS.—We have heard of Mushroom beds that have been frozen hard in the winter yet have produced abundant crops on the return of mild weather in the spring; but not until recently did we hear of them "standing fire." During the late hot weather, Mr. Holmes, the gardener at Sister's House, Clapham Common, in burning some rubbish, found, on his return to the fire, that it had extended to an outdoor Mushroom bed in bearing, burning all the covering, cooking the Mushrooms, and scorching the surface. The bed, as he thought, was ruined, but he has since been gratified to find Mushrooms "springing up in all directions," and the bed is expected to be as productive as others invariably are in the same garden.

— A SIMPLE method of ENTRAPPING WOODLICE is practised by Mr. Holmes, or was, before he caught them all. They infested his beds, and did much damage, baffling all efforts to subdue them in the stereotyped way of poisoned baits and the like. The natural habits of the pests were observed, and congenial haunts provided. These consist simply of two old dirty half-decayed boards placed face to face on and by the sides of the beds, and covered with litter. Several pairs of boards 5 or 6 feet long, 8 or 9 inches wide, were used. In the morning the

space between them was crowded with woodlice, which were taken away as if in a trough, and jerked into the water tank. It was computed that about a "bushel of the beggars" were drowned, and the pest was practically annihilated. New boards are of no use, only old ones considerably decayed forming effective traps.

— NESBITS' VICTORIA TOMATO is admirably grown and much appreciated for dessert in Mr. Major's garden at Cromwell House, Croydon. The plants are grown in pots, no growths being permitted on the main stem except the huge bunches of fruit and the main leaves. The clusters bear forty or fifty crimson Plum-like fruits each, and have a beautiful appearance. The quality of this variety is considered to surpass most others, and it is more esteemed than any for the purpose in question. Hackwood Park Prolific is found the best large variety, and plants in pots are grown 15 feet high with thick stems like Vines, fruits having been gathered from them exceeding a pound in weight. Mr. Wright, the gardener, appears to know the right way to grow Tomatoes.

— HE does not quite agree with remarks that have been published rather derogatory of the merits of PEN-Y-BYD VEGETABLE MARROW, which he finds extremely productive, the fruits of the right size for cooking whole, and are then considered superior in quality to the old White, as usually sliced before cooking.

— IN the same garden the NIGHT-BLOOMING CEREUS has recently been a feature of interest, the scientific attainments and resources of Mr. Major having enabled him to photograph a bloom with the aid of the magnesian light.

— ONE of the brightest of edging plants for flower beds in the Chiswick Gardens of the Royal Horticultural Society is DEAN'S LUSTROUS TROPEOLUM. The plant is of compact growth, having small, bluish green foliage, and is covered with rich crimson scarlet flowers of good form and great substance. It seems to have enjoyed the dry weather, and has been extremely effective all through the season.

— THROUGH the kindness of Mr. C. Orchard, of The Gardens Coombe Leigh, Kingston-on-Thames, we have been favoured with fruit of PYRUS VARIOLOSA, which was grown in the garden of Duncombe Shafto, Esq., of Ham Common. It is a pretty, Pear-shaped fruit, 1 inch in diameter, and of a bright mahogany colour. The stalk is 1 inch long, and it has a large open eye. When cut the flesh is red and tasteless, but it soon bleets, and then it has somewhat of the flavour of the Sorb but much sweeter, and consequently rather sickly. It is a native of Nepaul, where the tree grows to 40 or 50 feet high, but in this country it rarely attains to more than 10 or 15 feet, and is ornamental.

— "A READER" requests us to publish the following on MANURE FOR STRAWBERRIES:—"Being a grower of about 3 acres of Strawberries, and farmyard manure in my district being very scarce, and also having to cart it nearly four miles, I shall be much obliged if any friend will kindly inform me of the best substitute to carry them through one year only, and when to apply it."

— REFERRING to TRENCHED AND UNTRENCHED GROUND, a correspondent writes:—"Perhaps your correspondent, Mr. Iggnlden, would kindly tell me how to grow Raspberries. I have a bed of the best kind planted according to his plan of not trenching, but plenty of rich cow manure, the ground never dug, between the plants, but top-dressed heavily. Now for four years I got plenty of very small fruit in my vegetable garden. I have good produce in trenched ground and scarcely any in the untrenched portion."

— AT a meeting of the Council of the Royal Caledonian Horticultural Society, held on August 14th, 1885, it was resolved to hold a SPECIAL EXHIBITION AND CONFERENCE ON APPLES AND PEARS, in connection with the Society's Winter Show, in the Waverley Market, Edinburgh, on the 25th and 26th November, 1885. While collections of Apples and Pears are solicited from all parts for comparison and instruction, the chief object of the Conference is to utilise the favourable opportunity presented by the fine crop this year for the purpose of gaining information about the Apples and Pears grown in Scotland, comparing their merits, and correcting their nomenclature. All fruit-growers, especially in Scotland, are therefore invited to send as complete collections as possible of the Apples and Pears grown in their district; and as the object is solely educational, there will be no competition and no prizes. It is not necessary that the fruit should be grown by the sender. No

limit will be put upon the number of kinds which any contributor may desire to send; but the number of each variety should be from two to four, according to circumstances. The Council are anxious to procure as complete representations as possible of the Apples and Pears grown in each district, and each variety should be distinctly labelled, with the name or names under which it is grown in the locality. It is also most desirable that each collection be accompanied by all the information possible about the climate, altitude, exposure, soil, stocks, method of cultivation, and other particulars, which will be of much value to the Committee in drawing up their report. For this purpose forms will be supplied on application to the Secretary. The specimens being strictly for examination and instruction, they must necessarily be at the disposal of the Council where required. Intending exhibitors must give notice to the Secretary or Assistant-Secretary, in writing, not later than Monday the 16th November, stating the number of varieties to be exhibited, and the amount of space that will be required. Collections of fruit may be consigned to Mr. William Young, Assistant-Secretary, 18, Waverley Market, Edinburgh, and delivered there on or before Friday, 20th November. The Council will pay the carriage of fruit and take all possible care of it, and will also see that it is properly staged for the inspection of the Committee; but they will not be held responsible for any error, damage, or loss of any fruit consigned to them. Exhibitors staging their own fruit can do so on Tuesday, 24th November; and all must be staged and the Hall cleared for the Committee by ten o'clock on the morning of Wednesday, 25th November. Each exhibitor will receive free tickets of admission to the Exhibition for himself and such number of assistants as the Council may deem necessary.

HERBACEOUS PLANTS.

YOUR correspondent, "N. R." at page 162 is evidently in error respecting *Inula glandulosa* and its being a "beautiful blue." Your correspondent, "D., Deal," has described the true plant in the last issue of the Journal as having orange yellow flowers. It is not only perplexing, but it is difficult to reconcile the statement of "N. R.," firstly in the beautiful blue of the *Inula*, and secondly the "enormous mass of Comfrey-looking foliage." The *Platycodon*s, as stated by "D., Deal," and *P. grandiflorum* in particular, is a fine blue at this time; the group comprises blue single and double, and white in single and double forms also. Not strictly double, perhaps, but with a multiplicity of petals, and also a striped form. The Caucasian *Scabious*, *S. caucasica*, and the variety *connata* are blues of a soft lilac shade, and stand in the front rank among late summer and autumn perennials, producing their lovely flowers, which are 3 inches across, in great profusion; but there is nothing of the Comfrey in the foliage of these. Blue again may in a measure be found in *Aster amellus* and its Bessarabian variety, both fine perennials of compact habit; plants which in a mass would prove most telling, having a far better effect than could possibly be produced with *Liatris spicata* under the most favourable conditions, and which at the best is a very third-class plant. In *Anchusa italica* we have a grand blue. At this time, however, it is on the wane, and is at its best during June and July. At the present moment I cannot call to mind any plant having flowers of a beautiful blue, and the enormous mass of Comfrey-like foliage. Indeed, apart from the *Anchusa* and *Symphytums*, there are few possessing this foliage. Perhaps "N. R." will describe the plant he refers to or forward specimens to the Editor for verification. At the present time, consequent upon the recent introduction of many genuine and first-rate novelties, there are numbers of very fine perennials—more probably than at any other period, and which may be had at moderate prices, so that there is no necessity for third-class plants to occupy positions where those of superior merit may be seen to advantage. Speaking of *Anthericum*s in his concluding remarks, "N. R." seems doubtful as to what species he is alluding to, and which, from his description, I rather suspect is *A. graminifolium*, and neither *A. Liliago* or *A. Liliastrium*.—E. JENKINS.

REMARKS ON JUDGING GRAPES.

AT the outset I wish to point out that I am not a discontented exhibitor, quite the reverse being the case, but I claim my right as an Englishman to have a grumble when the opportunity offers; and if my grumbling contributes, in a measure, to the correction of what I hold to be an error of judgment, so much the better. Of late years it has become the fashion among the compilers of prize schedules to offer prizes for Black Hamburg, and also for any other black variety, with corresponding classes for Muscat of Alexandria and any other white sort. No one can find fault with the encouragement given to the most popular black and white varieties, these being respectively Black Hamburg and Muscat of Alexandria, but it is the ambiguity of the wording of the classes for any other black and white sorts, that leads to so much misunderstanding and so many much-to-be-regretted wrangles in the fruit tents. I am aware that it is usually a difficult matter for those framing the schedules to find sufficient money to offer prizes for any Grapes that may be in season, and as a consequence the judges must be depended upon for deciding on the merits of the various competing sorts, but each schedule might well include a rule to the effect that all Grapes shown should be in season. Then if the judges, during August or early in September, persist in placing Black Alicante before

equally well-grown Madresfield Court, they can easily be proved to have committed a great error in judgment. That such decisions are now becoming of frequent occurrence numerous competitors will gladly corroborate, and the sooner it is stopped the better.

No one, I think, will dispute the fact of the great superiority of Madresfield Court over Black Alicante, more especially as far as quality is concerned, but if the present method of offering prizes, and the plan of judging by appearance, is persisted in, not a few ambitious cultivators will gradually substitute the more easily grown and most showy variety for a Grape considered by many connoisseurs to be superior even to the good old Black Hamburgh. Most Grape-growers are well aware that it is difficult to thoroughly colour the Madresfield Court, and very seldom indeed are they exhibited perfect in every respect. The bunches may be large, the berries extra fine, the flavour excellent, and only the colour a little wanting near the footstalks of the berries, and because of this slight deficiency they are placed second to highly coloured, and perhaps quite sour Black Alicante. Four such occurrences have come under my notice this season, and in only one instance—that at Weston-super-Mare, where Mr. Nash exhibited extra good Alicantes—do I consider the judges exercised sound discrimination. Black Alicante may be grown and perfectly coloured in a Hamburgh house, but the less said about the quality in such a case the less likely are we to offend. Black Alicante is essentially a late Grape, and if ripened during August and September with a plentiful amount of fire heat, they will keep well and give satisfaction to many, say any time during November and December.

Alnwick Seedling, now that the difficulty of expecting a good set is obviated, will also become a formidable rival to Madresfield Court, at least on the exhibition table. This noble-looking Grape colours even more surely than the Alicante; and, as in the case of the latter variety, the berries may be perfectly black and yet extremely sour. It is said to be a very good keeper, but I am afraid this will be found to be a mistake, as in two cases that have come under my notice the berries shrivelled in September and October. It may be the stock on which the rods are worked has much to do with this premature shrivelling, and if this proves to be the case the Hamburgh stock is the offender. With me it is fruiting on the Hamburgh, the latter carrying a crop as usual, thus preserving its individuality, but I have a strong Vine on its own roots for next season's fruiting, and I shall be much disappointed if the fruit fails to keep well. One thing is certain, this variety ought not to be encouraged in the any black class before the end of September. Neither ought the Gros Maroc, nor do I think it will ever figure very extensively on the exhibition stands. According to my experience it is a gross grower, not a free bearer, and the quality is only second rate. I have seen a few good examples of it, but have not tasted any really good.

Black Prince is not often shown nowadays, but, according to the present style of judging, well grown examples of this very poor flavoured Grape would occupy a premier position on the show table, and I have known a case where really well grown Black Hamburgs were placed second to it.

I hold that no other black variety than Black Hamburgh and Madresfield Court should be encouraged during August at least, and this would stimulate the culture of the two best black summer Grapes, as well as prevent the frequent unseemly wrangles which some exhibitors are too ready to commence.

In the case of white Grapes there is less cause to complain, as there is not much to choose between them. As a rule Buckland Sweetwater when well grown secures the first position, but occasionally this is superseded by good, or even fairly good, examples of Golden Champion or Duke of Buccleuch, and as both of these are in season and of superior quality, no one thinks of finding fault with the judges for preferring them. Foster's Seedling, however, I sometimes think rather hardly used, especially when shown in good condition, and yet passed over in favour of the more showy but otherwise inferior Buckland Sweetwater. The latter, both at Weston-super-Mare and Salisbury, was unusually good and fully deserved the premier awards, but in many cases they are unduly favoured at the expense of the better flavoured Foster's Seedling. I would not interfere with the wording of various schedules as far as the any white Grape class is concerned, beyond stipulating that Muscats be excluded. A class being provided for Muscats, not necessarily Muscat of Alexandria, the next should be for white Grapes, Muscats excluded, and this would shut out Canon Hall Muscat, which occasionally finds its way to the exhibition table, from the latter and drive it into the proper class for it. Too often, I am afraid, the flower show committees pay little or no heed to the effect the offering of prizes for certain things has upon the selections and proceedings of competitors, and I am sorry to say what few attempts I have made to correct the wording and arrangement of prize lists have not had any appreciable effect. Two or three practical gardeners ought to be included in every committee, and this would be for the advantage of all concerned.—W. IGGULDEN.

NOTES ON VEGETABLES.

CUCUMBER, CARDIFF CASTLE.—I have grown this variety in a frame for the first time this season, and consider it a most excellent Cucumber, which should be in the hands of all gardeners that have to give a daily supply for salad and kitchen use. I have not yet grown it in the winter season, but judging from its behaviour in a dung frame (and with rather rough treatment, as we had not time just then to give it proper attention), I think it will possibly prove an excellent variety for growing in winter. It is most prolific, of excellent flavour, and the length to which it grows

is all that could be desired for everyday use. We all like to get a good brace of Cucumbers, long and perfectly straight for the exhibition table; but as a rule they go to table sliced, so that it is far better to have two Cucumbers at a foot long than to have one at 2 feet long. So to all those that do not know this variety I would say, Give it a trial. So far as my experience goes, it appears to be more hardy than Telegraph, and is certainly more prolific.

TURNIPS, EXTRA EARLY MILAN.—Gardeners are often asked for vegetables for kitchen purposes when the late crops are exhausted and the early ones are not fit for use. I think the Turnip is as much called for, for soups, &c., as any one thing. I myself have been driven almost to my wit's end to know how to act to satisfy their wants; but in the spring in ordering the seeds I noticed the above variety, and thankful I was. I sowed it on the 18th of February on a warm border, and began to pull good little roots early in April. I made another sowing in March, on a south border, of Extra Early Milan, Early Snowball, and Veitch's Red Globe, and found by doing this they followed well in succession. We had just cleared off the Milan, and the Red Globe was fit for use. We had the Snowball, and this in pretty much at the same time, but we found them very useful. I think everyone should grow the Milan, as it is fitted to act as a "stop gap." I am only offering these remarks to those who may not have tried them, and as I have obtained many valuable hints from the *Journal of Horticulture*, so that it is only fair that I should try to help others by giving my experience through the same medium.—ROBT. D. LONG.

THE HISTORY OF THE CHRYSANTHEMUM.

(Continued from page 160.)

The last French raiser to be mentioned and the most important of all, for he must be known at any rate by name to every grower in this country, is Mons. Delaux. He it is who may proudly consider himself as the rival of Mr. Salter, although it must be distinctly stated that his conquests have been most brilliantly exemplified in the Japanese section, in which Mr. Salter had but little opportunity of working. Mons. Delaux and his son are perhaps of all florists, both English and French, those who have followed up with the grandest success the new road opened up by the introduction of the Japanese Chrysanthemums by Mr. Robert Fortune.

During a period extending over more than eighteen years they have been working and searching at the sacrifice of great cost and labour to produce an assemblage of these plants worthy of a place in the finest collections. It is almost entirely to them that we English cultivators are indebted for the majority of those splendid Japanese flowers which for years past have been, and are continuing to be, imported into this country. In fact, there is hardly an exhibition held here where the smallest stands do not contain some blooms of these eminent florists' raising. It would almost necessitate a volume by itself to give a list of their productions, which comprise Chrysanthemums of every section, but it would be an act of extreme discourtesy were the author not to mention some of the well-known flowers sent out by these gentlemen, especially as he has reason to be grateful for no little useful and interesting correspondence with Mons. S. Delaux fils. Those which have been in cultivation here for some few years past, and generally known, are Agréments de la Nature, Alexandre Dufour, Albert de Naurois, (syn. Albert,) Bouquet Fait, Cœur fidèle, Dolorès, Eclatant, Éléance, Emeraude, Etoile du Midi, Flambeau, François Delaux, Général de Lartigue, Gloire de France (wrongly called by some La France), Hiver Fleuri, Ile Japonaise, Isidore Féral, Japonais, Japon Fleuri, Jeanne Delaux (syn. F. A. Davis, wrongly catalogued J. Delaux in many English lists, and thus easily confounded with Jean Delaux, an older and now nearly uncultivated variety), Le Nègre, L'Incomparable, L'Île des Plaisirs, La Charmeuse, La Frisure, Laurence, La Bienvenue (syn. J. Hillier), Le Chinois (syn. Chinaman), M. Delaux, M. E. Pynaert van Geert, Orphée, Rêve de Printemps, Source d'Or, Tricolor (syn. Mr. J. Starling), and many others. Among the importations from this source during the last two seasons the following varieties have been distinguished by having first-class certificates awarded to them—Mons. Astorg, Mons. Tarin, Flamme de Punch, Margot, Beauté des Jardins, Madame de Sevin, Brise du Matin, Mons. Moussillac, Souvenir du Japon, and Fernand Féral.

To an English grower it will seem strange that such a thing as a Chrysanthemum society does not exist in France. Some of the horticultural societies are giving special attention to the flower latterly, but the exhibitions would appear to be few and far between. There was one about 1876 in the south of France, but it was hardly heard of here. Since then there may have been others, but little attention has been paid to them by the English, especially as the French method of culture generally practised is to aim more at the development of a large number of blooms on a plant than the culture of what we know as show flowers.

Last year there was one at Paris and another held under the auspices of the Chalons Horticultural Society, at both of which medals were awarded to the successful competitors. At the latter

place the schedule of prizes was not arranged in a similar way to ours, and was divided into classes in the following manner :—

First section, pot plants.—Group 1.—For the best seedling variety or varieties not yet in commerce.

Second section, group 2.—For the best and largest collection comprising all kinds.

Second section, group 3.—For the finest collection of 100 select varieties.

Second section, group 4.—For the finest collection of forty select varieties.

Second section, group 5.—For the finest Japanese collection.

Third section.—Cut flowers.

Third section, group 6.—For the finest and largest collection comprising all kinds.

Third section, group 7.—For the finest collection of 100 select kinds.

Third section, group 8.—For the finest collection of fifty select kinds.

Third section, group 9.—For the finest collection of Japanese varieties.

Fourth section.—Objects of artistic culture and decoration.

Fourth section, group 10.—For bouquets, baskets, &c., made up with Chrysanthemums.

Fourth section, group 11.—For the best treatise on the Chrysanthemum.

At this Exhibition nearly every French amateur and professional raiser of any standing in the horticultural world took part, and a banquet brought the proceedings to a close. It is curious to note that the cut flowers, which numbered 3000, instead of being exhibited in boxes or show boards, were shown in glass bottles, and so great a stir did the Show create in the town that the local floricultural journal devoted upwards of five pages to the event. There was also a subvention granted by the Municipal Council of the town, a precedent that if acted upon in this country would gladden the hearts of many a grower here. As a consequence of this the Chalons Horticultural Society appointed a Special Committee to organise and conduct an international plebiscite in favour of the Chrysanthemum, and some of the English growers were invited to take part in it, but the result like that held in this country in 1883 can hardly be regarded as an entirely satisfactory or useful one from an exhibitor's point of view. It may prove of some little interest to point out that the Committee in conducting the ballot issued voting papers to the leading cultivators, in which not more than fifty varieties were to be named. The papers on their return were examined by the Committee, and the fifty varieties which received the largest number of votes were selected and arranged in the relative order. The result was as follows :—

Triomphe de la Rue des Châlets
Erectum Superbum
Gloire Rayonnante
Source d'Or
Laciniatum
Fair Maid of Guernsey
M. Planchenau
Bras Rouge
M. Frémy
Madame Clemence Audiguier
Yellow Dragon
La Charmeuse
La Frisure
Souvenir de la Reine Mercédès
La Vierge
Pink Perfection
L'Automne
Sœur Mélanie
Marguerite Marrouch
Perle des Beautés
Fée Rageuse
Père Delaux
L'Île des Plaisirs
Timbale d'Argent
Belle Paule
William Bull

Royal Soleil
Perle des Blanchés
M. Moussillac
Maréchal Soult
M. Roux
Richard Larios
Alexandre Dufour
Fabian de Médiana
M. Crousse
L'Infante d'Espagne
Dr. Audiguier
Flamme de Punch
Aimé Ferrière
L'Incomparable
Reine Margot
M. Delaux
M. Castex
Empress of India
Patrie
Mlle. Cabrol
Lady Selborne
M. Elie
Dr. Masters
M. Astorg
M. Patrolin

In America during the last year or two the Chrysanthemum may be said to have created quite a furore, and our Yankee cousins seem bent upon vieing with the Europeans in their appreciation of it. There does not appear to be any authentic record of the date of the introduction of this plant into the States, but it is said that it was undoubtedly known there in 1825, and there are many varieties now growing in the gardens in Long Island that have been there for upwards of half a century, and are much similar to the varieties before described in the early part of this treatise. Several florists, both amateur and professional, in that great country have raised and distributed new varieties from seed, among whom may be mentioned Dr. Wallcott and Mr. Thorpe. Owing to the great distance, however, that they are from the centre of the Chrysanthemum grow-

ing world is in all probability one reason why they have sent out some kinds but little valued by those who have grown them in Europe, for although the author has had no opportunity of seeing these American productions he learns from both French and English sources that the American varieties leave much to be desired.

This spring another American, Mr. W. K. Harris, is sending out for the first time five new kinds, which may in due course be catalogued in the English growers' lists, and for that reason it is unnecessary to give their descriptions, and those of the other two gentlemen above referred to. Mr. Harris has named his plants Christmas Eve, Mrs. Vannaman, White Dragon, Golden Queen, and W. L. Scheffer. Mr. H. Waterer, an importer of plants and bulbs in the States, announces the offer of twenty-five incurved and Japanese varieties selected in China and Japan, and which bloomed for the first time in that country last season.

If any proof be required that the Chrysanthemum is still as popular as it ever was, and that the love of it has not yet begun to abate, the author can point out instances where tiny plants only 2 or 3 inches high of new varieties have in the early part of this year been distributed by the raisers at the unusually high price of £1 each, a sum perhaps never yet paid for a plant of the Chrysanthemum. And, further, Messrs. Cannell & Sons have received direct from Japan 200 Chrysanthemums, besides the usual complement from the Continental raisers. Mr. N. Davis reports that he has under trial more than 120 distinct new sorts, while the French send out among them 145 varieties of Japanese, Pompon, summer-flowering, and other kinds, all of which they represent to be new and distinct. So great is the demand for our favourite flower that there are nurserymen who devote in some cases the whole, and in others a large part, of their establishments solely to its culture and the testing of the novelties that appear from time to time, at many of which the lover of the Chrysanthemum is invited to attend when the blooming season arrives.

Before concluding it may not be entirely useless to give the reader a list of some of the nurserymen who pay special attention to the growing of the Chrysanthemum, and at the same time it must be borne in mind that plants may be purchased of many others who are, of course, quite as well deserving of notice, but with whom the author is unacquainted, and more ignorant as to the extent of their business in this particular branch.

Mr. W. E. Boyce, Yerbury Road, Holloway, N. ; Mr. Wm. Bull, King's Road, Chelsea ; Messrs. Cannell & Sons, Swanley, Kent ; Mr. N. Davis, Lilford Road Nurseries, Camberwell, S.E. ; Messrs. Dixon and Co., The Amhurst Nurseries, Hackney, E. ; Mr. Wm. Etherington, Manor House, Swanscombe, Kent ; Messrs. T. Jackson & Sons, Kingston, Surrey ; Messrs. Laing & Co., Forest Hill, S.E. ; Messrs. Mahood & Sons, Putney ; Messrs. J. Morse & Sons, Dursley, Gloucestershire ; Mr. T. B. Morton, Mouden Bridge Nursery, Darlington ; Mr. R. Owen, Boyne Hill, Maidenhead ; Mr. W. Piercy, Forest Hill, S.E. ; Mr. G. Stevens, St. John's Nursery, Putney ; Mr. C. Turner, The Royal Nurseries, Slough ; Messrs. Veitch & Sons, King's Road, Chelsea ; Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.—C. HARMAN PAYNE.

FRUIT TREES IN POTS.

SOME persons fail, others succeed in growing fruit trees in pots satisfactorily. Mr. George Hawkins, gardener to Col. T. P. Turberville, Ewenny Priory, Bridgend, is one who succeeds. We have seen examples of his skill on more than one occasion. The last was the fruiting spray of Peaches figured, but necessarily much reduced. The fruit was very fine indeed, and the foliage equally so. The grower of the fruit writes as follows :—

"We have two small orchard houses, and grow over ninety trees in pots. The back wall of our lean-to house is also covered with trees, and two Vines occupy part of the roof. I think there is no other way in which so many fruits can be had and so many varieties grown, so as to insure a long season, as having trees in pots. I should advise anyone who may have two houses to devote one to such trees. Half a hundred of my trees can be grown in a small house, as the early ones when gathered are turned out, and the later ones given a little more room, and so on. Cherries come out very early. When all the fruit is gathered the trees can be turned out and the house filled with Chrysanthemums. I have this year gathered 140 Nectarines from one tree in a pot of Rivers' Orange, 100 off one tree of Pine Apple, and 100 Peaches from one of Rivers' Early York. Sixteen-inch pots are the largest used, and but very few of them. We get our trees from Mr. Rivers. I never saw Mr. Rivers or yet the Sawbridgeworth nurseries, but if I ever have a chance to see them I expect something worth the journey.

"My method of culture is very simple. The trees are repotted annually

just before the leaves drop. Soil is taken from waste patches on the roadside, and collected only a week or two before using, and mixed with about a fourth part of its bulk with manure from a Cucumber bed. After potting, the trees are heavily watered, placed close together, and syringed

relied upon as sure croppers in pots. We grow several other sorts, but these would suit any new beginner.

"CHERRIES.—May Duke, Elton, Governor Wood, black and white Bigarreau.



Fig. 36.—PEACHES FROM A TREE IN A POT.

once or twice daily until most of their leaves drop. A little bone manure was mixed with the soil at potting time last autumn, and I have found it answer well. Through summer we use liquid manure water that drains from the dung heap once or twice a week. The following varieties can be

"PEACHES.—Conkling, Hale's Early, Noblesse, Waterloo, Alexandra Noblesse, Dagmar, Early Alfred, Early Rivers, Gladstone, Lady Palmerstone, Osprey, Princess of Wales, Rivers' Early York, and Stanwick Early York.

"NECTARINES.—Downton, Elruge, Galopin, Hardwick Seedling, Pitmaston Orange, Violette Hâive, Albert Victor, Milton, Improved Downton, Lord Napier, Newton, Pine Apple, Rivers' Orange, and Stanwick Elruge.

"PLUMS.—Belgian Purple, Coe's Golden Drop, Denniston's Superb, Green Gage, Lawrence's Gage, Oullins Golden, Reine Claude de Bavay, and Transparent.

"PEARS.—Jargonelle, Beurré de l'Assomption, Benrre d'Arenberg, Beurré Superfin, Souvenir du Congrès, Louise Bonne of Jersey, Beurré Hardy, Marie Louise, Durondeau, Bonne d'Ezès, Pitmaston Duchess, Doyenné du Comice, Duchesse d'Angoulême, Beurré Diel, and Beurré d'Arenberg."

TUBEROUS BEGONIAS AT RATHRONAN HOUSE.

ONE of the places in this locality that Tuberous Begonias are better grown from year to year is at Rathronan House, near Clonmel. A dozen beds are filled in the flower ground, some of the most intensely brilliant colours, such as Lælia, Sedeni, Oriflamme, Vesuvius, and many others, including locally raised seedlings, chiefly remarkable for their floriferousness and compactness of habit. I have seen the best varieties, both single and double, bedded out; but many of those do not do at all so well as those better furnished, though the individual blooms may be finer. So intensely brilliant were some of the beds, for instance, two of Lælia, a deep crimson pink, that some of my gardening friends whom I drove out found it difficult to gaze long on them. So of the orange reds; whites do not seem to be popular for bedding out. Madame Saladin, a yellowish white, very free flowering, I have grown outside for a few years, but it is not showy. If well treated it becomes semi-double.

The variety here is very extensive, and as I frequently see inquiries in the Journal as to really good varieties, I cannot do better than copy the names of some of the best sorts that Mr. Gough has retained, after "weeding out" those inferior.

Doubles.—Miss Wise, soft, full, rosy pink; Mons. Keteleer, this is like the last, and very desirable; Agnes Sorrel, salmon pink; Opbelia, Mdme. Comesse, very fine; Jules Lequin, Marie Lemoine, David M. Home, good; Edith, Alha Plena, best double white; Citrina Plena, and Duchesse de Cambrages.

Singles.—Snowflake, magnificent tinted white, a shade over 6 inches across; Mrs. F. Freeman, very fine; Countess of Kingston, still one of the largest and finest crimson reds; Mrs. Highgate, immense size, scarcely inferior to Mr. Cannell's monsters; Hon. Mrs. Brassey, large rich crimson, that no collection should be without; Sir Stafford Northcote, Ball of Fire, Marquis of Bute, La Rosière, F. E. Laing, Aspasia; and among the earlier-raised varieties still deserving of patronage would be Oriflamme, Trocadero, Progress, Monarch, Mdme. Stella, Souvenir de M. Saunders, &c.

Here the custom is to start early, say in February, and then grow slowly along so as not to allow the plants to get drawn. Much care is required in keeping them over the winter, so as to prevent rotting on the one hand or drying up on the other. Even if no water is given, great risk is run even by laying them under the stage, should the atmosphere of a house be at all moist. In this way, at Cork last year, one of the finest collections in the British Isles were seriously injured, much more than 100 guineas' worth being lost when examined.

The risk is much greater with the newer developments of doubles and semi-doubles coming from MM. Crousse, Lemoine, Keteleer, &c., in France than those raised by Cannell, Laing, and others in this country. Many singles, and some doubles, on the other hand, as Gloire de Nancy, I have known to live outdoors the whole of last winter merely covered with coal ash. Many are under the impression they can get fine Tuberous Begonias from seed. No doubt there are fine strains advertised in your columns from time to time, but if one worth naming was found in 10,000 the raiser would be lucky.—W. J. MURPHY, Clonmel.

ESTIMATE OF VEGETABLES.

PEAS.—The dry season has been very much against these. The late crops are a complete failure, falling a prey to aphides, and the mid-season varieties were badly infested with mildew, whilst the earliest came in quickly and were soon over. Of the earliest, Dickson's First and Best cropped splendidly, producing well-filled pods, bringing 3s. per bushel, and next to this came William I., a good crop of fine well-filled pods, which realised no more, and the crop being fully a fourth less the advantage is considerably in favour of the first named. Veitch's Extra Early was fully a week in advance of the two previously named, and as it gives its crop all at once is a very desirable early variety. It realised double the price of the others per bushel, but it must be borne in mind that its yield was fully one-third less than for them. Early Sunrise (Day's) may be mentioned as having filled its pods well, which it does not always do, and it is fully a week later, though a more telling variety in the pod than First and Best and Kentish Invicta, a blue Pea, ought to be mentioned as a prolific variety, coming in a little later than William I. My selection of the earliest sorts are Veitch's Extra Early as a first crop on warm borders or situations, and then First and Best with William I. for the main supplies, but I by no means wish to disparage the others, as they crop well, and under field culture pay as well as any.

Of the second earliest I find Criterion a fine variety, and where sticks

can be had it is, I think, the most prolific and best in quality of all the second earliest. What better than Huntingdonian and Champion of England? Yes, better by nearly half in crop, and equal in quality; indeed, it is a Ne Plus Ultra of high flavour and heavy cropping qualities. Telegraph beat Telephone hollow; it cropped heavier, and though its pods were not quite so big, its colour and high quality gave it an advantage; anywise, it brought more money. Prizetaker, though green as grass, disappointed; grown along with Criterion it cropped less, and brought less, taking quantity for quantity, and may be classed with such kinds as Hundredfold and Dickson's Favourite, good in their way, but not comparable to Criterion.

Of second earliest of medium height, or 3 feet or so, I give Gladiator first place; it is superior in cropping to Fillbasket, and the quality is excellent. Marvel was very productive, and its quality is excellent. It succeeds Gladiator, being more a main-crop than second early variety. Dr. Maclean did capitally, and it is too good a Pea to be omitted; and that good sort Essex Rival certainly ought not to be passed, on account of its good constitution and productiveness. But I have nothing to record in favour of John Bull nor Robert Penn, Stratagem, and others of like ilk. They please me wonderfully well in the garden, but they do not pay. Veitch's Perfection did not do well, the drought was too much for it, and similar remarks apply to Best of All, which is of the same type. In ordinary seasons I have found them unsurpassed as medium height main crop varieties. The Pea that seems to have done well this season is a kind I have not grown—viz., Albert Victor; it is a large Pea of medium height, great cropper, and not subject to mildew, being highly eulogised by at least one grower for market.

Of the late sorts the only one that cropped at all profitably in the tall kinds was Ne Plus Ultra. It cropped well, and brought 4s. 6d. per bushel, but none seemed to be able to bear the drought, and were soon over. Blue Scimitar I heard of as doing well, but I did not grow it. Culverwell's Giant Marrow did well, but it did not take in the market. Omega was anything but prolific, and a similar remark applies to Sturdy, which, however, for table is much esteemed. Walker's Perpetual Bearer may be placed in the same category as not being paying sorts—not, at least, this season; therefore I give as selections Ne Plus Ultra and Blue Scimitar, the former for sticking, the latter will do without, but I find sticks are necessary for all to have them in perfection, yet they cannot be used in field crops generally.

Evolution cropped well, and certainly is the finest flavoured Pea I have tasted. It is a grand Pea for any purpose. The Wordsley Wonder, which I had for the first time, was a marvel of productiveness, and is a second early, coming in a few days only after the earliest, being a blue wrinkled kind of medium height, about 3½ feet, and the quality is excellent. It is certain to become popular, for if it keeps up its character as shown this season, it must take first rank amongst the earliest kinds, if, indeed, it does not supersede them.—UTILITARIAN.

MIXED FLOWER BEDS.

FLOWER beds filled with two or more distinct kinds of plants set out so that the colours of the flowers, though mixed, yet harmonise or contrast, is an old method of bedding which might with advantage be employed more often than it is. Setting aside the obvious usefulness of the system in cases where the supply of the finer bedding plants is below the requirements, we would place the system on the basis of its own merits as a good system. Some of the very prettiest and longest lasting beds we have ever seen have been mixed beds, and although these arrangements lack the massiveness which a block of one colour gives, they nevertheless do not fail in effectiveness, which in reality is the main point.

In commending mixed bedding we must not on that account be supposed to do so at the expense of any other method of filling the beds. The fact is, there is plenty of room in most gardens for many styles of bedding, and in the case of those of more limited extent there is no reason why the same thing should be done year after year without change; so that we would not in any way say a word against the method adopted by anyone to make his flower garden bright. At the same time, it may be worth while to present the mixed method to notice as being as worthy of adoption as any other.

At first sight mixed bedding might be considered as a very simple matter, but it is possible to invest it with more than the simplicity of merely placing out in alternate rows plants of two kinds of flowers. Either that system may be adopted, or a modified one of having each plant in the row following in alternate order according to the kinds used. For some things that system is a very good one, and especially where the plants employed form a striking contrast. Even where the colours harmonise a simple mixing of the plants as above may be employed, but it does not follow that we should confine ourselves to that method of planting alone. Much better effects are produced by forming a groundwork of one colour, and dotting in it another kind of plant. The groundwork may form such a slight relation to the general arrangement, as that each main plant may be divided from its neighbour merely by a narrow band. Or it may be that the groundwork takes up the whole of the bed with the exception of a few dot plants, which give character to the whole. However, it must be observed that the principle of mixed bedding is in all cases present. Two things to be avoided in mixed bedding are insipidity and glaring colours. On the whole the insipid arrangement is preferable to the other even when judged on their individual merits, but the former can also in most cases be improved and made presentable by the addition of a few plants of bright colouring, whereas the other always remains intolerable. The most extreme example

of bad taste we have yet seen was in a mixed bed of dark-leaved Beet and *Centaurea ragusina*. Yellow and black might prove even worse, but the addition of a few pink or red *Pelargoniums* would help the last named, whereas in the other case they would not. Purple and yellow in combination may either be a failure, or, on the other hand, prove a most striking success. If the purple be deep, as in *Tory Viola*, and yellow of the golden hue of *Pansy Golden Queen* of England, one might hope for success, but if either the purple or the yellow were light in shade, then they would be vulgar. And so a light yellow in combination with *Vesuvius Pelargonium* would be offensive, while a deep yellow with a crimson variety like *H. Jacoby* would be extremely effective. An illustration of an insipid bed would be *Christine Pelargonium* with a light yellow *Viola*. If the *Viola* used were a deep yellow its character for insipidity would be removed, while were a deeper shade of pink used with the deeper yellow, a really effective mixture would be the result. A very light shade of blue in combination with white gives a bed without character, but if the white is produced by a white-leaved red-flowered *Pelargonium*, then the result is completely changed for the better.

Before giving some examples of good combinations, it may be noted that the bands and edgings to beds alter the general tone of the arrangements considerably. Not only may the general effect be improved, but, on the other hand, a really effective arrangement may be entirely nullified by its setting. This is true in all kinds of bedding, but holds with increased force in the kind under discussion. The most pleasing of all combinations in mixed beds are produced by soft colour shades and white. Perhaps one of the very best is composed of a groundwork of *Königa variegata* dotted rather thickly with *Pelargonium Flower of Spring*. The *Königa* is pegged down so that the *Pelargonium* is just a little taller when the little heads of the former make their appearance. A band of *Iresine Lindenii* or *Coleus Verschaffeltii*, with a white-leaved plant for a edging, help to make a pretty and effective bed. Dwarf *Ageratum* with the same *Pelargonium* planted rather widely apart, a band of white enclosing the central mass and a deep blue outside the white, with an edging of grey, makes a good bed. *Viola Duchess of Sutherland* substituted for the *Ageratum* is perhaps even better. *Vesuvius Pelargonium* pegged down, mixed with *Viola Alpha*, with a grey or white edging, forms a rich combination.

We have this season, in a set of four beds, the two *Calceolarias Kayi* and *General Havelock* in mixture. The yellow *Kayi* should be planted as one to three of the above rich brown variety. The band in this instance is *Lady Macdonald Lobelia* and grey *Sedum* for an edging. *General Havelock* and *Master Christine* in equal number with a band of *Viola Sovereign*, deep yellow, makes a very good bed. *Mangle's Variegated Pelargonium* and *Wave of Blue Lobelia* together, the latter in the proportion of five to ten for one of the former. The same *Lobelia* and *L. Lady Macdonald* in equal number thinly dotted with single plants of *Chamaeopence diacantha* and banded with the striped-leaved *Polemonium*. Either of these *Lobelias* planted in small intersecting circles with a good plant of *Lass o' Gowrie Pelargonium* as a dot plant in each circle will make thoroughly good beds. Numerous modifications may be carried out, especially by employing decorative plants, standard *Fuchsias*, *Abutilons*, &c., as centre plants, or dotted thinly about over the beds according to their size or the taste of the cultivator. For the past year or two we have found a few of the best dwarf single *Dahlias* very useful for mixed bedding. These must not be planted closer than 2 yards apart, and the groundwork may be any flower or flowers which will harmonise well with the shades of yellow, red, and rose, and of white, which prevail in these. Of course they are suitable alone for very large beds or long borders.

Old specimen *Fuchsias*, double *Pelargoniums*, *Humea elegans*, *Tuberous Begonias*, &c., dotted thinly over any very poor bed at once effects a complete transformation. The only matter of consequence to be kept in mind is to use these very sparingly, so that each can be seen all round, and further, not to mix *Pelargoniums* with any of the others, but to keep each kind in a bed by itself.—B.

HORTICULTURAL SHOWS.

TROWBRIDGE.

THE Exhibition of this very old Society continues to be surprisingly attractive, not less than 15,000 people having paid for admission, many of these coming a considerable distance by road or rail from the surrounding country. For thirty-six years this Society has been established, and, as one very old exhibitor remarked, but very slight alterations have been made in the prize schedule for several years past. As a consequence, the Show is more remarkable for the quantity rather than the quality of the plant exhibits; and, why when there are so many much better shows held in the neighbourhood, the Trowbridge Show continues so exceptionally attractive remains a mystery. *Fuchsias* are always shown in splendid condition, being in fact second to none in the country, and for these fairly liberal prizes are offered. The specimens are all very tall and floriferous, there being nothing stiff or formal about them. Mr. J. Lye, gardener to the Hon. Mrs. Haye, Lavington, who for a long time has made *Fuchsias* a specialty, had this year to be satisfied with the third prize for both six varieties and four varieties; Mr. J. Matthews, gardener to W. R. Brown, Esq., Trowbridge, and Mr. H. Pocock, gardener to J. P. Haden, Esq., Trowbridge, being respectively first and second with six varieties; and J. Matthews and G. Tucker, gardener to Major W. P. Clark, Trowbridge, first and second with four plants.

Owing to the smallness of the prizes offered, the classes for stove and greenhouse plants, though well filled, attracted nothing from a distance, and as a consequence the quality was somewhat inferior. There were

medium sized and fairly well flowered specimens of *Allamandas*, *Clerodendrons*, *Ixoras*, *Dipladenias*, *Bougainvilleas*, and *Ericas* in competition, and the principal prizewinners were Messrs. G. Tucker, H. Pocock, J. Matthews, H. Clack (gardener to C. E. H. A. Colston, Esq., Devizes), G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, W. G. Drummond, Bath, and J. Lye. Ferns and Mosses are always well shown at Trowbridge, the groups being more noteworthy on account of the healthy state of the plants than for their size. All the best show varieties of *Adiantums*, *Gymnogrammas*, *Davallias*, *Dicksonias*, and other popular kinds were well represented; and the prizewinners were Messrs. G. Tucker, first, Henry Clack and G. Coke (gardener to A. P. Stancombe, Esq., Trowbridge), equal seconds, and H. Pocock third. There were also various other classes for *Pelargoniums*, *Heaths*, *Coleus*, *Achimenes*, *Cockscombs*, *Begonias*, *Balsams*, *Verbenas*, and *Petunias*, many of which might safely be cut out and the prize money diverted to the other classes.

Cut flowers are always largely shown at Trowbridge, and this year, notwithstanding the unfavourableness of the season for several kinds, the competition was even better than ever. Messrs. Cooling & Son, Bath, and Keynes, Williams & Co., Salisbury, divided the honours for cut Roses; Mr. J. Mattock, Oxford, being a good third in both cases, all showing a really excellent lot of blooms. Messrs. Keynes, Williams & Co. were first in both large classes for *Dahlias*, and they also obtained certificates for three novelties, but on the whole the blooms were scarcely up to their well-known form. Other successful exhibitors of *Dahlias* were Messrs. T. Hobbs, Bristol, G. Humphries, Kingston Langley; and G. Horsall, Bath. *Asters*, *Verbenas*, *Pelargoniums*, and other cut flowers were also well shown. Vases for table-decoration were particularly well done, the arrangement of the choice flowers employed being generally light and tasteful. Mr. E. S. Cole, Sneyd Park, Bristol, was again a good first, and was followed by Messrs. E. T. Hill, Westbury-on-Trym, and M. Hookings, Clifton. Mr. W. C. Drummond was first for both hand bouquet and memorial wreath; Messrs. E. S. Cole, M. Hookings, and J. Matthews also exhibiting successfully in these classes.

Fruit, especially choice kinds, was shown in great quantities, and the quality, considering the insignificance of many of the prizes, was much better than might have been expected. With a collection of ten dishes Mr. A. Miller, gardener to W. H. Long, Esq., Rood Ashton, Trowbridge, took the lead, having fine *Foster's Seedling* and good *Black Hamburgh Grapes*, *Barrington Peaches*, *Moor Park Apricots*, *Pitmaston Orange Nectarines*, a *Melon*, *Plums*, &c. Mr. W. Rye, gardener to James Derham, Esq., Sneyd Park, Bristol, was a good second, his collection including very fine *Ford's Seedling Peaches*, *Hero of Lockinge Melon*, *Morello Cherries*, *Red Astrachan Apples*, *Hamburgh* and *Muscat Grapes*. Mr. T. Smith was third and G. Garraway, Bath, highly commended. Mr. Miller was awarded a first prize for a fairly good *Queen Pine Apple*. There were several classes for *Grapes*, and the competition was good in every case. Messrs. A. Young (gardener to B. Thomas Esq., Clifton), George Hodges, Bath, H. Clack, J. W. Shelton (gardener to W. K. Wait, Esq., Bristol), F. Smith, Salisbury, A. Miller, were all successful. *Peaches*, *Nectarines*, *Apricots*, *Cherries*, *Plums*, *Apples*, and *Pears* were all shown extensively. Of vegetables there were immense quantities shown, and the quality generally was surprisingly good. The best collections were staged by Messrs. T. Evry, G. Garraway, and A. Miller.

FROME.

THE second attempt at holding a summer show at Frome was a decided success, and there is no reason why the Society should not have first-class exhibitions. Following closely on the Trowbridge Show a considerable number of exhibits came from the latter place. However, there was no mistake about the quantities brought together or the great advance made in the number of entries, and the numerous visitors appeared to be well satisfied with the display. There were no classes provided for trained plants, the principal prizes being offered for groups. Mr. E. Wilcox, gardener to Mrs. Simkins, Frome, was first, his neatly arranged group comprising a great variety of serviceable plants; and the same remark applies to the second prize group, arranged by Mr. B. Hopkins, gardener to John Baily, Esq., Frome. Mr. G. Tucker, gardener to Major W. P. Clark, Trowbridge, competed in this class with a number of trained specimens, but these did not find favour with the Judges, and were commended only. The latter exhibitor was a good first with a collection of Ferns, and was followed by Mr. Wilcox. Mr. Edwards, gardener to A. Haley, Esq., Frome, was first for *Fuchsias*, the second prize going to Mr. G. Taylor, gardener to A. R. Baily, Esq., Frome. Mr. Wilcox was first for *Coleus*, and Mr. G. Taylor second, both staging creditably. *Begonias* were well shown by Messrs. A. A. Walters, Bath, and E. Wilcox; variegated *Pelargoniums* by B. Hopkins and E. Brown, Chapmanslade; *Gloxinias* by A. A. Walters; flowering *Zonal Pelargoniums* by G. Tucker and E. Wilcox; and *Petunias* by E. Wilcox, who received the prizes.

With cut Roses, Messrs. G. Cooling & Son, Bath, were easily first, Mr. G. Garraway, Bath, being a good second. Mr. G. Taylor was a good first with twelve bunches of choice cut flowers, and Mr. Wilcox second. Several good wreaths were shown, but Mr. M. Coombe, foreman, Marston Gardens, was easily first, and he also displayed great taste in the arrangement of his first-prize epergne. Mr. Garraway was first for hand bouquets, and Mr. M. Hookings, Clifton, was second in these classes.

Fruit was shown in great quantities, and in the competing collections of both fruit and vegetables the Bath professionals had extra large piles of each sort. Mr. T. Smith, Bath, was first for a collection of six dishes of fruit, and Mr. G. Garraway second. Mr. G. Taylor was first with three bunches of *Black Hamburgh Grapes*, these being fairly well shown, and Mr. Garraway was second. The best *Melon* was staged by Mr. W. Thomas, gardener to J. F. F. Horner, Esq., Mells Park, and Mr. S. Andrews, gardener to A. G. Hayman, Esq., Frome, Hapsford, Frome, was second, both showing fruit of good quality. Messrs. G. Cooling & Son had the best dish of dessert Apples, a very handsome dish of *Beauty of Bath*, and in the class for culinary sorts Mr. J. Cray, Frome, was first with a fine dish of *Lord Suffield*.

Vegetables were shown in large quantities, both the gardeners' and cottagers' productions being most praiseworthy. In the open class Mr. Garraway and Mr. T. Ebrey, Batheaston, were equal firsts with collections, and Mr. C. Chedzey, Croscombe, third. The best brace of *Cucumbers* was staged by Mr. Cray, who had a fine brace of *Carter's Model*, and Mr. Hopkins was first in the class for *Tomatoes* with a fine dish of *Sutton's Perfection*. Col-

lections of salads were well shown by Mr. Garraway and W. Dredge, gardener to P. W. Cruttwell, Esq.

Miss Ormerod offered valuable prizes for the best collection of specimens of good plants injured by insects, with a short written account of the methods of remedy or prevention adopted. Mr. H. Haley, Frome, was again the only competitor, and received the first prize for a fairly good collection.

WALKLEY AMATEUR SOCIETY.

THE fourth annual Exhibition of this Society was held in the National School Rooms, Walkley, Sheffield, on Monday the 24th, and considered as a whole it was undoubtedly the most extensive and best display the Society has yet achieved. The members, considering that they are all without exception amateur growers, and in no single case employing a professional gardener, with the additional drawback that themselves are all nearly engaged in business away from their houses and their gardens during the greater part of the day, having only the early morning and evening at their disposal for gardening, contributed to the Show a great many truly surprising examples of first-class plant cultivation, amongst which must be mentioned as occupying first place the splendid groups of Gloxinias and exotic Ferns from Mr. Thos. B. Hague, the President of the Society. The Gloxinias, numbering eighteen, very large and vigorous plants, carrying from twenty to thirty very fine blooms each, were tastefully arranged as a group, intermixed with small, fresh, and healthy plants of *Adiantum cuneatum*, which formed a charming groundwork to their large dark foliage and bright flowers. Mr. Hague also exhibited a beautiful specimen of *Asparagus plumosus nanus*, nearly 4 feet in diameter. Amongst other exhibits worthy of special mention as shown by the amateur members, were *Coleuses* from Mr. Hague and Mr. Stocks, *Begonias* from the last two named and Mr. Barnes; pot *Roses* and British Ferns from several exhibitors. Cut flowers were numerous; especially so were German Stocks, of which we have not met with so large and excellent a display at any of the larger and more pretentious exhibitions we have this year visited.

Groups of plants, not for competition, were exhibited by the following honorary members of the Society:—Mr. W. K. Woodcock, gardener to Mrs. Mark Firth, Oakbrook, Sheffield; Mr. E. Holland, gardener to Duncan Gilmour, Esq., jun., Sandygate; Mr. Simpson, florist, Crookes; and Mr. Hartley, Birkendale. Mr. Holland's exhibition consisted of a number of very fine and fresh *Lilium auratum* and vars of *lancifolium album* and *rubrum*, having upwards of eighty fresh blooms, each expanded. He also exhibited a box of twenty-four cut blooms of *L. auratum*, amongst which were some fine varieties, and a large box of splendid blooms of cut *Roses*.

Mr. Simpson's group was charmingly bright and fresh, forming a very attractive feature at the entrance to the rooms; it was arranged as a large crescent-shaped bay, the centre of which was composed of Ferns, very clean, bright, and fresh, and the two wings of brightly coloured *Pelargoniums*. Amongst the best and most attractive of the Ferns in this group were *Adiantum venustum*, *glaucophyllum*, *gracillimum*, *Capillus-Veneris magnifica*, *Pteris scaberula*, *Cheilanthes elegans* (very fine), *Davallia Novae Zealandii*. *Pelargoniums* comprised some of the most newest and best amongst Zonals, single and double, amongst which we especially noted as very fine in doubles, E. V. Raspail, General Farr, and Paul De St. Victor. Included in the same group were a number of small plants in 48-sized pots of a charming new *Fuchsia*, double white corolla, large flower and very free, with excellent bushy habit of growth, named *Madame Jules Chrétien*, a variety worthy of note by all *Fuchsia* growers.

Mr. Hartley's group contained a number of fine varieties of *Amaryllis*, some pretty table plants, with a fine specimen of *Asparagus tenuifolius*. The group exhibited by Mr. Woodcock was an extensive one, occupying the whole of one end of the room, and consisting of choice flowering and foliage plants in great variety, amongst which were noticeable a number of plants in 48-sized pots, each about 15 inches high, bushy, and covered with bloom of the charming little stove annual, *Torenia Fournierii*. Grown freely in an intermediate or cool stove temperature until the plants come into flower are charming for conservatories in late summer, the rich and pleasing colours, with the profusion of flowers, rendering them attractive to all. A notable feature of this group was the mode of arrangement, the plants being so grouped that each individual stood out clearly and distinctly, the effect much exceeding that of the packing method of grouping so often adopted, as if to hide the defects of the plants, and which is certainly not conducive to high-class culture. The groundwork of Mr. Woodcock's group consisted principally of *Adiantums* and *Selaginellas*, amongst which the flowering foliage plants were so arranged so that each could be seen in its entirety.

The principal exhibitors for competition were Messrs. T. B. Hague, G. S. Stocks, J. Marson, F. Barnes, W. G. Cuckson, W. F. Singleton, A. Hill, A. Naylor, F. Revitt, Mallinson, H. S. Malton, H. T. Morton, J. Shipman, and H. Marshall.

HANDSWORTH FLORAL AND HORTICULTURAL SOCIETY.

AUGUST 26TH.

THE twenty-second annual Exhibition of the above Society was held on the date named. The weather was favourable, and this, together with the attractions offered (one of the principal of which being that Messrs. Fisher, Son & Sibray annually on this occasion throw open to the general public the whole of their extensive nurseries and glass houses), sufficed to bring to Handsworth immense numbers of people, principally from Sheffield, both by road and rail, the road during the afternoon reminding one forcibly of the road to Epsom on a Derby Day, so great was the crowd. The balance to the credit of the Society at its bankers, which was last year much enlarged, will we imagine be this year even more so, owing to the immense number who passed through the turnstiles from four o'clock until half-past five.

The Exhibition filled three large marquees, the principal one being an immense circular tent, in which the large groups occupying a space of 400 square feet each and open to all England were arranged. In this class there were four competitors, and an equally favourable position was secured for each by enclosing a circular space of 1600 feet around the central pole, and dividing this space into four equal portions by cords stretched at right angles across this space equidistant apart. The first prize, £20, was

well won by Mr. S. Thacker, Minerva House, Nottingham, with a very chaste and remarkable arrangement, differing most materially from the stereotyped mode of grouping with flowering and foliage plants and Maiden-hair Ferns. The whole of his floor space was formed into a series of mounds, hills, and banks by rough wooden platforms and supports, the intervening spaces forming miniature nooks and dells, the whole of which, with the wooden arrangements forming the hills were closely surfaced over with freshly gathered dark moss, similar to that which is used by exhibitors of *Roses* for surfacing their show boxes. Out of this moss surfacing sprang all the plants used, the pots being entirely hidden thereby. Towards the back of the group and overhead towered some lofty Palms, and underneath these as well as around the front was a great variety of flowering and foliage plants, so arranged that each plant stood out distinctly from those surrounding it, and maintained its own individuality, being well thrown up by the moss groundwork. Around the front edge such choice and small plants as *Anacochili* and *Nertera depressa* full of berries, between which were inserted small branches of dried ornamental grasses. The general effect produced was remarkably effective, added to which the arrangement possessed the merits of novelty, originality, and correct taste. Great difficulty was experienced in the evening in getting sufficiently near to see it satisfactorily owing to the crowd all the time gathered around it. Most excellent groups were arranged in the usual way, and were shown by Messrs. Hiram Shaw, nurseryman, Richmond, and B. Crossland.

Leaving the groups, the next most meritorious feature in the Exhibition was the collection of fruit (eight varieties), which were shown in the same tent on tables around the sides. The competition in this class was very keen, and some truly grand fruit was staged. Mr. E. Gillman, gardener to the Earl of Shrewsbury, Ingestre Hall, Stafford; Mr. T. Edward, gardener to the Duke of St. Albans, Bestwood Lodge, Notts; and Mr. G. Ward, gardener to T. Oakes, Esq., Riddings House, Alfreton, were first, second, and third respectively. Mr. Gillman's first-prize collection was superb throughout, and consisted of black and white Grapes, a Pine, Peaches and Nectarines, a Melon, Figs and Apricots. Such Barrington Peaches for size and colour as those in this collection have rarely been excelled. Some wonderfully fine bunches of Muscat Hamburg Grapes were exhibited by Mr. G. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle.

In the open class some magnificent *Roses* and *Dahlias* were shown, the former by Mr. R. Proctor, Chesterfield, and Mr. H. Frettingham, Beeston, Notts. A great falling-off was noticeable in quantity and quality of the exhibits in both the gentlemen's gardeners (local) and amateurs' tents, owing mainly to the prizes hitherto given in these sections having this year been greatly reduced in order to increase those in the open class for the large groups, and for the collections of fruit.

As before stated, the nurseries of Messrs. Fisher, Son & Sibray proved a great source of attraction during the afternoon, and were in most beautiful order throughout. Several large span-roofed houses filled with all the newer varieties of Zonal *Pelargoniums* and Tuberous *Begonias*, full of bloom, were especially gay, as also was another house, the roof of which was almost covered by a very large plant of their celebrated free-flowering variety of *Stephanotis floribunda*. The plant was quite covered with strong trusses of its snowy blooms, and excited the admiration of all who saw it. In the Orchid houses a goodly number of species and varieties were blooming; but one that especially attracted my attention was *Miltonia virginialis*, a most charming form, not often seen. The whole flower, which is equal in size and stoutness to the best forms of *M. spectabilis*, is of the purest waxy white, with the exception of a little carmine markings in the throat.

SANDY AND DISTRICT HORTICULTURAL SOCIETY.

THE annual Show at Sandy has now become so popular and permanent an institution for the counties of Beds, Cambs, Hunts, and North Herts, that nothing but a very hostile season and piteous weather indeed could prevent its material success. The display on Friday last was to some extent contracted in quantity and depreciated in quality by the long-continued drought, and the currently expected rain which usually falls on the day preceding the Show, and which on this occasion, true to expectations, thoroughly saturated the sward in the pretty park of Sandy Place, than which a more suitable spot for an exhibition could hardly be found, but as the soil is porous and quickly absorbs moisture, little disadvantage accrued, although it was sufficiently warning in its character to influence the attendance of distant visitors.

The horticultural show was, however, quite equal to the average of its predecessors, the competition in many cases being severe. The Poultry Show, which is always an important adjunct of these gatherings, was on this occasion an increased and unqualified success, and on the morning of the Show, the clouds having rolled by; the hopes of the Committee were sufficiently verified.

As might be expected, the chief falling off in the horticultural department in this sandy and chalky district was in the vegetable department which showed a marked deficiency in quality to those at the great Shrewsbury Show the previous week, the Potatoes especially lacking that combination of size and smoothness which is conventionally required of a show Potato, but which the appetite of the consumer does not always appreciate unless accompanied by a digestible carcase; and although a good coat may not always be characteristic of its wearer, a quarter of an inch of soil attached to the skin of a Potato neither improves the appearance nor the quality of the vegetable, nor adds to the neatness of an exhibition table. It does, however, frequently conceal blemishes and defects from the scrutinising eyes of the judges. Some specimens in the market gardeners' tent at Sandy set up in this rough-and-ready mode greatly outraged the required neatness of the display, and threw uncertainty on the decision of the Judges of this useful vegetable. Fruit was an average display, the collections, especially those from Warden and Houghton, being very fine.

Plants were good, and but for a railway breakdown, which shut out one unfortunate exhibitor, would have made a grand display; as it was, the effect in the plant tent was spoiled by an important position being filled with plants of much smaller proportions than the collections adjacent. The cut flower department was well furnished, and although the queen of flowers had for her champions the redoubtable growers Messrs. G. Paul and Son, House, Prince, and Burrell in the dealers' class, it was difficult to

select a single good average show Rose from all their stands. Perhaps the best "set up" was that by Mr. E. B. Lindsell of Bearton, Hitchin, in the amateurs' class. Dahlias, although not numerous, were represented by unusually fine stands from Mr. Petfield, gardener to G. Thornhill, Esq., Diddington, Hunts, who completely distanced the great Cheshunt and other growers, and should Mr. Petfield show his colours at the National this week it is not improbable that he may be in the van. Only one competitor put in an appearance in the open class for twenty-four *Gladiolus*—Messrs. Burrell and Co., of How House Nurseries, Cambridge—but their stand would have been a match for the famous Scotch growers from Gourich, shown last year at South Kensington. Asters, although better than last year, were not fully represented in colour. Zinnias not nearly so fine, but Marigolds, especially African, were, as usual, very well shown here.

The following were amongst the chief exhibits and awards:—

PLANTS.—For ten stove and greenhouse plants in flower, distinct, open to all, Mr. Jas. Cypher, Exotic Nurseries, Cheltenham, was first with a good selection from the many fine plants he has been able to produce this season. He had a grand specimen of *Phenocoma prolifera* Barnesii, 5 feet in diameter, and a *Rhododendron* Duchess of Edinburgh, bright scarlet in colour. Mr. W. Rabbitt, gardener to General Pearson, C.B., The Hazells, Sandy, an able local exhibitor, came in a good second, one of his most effective specimens being *Impatiens Sultani*. Mr. F. Mould of The Nurseries, Pewsey, Wilts, who was but little in rear, was placed third. For six stove and greenhouse plants in bloom, distinct, open to all except nurserymen, Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, Hunts, was first with an excellent and well grown lot in fine flower. *Dipladenia insignis*, *Bougainvillea glabra* being conspicuous. For six foliage plants in the same division, Mr. G. Claydon, gardener to A. H. Arkell, Esq., Woodbury Hall, was first, having *Curculigo recurvata variegata*, *Dieffenbachia Bausei*, and *Caladium Bellemeyi* in fine condition. The first awards for six stove and greenhouse and for four British Ferns fell deservedly to Mr. T. Tillbrook, gardener to Bateman Brown, Esq., Houghton, Hunts. For six *Coleus* Mr. Rabbitt was first, his most taking plant being Lord Chas. Beresford. Mr. Rabbitt was also first for twelve well-flowered Zonal Pelargoniums in the open class. In the amateurs' class Mr. F. Cinder of Brooke House, Biggleswade, gained first place with a creditable collection of eight plants.

CUT FLOWERS.

In the open class Mr. J. House of Eastgate Nurseries, Peterborough, was first for forty-eight blooms, not less than twenty-four varieties, with bright, but otherwise seasonable flowers; Marie Van Houtte, Alfred Colomb, and Exposition de Brie being flowers approximating most to the requisite standard. Messrs. Paul & Son, the Old Nurseries, Cheshunt, were second, having Marshal Wilder and Pride of Reigate, both giving promise of being good, new, as well useful autumn flowers. Mr. G. Prince of Oxford was not a far distant third. In the open class, dealers excluded, Mr. E. B. Lindsell, Hitchin, was deservedly to the front, the Rev. W. H. Gall, Hitchin, following second. The splendid first prize stand of twenty-four *Gladiolus* from Messrs. Burrell & Co., which was one of the sights of the Show, was made up of grand spikes with large and beautifully coloured blooms of the following varieties—*L'Africaine*, Baroness Burdett Coutts, a telling rose lake; Victor Jacqueminot, Leda, Mahel, Horace Vernet, *L'Unique*, violet; Hesperide, Colhert, Addison, La Perle, Carnation, Le Phare, Celestine, Leandre, Jupiter, Condé, Amalthée, Rosita, Rossina, Madame Desportes, Archduchess Marie Christine, A. Brogniart, and Lapepede. For six *Gladiolus*, amateurs, Mr. P. Mayer was first, and Mr. Apthorpe, Cambridge, second. In the open class for twenty-four Show Dahlias, Mr. G. Petfield was *facile princeps* with magnificent blooms both in size and quality, the following being especially striking—John Henshaw, Wm. Rawlings, Mrs. Gladstone, white; Prince Bismarck, Jas. Veitch, Herbert Turner, pure white; Imperial, Mrs. Harris, and Goldfinder. Messrs. Paul & Son, who were second, had good but smaller blooms. For twelve Show Dahlias Mr. Petfield was again first, Mr. W. H. Apthorpe second; and for six Show Dahlias, in the amateurs' class, Mr. R. Clarke, Cambridge, was first. The principal prizetakers in Asters were Mr. Petfield, Mr. Tillbrook, and Mr. G. Taylor, Eynesbury; Mr. P. Meyer coming first with fine African Marigolds, and Mr. A. L. Clarke for Zinnias. Messrs. Burrell & Co. had a fine stand of cut herbaceous flowers; and from Mr. E. Edwards of Leighton Buzzard came two most attractive stands of double and single hybrid Begonias, not for competition. Miss H. L. Aslett of Woodbury Hall decorated a table very tastefully, for which she took the only honour, Mr. W. Rabbitt having in the same tent first prize for a very artistic model garden, the leading feature being a well proportioned scroll carpet of dark *Coleus* edged with blue *Lohelia*, the toning of the interstices with flatter colours being very effective.

FRUIT AND VEGETABLES.

For a basket or tray of fruit, eight distinct kinds (Pines excluded), Mr. Allis, gardener to Major Shnttleworth, Old Warden, Beds, received leading honours with an excellent stand containing Black Hamburg and Buckland Sweetwater Grapes in beautiful colour and finish; also Melon, Peaches, Nectarines, Apricots, Figs, and Cherries correspondingly good. Mr. Tillbrook's collection, which came a very close second, contained fine Madresfield Court and Muscat of Alexandria Grapes—the latter, however, not quite finished. Mr. White, gardener to Captain Stanley, Longstone Hall, Cambs, was here also a good third. Grapes were mostly good, but not equal to some hitherto shown at Sandy, the principal prizetakers being Mr. Allis, Mr. Tillbrook, and Mr. W. H. Murfin, Stanghton, Hunts. By far the best Melon—an unnamed scarlet-flesh variety—came from Mr. F. Conder. Peaches, Nectarines, Plums, Pears, and Apples were shown in considerable quantity, but call for no comment. For a basket of twelve varieties of vegetables, Mr. C. Ellis, gardener to Mrs. Orr, Pemherley, Bedford, was first, having Sutton's Reading Perfection Tomatoes (very fine), Evolution Peas, Cauliflowers, Girtford Giant Runner Beans, and International Potatoes, all conspicuously good. Mr. G. Vines, gardener to H. Thornton, Esq., Kempton Grange, Bedford, securing second honours with an almost equally fine collection. For six varieties in the amateurs' division, A. G. Munro, Esq., Kempston, was first with a very attractive tray. The first prize for six varieties of Potatoes went to Mr. P. Meyer, the sorts being Schoolmaster, Prime Minister, Chancellor, Reading Russet, Vicar of Laleham, and Mr. Breesee. The leading prize for twelve white kidney Potatoes was awarded

for a dish of Recorder, which is said to be a promising useful Potato, Beauty of Hebron coming in as the best coloured kidney, Schoolmaster as the best round white, and Vicar of Laleham as the best round coloured. In the market gardeners' division, Mr. R. M. Simpson, of the Three Counties Asylum, Arlesey, Beds, was first, having good samples of white Beauty of Hebron, Chancellor, Snowdrop, Sutton's King, Beauty of Kent and Adirondack. Onions, notwithstanding the drought, were in all classes better shown than many anticipated. Tomatoes were well represented, the leading prizes going to large samples from Mr. White and Mr. Apthorpe; but the dish of Reading Perfection, which seems to be a high quality fruit, was most admired for colour and beauty. Mr. Laxton, of Bedford and Girtford, showed, not for competition, fine specimens of his Sandy Prize White Spanish Onion, Girtford Giant Beans, and white Beauty of Hebron Potatoes, cooked and uncooked. The Judges thought so highly of this variety that a special first-class certificate was awarded to it, the flesh of the cooked tubers having a snow white appearance and the quality very good. It is also claimed for the Potato that it is not only early and a great producer, but cooks well, both when fresh lifted and quite late in the following spring.

Some irregularities again occurred at the close of the Show, several exhibitors being unable to secure their productions, and it is to be hoped that in future the Committee will exercise rigid discipline at clearing time, as nothing causes more mortification to an exhibitor than the loss of his cherished productions, and a continuation of such undetected pilfering must ultimately tend to injure the Society and to counteract the well-intended efforts of the Committee.

THE DUNFERMLINE AND WEST OF FIFE HORTICULTURAL SOCIETY.

THE fifth annual Exhibition of this flourishing Society was held on Friday and Saturday, the 28th and 29th August, in most favourable weather. While the grounds are in every way suited for such a gathering, it seemed to be generally felt that the change from the situation from Pittencrieff Glen of former years had sacrificed many of the external attractions which aided in making the annual gatherings of the Society so interesting and enjoyable to the ordinary visitors. Of the Show as a whole, it may be said to be the best which the Society has yet held, and that it reflected great credit upon the exhibitors and members of Committee, evidencing, as it did, great cultural skill and taste in arrangement.

Most important of the competitions were the tables of stove or greenhouse plants arranged for effect, Mr. Jas. Ferguson, Brucefield, securing first place with a very fair lot tastefully arranged; the second place being awarded to Mr. A. White, gardener to Dr. Dow, New Row, for a table, which but for a paucity of plants in flower, might well have been placed first, W. Cruden, gardener to J. Hunt, Esq., taking third prize. For six stove or greenhouse plants, W. Cruden was first, Dr. Robt. Speirs, St. Leonards, being a close second.

Fruit in the gardeners' section was a notable feature of the Show, making an excellent display both as regards the quantity and the quality of the exhibits. Mr. H. McDermont, Alva, staging grand examples in his first-prize collection of eight sorts, as did also Mr. D. Howie, Duninmarle, in four bunches Grapes, four sorts; Messrs. Lumley, Broom Hall; Ovens, St. Margaret's; Cruden, Pittencrieff; Garret, Lassodie House; and D. Campbell, Keavil, being the other principal prizetakers for fruit.

Vegetables and cut flowers were, as usual at this Society's Show, a numerous and excellent display, affording evidence of the great attention paid to their culture in this district, amateurs vying with the gardeners in the excellency of their exhibits. Among the extra exhibits was a table of stove and greenhouse plants from the garden of R. Donald, Esq., Provost of Dunfermline, and the respected chairman of the Society, which was greatly admired by the numerous visitors, and a collection of Carnation blooms from Mr. J. Paterson, gardener, Lorrie House, among which a seedling of a delicate shade of pink, named Mrs. Erskine Wemyss, commended itself so much to the Judges as to receive the award of a certificate of merit.

The Committee had the enterprise to engage the celebrated band of the Royal Scots Greys, which discoursed an excellent programme of music to an appreciative and enthusiastic crowd of listeners upon both days.

SHERBORNE.

THE twenty-fourth annual Exhibition of this Society was held as usual in the picturesque grounds of Sherborne Castle under most favourable circumstances. Stove and greenhouse plants were well represented, Ferns and Mosses abundant and fine, and fruit much better than usual. Vegetables were remarkably good.

For twelve fine-foliaged plants Mr. T. Wilkins, gardener to T. M. Guest, Esq., Inwood, was a good first, having in his group extra fine plants of *Croton undulatus*, *Pandanus Veitchii*, and *Anthurium Warocqueanum*; and Mr. W. Appleby, gardener to T. W. Bide, Esq., Yeovil, was placed second for a creditable lot of plants. Mr. Wilkins was first for a miscellaneous collection of plants in or out of bloom, showing several choice specimens, the second prize going to Mr. G. Runacles. For a group arranged for effect Mr. G. Anthony, gardener to T. Moore, Esq., Yeovil, was first with a fairly good selection, and the second prize was withheld. In the class for Ferns and Mosses Mr. J. Crump, gardener to W. Neal, Esq., was easily first, having in his collection grand specimens of *Microlepia hirta cristata*, *Adiantum farleyense*, and *Davallia Mooreana*. For Begonias, Mr. J. Bowles was first with medium-sized profusely flowered plants, and Mr. J. Copp was second. Fuchsias were scarcely so good as usual, and with these Mr. Harriman, gardener to G. Whithy, Esq., Yeovil, was first, and Mr. Appleby second.

The good-sized tent was wholly given up to the display of fruit and vegetables. There were six entries for the silver cup, value £5, offered by Mr. Wingfield, Digby, for eight dishes of fruit, and in each case there were many excellent dishes shown. Mr. Pulman, gardener to R. B. Sheridan, Esq., Frampton, was the winner, his collection including good stands of Buckland Sweetwater and Black Alicante Grapes, Hero of Lockinge Melon, Dymond Peaches, and Williams' Bon Chrétien Pears. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport was a good second, several dishes in his really good collection, with the exception of Muscat of Alexandria Grapes, being somewhat wanting in colour. Mr. C. Crossman, gardener to

J. Brutton, Esq., Yeovil, was third; and Mr. C. Perkins, gardener to C. H. Hambro, Esq., Milton Abbey, fourth. Several good stands of Black Hambro Grapes were shown, the first going to Mr. W. Iggulden, gardener to the Earl of Cork, Frome, for medium size, compact, and well-finished bunches; and Mr. Pulman was second. The last named was first with Muscat of Alexandria, and Mr. J. Lloyd second, both having well-finished examples. In the class for any other black variety, Mr. Crossman was first with Black Alicante in good condition, and Mr. Davidson, gardener to Lord Wolverton, Iwerne, was second with the same sort very well finished, only somewhat overthinned. Mr. Davidson was first in the corresponding class for white varieties, having Buckland Sweetwater large in bunch and berry and beautifully coloured, and Mr. Crossman was second with good examples of Waltham Cross. Mr. Pulman had the best Peaches, Dymond in good condition, and Mr. Iggulden was second with good Bellegarde. With Nectarines Mr. G. Daley was first with Pitmaston Orange, and Mr. Lloyd second with Lord Napier, both having good dishes. Melons were staged in good numbers, but the quality was very deficient in most of them. Mr. C. Chedzoy was first with Webb's Woodfield, a handsome variety with deep green melting flesh, and Mr. C. Perkins was second with Golden Ball. Mr. Brooks took a first prize for a good Smooth Cayenne Pine Apple, and Mr. Iggulden was second.

For a collection of twelve sorts of vegetables Mr. Wilkins was first, his collection including fine Autumn Giant Cauliflowers, Snowdrop Potatoes, and White Celery. Mr. G. H. Copp was a good second. With eight varieties Mr. A. Philpott, gardener to J. Parsons, Esq., Sherborne, was first, and Mr. J. A. Witherington second; both have generally good lots of vegetables. Mr. G. W. Copp was the principal prizewinner in the classes for single dishes. The amateurs also had a fine lot of fruit and vegetables.

Cut flowers were a grand display, consisting of Roses, Dahlias, Asters, and Gladioli, and were shown in fine condition. Mr. S. P. Budd of Bath, Messrs. Keynes & Williams of Salisbury, and Mr. J. Nation of Staplegrave, taking prizes in the respective classes for the two former; Mr. J. Harris and Mr. Iggulden for stands of cut flowers in bunches; and Mr. M. Coombe, Marston House Gardens, and Mrs. N. Harriman, Chard, for epergnes. In the class for ladies only Mrs. N. Harriman was first for bouquets.

Messrs. Lucomb & Pince's exhibits, not for competition, attracted great attention, notably their group of plants at the entrance of the flower tent, containing some well-grown specimens of *Dipladenia Brearleyana*, *Allamanda nobilis*, and also a group of choice Orchids and other interesting plants.

Mr. G. F. Stokes is the Secretary, and he, with the great assistance of Mr. W. G. Pragnell and other members of the Committee, arranged everything most satisfactorily.

READING SHOW.—AUGUST 27TH.

THE Forbury Gardens, Reading, together with the adjoining Abbey Ruins, is a most interesting resort both for the townsfolk and visitors. For many years also the garden has been very tastefully planted and kept, rendering it very bright and cheerful during the summer months, and this year its appearance is fully equal to the best of previous seasons, a fact which is highly creditable to the skill of Mr. G. Phippen, who has succeeded his father in the management. A better position could not be chosen for the Show than the Abbey Ruins, and it is pleasing to be able to record that in number and quality of exhibits, especially in the fruit and vegetable departments, the Show was all that could be desired.

The plants were not so numerous as usual, but there were sufficient to furnish the tent, the large groups and the Fuchsias adding considerably to the effect. Mr. Parham, gardener to H. J. Simonds, Esq., Caversham, was the chief prizetaker in all the leading classes, and showed some remarkably good plants. Mr. James of Lower Norwood, Mr. Sumner, gardener to J. H. Millard, Esq., and Mr. Mould secured the other chief prizes in these classes. Cut flowers were capably represented, but the collection of Dahlias from Messrs. J. Cheal & Sons, Crawley, Sussex, were exceedingly fine and well merited the numerous honours they gained.

Fruit was very well shown, and in this respect the Exhibition was one of the best held at Reading for some time. Grapes were especially good, the Black Hamburgs being finely coloured, well-formed bunches in nearly every instance, but the leading exhibitors in the class—Mr. Ashby, gardener to W. Fanning, Esq., Whitechurch; Mr. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh; and Mr. Cakebread, gardener to Sir P. Rose, Penn—contributed admirable examples of this useful Grape. In the any other black variety class, Mr. Ashby was again the premier exhibitor with magnificent bunches of Madresfield Court, that attracted the admiration of all who saw them. They were large, of fine symmetrical shape, and the berries were clothed with a dense handsome bloom. Muscat of Alexandria was not quite so satisfactory amongst the white Grapes, but in the other variety class Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, was awarded first honours for grand bunches and berries of Buckland Sweetwater, beautifully ripened. Peaches were handsome, mostly very large, but the prizes went to the best-coloured fruits of *Violette Hâtive*, *Grosse Mignonne*, and *Bellegarde*, from Messrs. Bowerman, Ashby, and Pound, who were the successful exhibitors amongst twenty-one who entered. There were fifteen dishes of Nectarines, Mr. Balchin, gardener to B. Simonds, Esq., Reading, leading with Elruge. Mr. Howe was second with Pine Apple, and Mr. Osborn, gardener to the Rev. H. Golding Palmer, Sonning, was third with Pitmaston Orange, all very fine fruits. The collections of fruit included some good dishes of Plums, Apricots, Peaches, and Nectarines, but the Grapes were weak in most cases. Mr. Howe, gardener to Sir R. Sutton, Bart., Benham Park, was an easy first, followed by Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End, and Mr. King, Devizes Castle Gardens. Figs, Plums, Apricots, and Apples were all strongly shown, and several of the exhibitors already named took the leading honours.

Messrs. Sutton & Sons' prizes for a brace of Melons brought about twenty competitors, and the Judges had much difficulty in awarding the prizes. Ultimately, however, Mr. Howe was placed first with handsome fruits of Hero of Lockinge; Mr. Ross was second with General Gordon, a green-flesh seedling from *Semper Fidelis* and *Nowton Court*; Mr. Turton was third with Hero of Lockinge, and Mr. Howe fourth with Benham Beauty. Messrs. Carter & Co.'s prizes for Melon Blenheim Orange were won by Messrs. Lockie, Howe, and Balchin with good fruits.

Vegetables were of praiseworthy quality in all the classes, and the competition was very keen. Messrs. Sutton's prizes for six kinds of vegetables brought eighteen exhibitors, the prizes being secured by Mr. Richards, gardener to Earl Normanton, Somerley Park, Ringwood, Hants, Mr. Lye, Mr. Kneller, and several others whose names we did not obtain. Messrs. Webb's prizes for six kinds of vegetables brought fifteen competitors, Mr. Bowerman, gardener to C. A. Bovill, Esq., Hackwood Park, Mr. Elliott, Mr. Lye, and Mr. Lockie securing the prizes. Messrs. Sutton also provided a class for nine varieties of Potatoes, in which there were nine entries, Mr. Hott, gardener to Major Allfrey, Mr. Elliott, gardener to J. Hibbert, Esq., Braywick, Mr. Ross, and Mr. Lye being the successful exhibitors in that order.

EVOLUTION AND CHANCELLOR PEAS.

HAVING grown thirty-three different sorts of Peas in my garden this year, and seeing on page 154 Mr. T. Record gives an account of the late bearing qualities of that very good Pea G. F. Wilson, I wish to direct attention to Evolution as a late bearing variety. I sowed the seed on the 12th of February; the first gathering of Peas was made on the 20th of June, and the last dish I have gathered was on the 17th August, and the Peas are still bearing fine young pods, of which I enclose you one. Evolution is the longest bearing Pea that I have ever grown, I think its name ought to have been Everlasting.

I also see, page 158, that Messrs. Webb & Sons have sent you a sample of their new Pea Chancellor, and you are not able to give an account of its quality through the pods being too old, Messrs. Webb kindly sent me some of the Chancellor seed to grow, and I have had several cookings from the plants. They are very sweet and an excellent green colour when cooked. This variety is a robust grower and a large cropper, the pods coming nearly all in pairs.—HENRY MARRIOTT, *Prospect House, Skirbeck, Boston*.

[The specimen of Evolution received is remarkably fine, the growths vigorous, and as fresh as in June, bearing a half-grown pod, with others just set and flowers expanding.]

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 3.

SUCH a reproduction of a part of the City tenanted by the Londoners of bygone times as we see in the International Exhibition of Kensington, is rendered comparatively easy owing to the existence of some houses of old London and abundant drawings of others that have vanished; but what can produce for us a garden exactly representing one of those in which the wealthy citizens took delight when, after the Wars of the Roses, a taste for flowers began to be developed in England? If a Tudor philanthropist, for instance, could have secured to London in perpetuity the open space called Goodman's Fields as it was in the sixteenth century, how interesting it would have been to look upon, and what a boon to the inhabitants of Whitechapel. But Goodman's Fields, though the central portion is marked as an open space on maps of thirty years since, is now covered with streets of small dull tenements. There is nothing to remind us of Goodman, whose farm this was in the days of Stow, before the citizens rented the fields to turn them into garden plots, and both flowers and trees are scarce hereabouts. Only Prescott Street, formerly, so it is said, Peascod Street, is suggestive of some early cultivator of a vegetable chiefly grown in convent gardens during the Middle Ages until the Flemings brought Peas into general demand.

Very few are the by-passers who think of the Minorities and its neighbourhood as once the demesne of the Nuns of St. Clare, nor has Royal Mint Street any of the aroma of the fragrant herb that at one time conferred upon it the name of Rosemary Lane. It does not appear, however, that Rosemary, so much esteemed by our ancestors, was grown there, but only vended along this lane with other herbs. Though now a locality of noisy trades and busy factories, varied with railway lines and depôts, it is possible to find about this part of eastern London open places, where plants and flowers, if seemingly straitened for air, do tolerably well under the circumstances of their life. In the unsavoury Royal Mint Street itself, originally Rosemary Lane, is a largish space, formerly an outlying churchyard of Aldgate, which belongs to the Metropolitan Board of Works, and at present lies barren and unpromising, yet which, by a moderate outlay of money and suitable management, might be made to yield both foliage and flowers. The honourable Board hoped, it seems, to utilise the ground by letting it upon building leases, but a recent Act prohibits, fortunately, any further erection of houses upon disused churchyards. Let us hope, then, that what is now verily a "a place of potsherds" may ere long become a pleasant garden, where some corner might be allotted suitably to the historic Rosemary.

Proceeding from the above into Cable Street, which continues the line of road, we reach the old churchyard of St. George's in the East, one affording a good example of what may be done within London limits to make an open space look always green and cheery. About nine years ago an arrangement was carried out by the local authorities, and the greater part of the burial ground, with that also of a Wesleyan chapel at its rear, were laid out as a flower garden for the public benefit. There is a caretaker beside the gardener and his assistants. The extent is probably two acres. The ground might be supposed to be larger, perhaps owing to the mode of arrangement, most of the shrubs being massed along the sides, so that the view is only interrupted by an occasional tree that has been left amongst the glass plots and flower beds. In a dry hot July we could scarcely expect to find trees and shrubs of London growth devoid of a tint of brown, but on our visit here we thought the foliage looked com-

paratively fresh for the time, and the grass was bright green through assiduous watering and clipping. Indeed, without constant care such plots will not flourish in London or in any large town, a fact which appears to be sometimes forgot by the managers of our metropolitan parks. Juveniles are rigorously excluded from the parterres in this garden, to tread or roll upon which would much delight them no doubt, and we suppose that, within the limited area, a piece of turf could not be set apart for their special benefit. Upon one of the grass plots it was curious to observe a thick growth of Milfoil or Yarrow, a wild plant which was not probably introduced with grass seeds or sods, but an old tenant of the place not easy to eradicate, yet, weed though we call it, one possessing an interesting folk-lore. Beds of flowers are formed here and there within the grassy spaces, and are thus effectually protected from the meddlesome fingers of adults and juveniles, but we own we cannot see much advantage to visitors from a floral display which has to be surveyed at a long range. And it would appear that the "touch-not" regulation is so strictly enforced in some of these public gardens as to make strollers fearful every moment lest they should incur a penalty. Possibly this is necessary, since the average English mind so closely connects the verbs "admire" and "handle." We were amused at the outspoken admiration of a corpulent dame who was evidently doing the gardens with a purpose to see all that there was to be seen. Her standard of excellence was Victoria Park, and she pronounced this renovated churchyard nearly as good as that, though it might not be as large.

The flower beds generally contained a fair average show of the plants we usually meet with—Pelargoniums, Pyrethrums, and Calceolarias being conspicuous. Fronting some of the beds where shrubs formed the background, Heliotropes, Lobelias, and Petunias, interspersed with Carnations, produced a pleasant effect, some annuals appearing amongst these, such as Mignonette. Our experience of this old London favourite has been that it comes up very well year by year if allowed to sow itself, otherwise there is some little difficulty in raising it from seed in the open air. Phloxes, as we commonly notice them in such London gardens as this, do not give one a favourable idea of the group; the reason is probably this, they are plants requiring peculiar treatment, which the gardeners have not time to bestow if they possess the knowledge. Several of the beds had an edging of the familiar red Daisy of our gardens behind an edging of evergreen, but the Daisies had gone out of bloom. It would have been strange had we missed the Elder, so seldom absent from a London array of shrubs, and a species somehow liked by cockneys; and the Poplar, as shrub or tree, is also popular. One not very aged Poplar, amongst a few others we noticed, presented a curious appearance owing to the numerous side shoots which almost hid the parent stem. Some space was allotted to Chrysanthemums, but it is small now; probably more will be given hereafter to a species offering so much variety, and which succeeds in London.

Water always draws the folk, especially in a dusty season like this, hence the rockery and pond had many visitors; the former was well planted, though we should have put in a greater number of semi-aquatic species and climbers. Speaking of climbers, why should not the winter-flowering Jasmine (*Jasminum nudiflorum*) be freely made use of to cover walls, railings, &c.? It would not suffer, we believe, from the smoky influences. Nor do we see the Clematis introduced very often for the same purpose, or to festoon an arch across a path. The juveniles of St. George's might have got up a butterfly hunt had such been permitted, for numerous specimens of the garden white were disporting themselves on the flowers, and we ventured to remark to the gardener that to see these on the wing in the heart of London was a pleasing and interesting sight. But he was not sympathetic, and assured us that they were "a nuisance," crediting the insects, perhaps, with more mischief than can rightly be laid to their charge. They were, we presume, intending to deposit eggs upon the *Tropæolums*, but we have taken the caterpillars in the act of feeding on *Pelargoniums* or *Geraniums*.

Near the above are two smallish squares which are not open to the public, yet must be of some benefit to the neighbourhood, and their clustering trees are suggestive of rural shades. Wellclose Square was doubtless named from some ancient well, and Poplars still flourish there, some of them old trees that have been planted. A grove of closely set Elms occupy a part of the space, and part is grass, with a few scattered flowers, amongst which the Marigold is conspicuous. Prince's Square, within which is a Swedish Church, where lies interred the eccentric Swedenborg, has its Elms and Planes, fewer trees, but a better display of flowers of the hardy sort.—J. R. S. C.



KITCHEN GARDEN.

TURNIPS.—These are amongst the most useful of all winter vegetables. The majority of cooks call for them daily, and a constant supply should be maintained; indeed, the Turnip place in the scullery should never be allowed to be empty. Late crops should have every attention. Thin the plants out to 15 or 18 inches apart; hoe amongst them afterwards, and keep them free from weeds. Swedish Turnips are hardier and easier kept during very

severe weather than the white sorts, and many persons who are not bad judges prefer them. Where there are signs that the supply is likely to be short sow more seed at once. We find for very late sowing the very early sorts, such as Early Milan, turn in wonderfully quick, and seed of it sown now will produce nice sized bulbs by November, but they require to be used soon afterwards, as they are too tender to stand throughout the winter. They might, however, be stored. Summer Turnips have been very good this year; they swelled well and were clean and large. During the hot dry weather some of them became hot and stringy rather too soon, but sowing often and in small quantities usually obviates that difficulty. Sutton's Selected Snowball has been very good this summer.

AUTUMN-SOWN ONIONS.—These are a most important crop; without them we should frequently be without Onions in April, May, and June, and those who grow for exhibiting always find the autumn Onions valuable. In some instances they are sown before this time, and many are showing through the ground now; but very early-sown plants are not always the most profitable. The great failing amongst the class generally is their disposition to run to flower early in spring before any bulbs have been formed. We know of whole crops having been lost in this way, and early sowing is the main cause of it. Last year we had not one seeding plant in our garden, and we grow thousands. The ground can hardly be too well cultivated and manured for this crop, and the position should be open and sunny. Lime, soot, or salt should be dug or forked in rather freely to keep away the grub, as prevention is always much better than cure, and easier too. The white varieties, such as The Queen or White Italian, are the first to become ready for use in spring, and a quantity should be sown. We find those not transplanted are the first to bulb. Trebons is excellent to sow now for exhibition purposes, and Webb's Improved Banbury sown at this time becomes fine about midsummer.

CAULIFLOWERS.—A sowing of Veitch's Extra Early should be made on a south border to supply plants for keeping through the winter and planting out in spring. A little seed of Veitch's Autumn Giant may also be sown, as this will succeed the early variety, and prove very useful, especially for exhibition, during the early summer months. Sow thinly; when large enough some of the plants may be taken up and dibbled into frames or under handlights to be safe in severe weather, and some may be left in the seed bed as a chance lot to stand the winter. Sometimes we have found these do admirably, but it is all a question of weather.

VEGETABLE MARROWS AND RIDGE CUCUMBERS.—These are now in full bearing, and producing more fruit than can be used. This is very liable to happen about this time, and fruits left on the plants not unfrequently stop the young crop from swelling. This may not be observed now, but the mistake will be found out in October when there are no young fruits to cut. Late fruits are always valuable, and by closely cutting off all full grown fruits at this time the young ones will form freely and swell until frost cuts them off. Close cutting is the secret of late fruiting.

MUSHROOM BEDS.—The present is a very good time to form these for producing a crop during November and December. Collect one or more cartloads of horse droppings; pick the rough of the straw out from them, and put the mass in some airy place to dry for a week or so, then mix it with about half its quantity of loam soil, and form into a bed. The bed should be from 15 inches to 18 inches in depth, and any width from 3 feet to 6 feet. The material should be trodden down very firmly. At first there will be a good heat in the bed, but if the manure has been properly prepared this will not exceed 90°, or thereabouts, and the spawn may be inserted. The spawn cannot be too good, and it should be broken into pieces about the size of a pigeon's egg, placing them about 3 inches deep and 10 inches apart. The manure may then be levelled down and made quite firm, afterwards the surface of the bed should be covered over to the depth of 2 inches of friable soil. This should be made quite level and be beaten smooth. If the position of the bed be such that the surface is likely to become dry, a layer of hay should be spread over it. As to the best place to form a bed, it would be a difficult matter to find a wrong one, as they will succeed in all kinds of sheds and outhouses as well as in the best Mushroom house.

TRANSPLANTING.—If any of the autumn-sown Cabbage are large enough draw them up and dibble them in their bearing quarters. Finish transplanting Lettuce and Endive, and should there be any winter greens crowded together thin them out and plant in empty corners, which are now more plentiful than they were some time ago. Sow a patch of an early kind of Radish, and see that the supplies for autumn and winter are ample. The first of the winter Spinach may be sown, keeping the rows 18 inches apart, and allowing it good soil that the leaves may become large and succulent.

FRUIT FORCING.

VINES.—Those intended for early forcing in pots should now be divested of all laterals close down to the cane or main buds, and in the case of their being still under glass no time should be lost in removing them to the front of a south wall in the open garden, where they must be well secured against injury from winds; and to prevent the roots becoming too dry, or those against the sides of the pots from being injured, some some litter or fern may be placed loosely about the pots.

Early House.—The permanent planted early forced Vines should be encouraged to go to rest by removing all lateral growths, care being taken of the old leaves, as they will help to feed and perfect the bunch producing buds. It will be necessary to give an abundance of air, or the lights may be removed if the weather be fine; but with the roots in a satisfactory condition the check following the removal of the laterals is

generally satisfactory in producing the desired effect—maturation and rest.

House Cleared of Fruit.—Vines that have been cleared of Grapes will need a thorough washing with a syringe or engine to cleanse the foliage from dust and red spider, and the laterals kept well in hand, unless the Vines have been heavily taxed in carrying a heavy crop, when a moderate lateral growth will promote root-action and have a recuperative effect upon the Vines; but the principal foliage must not in any case be interfered with by crowding, it being essential that they have full exposure to light and air, as upon their continuance in health depends the perfecting of the fruit-bearing buds. A moderate amount of moisture in the border is absolutely necessary, but it will not be necessary to have them more than healthfully moist, but anything like dryness should not be allowed. If the Vines have not the wood as ripe as desirable, allow the temperature to rise to 80° or 85° by day, with early closing, and throw the house open by night. Houses of ripe Hamburgs, &c., will be better with some slight shade for a few hours on bright days, as, independently of the berries losing colour, the strain of a heavy crop taxes the energies of the Vines, and the shading lessening evaporation reduces that strain considerably.

Muscat and Winter-hanging Grapes.—These are or ought to be of a degree of ripeness admitting of a reduction of fire heat and a lower temperature through the night, which applies to houses that were helped forward with a little fire heat in the spring, but where this was neglected from parsimoniousness, trusting to sun heat, the Grapes will not be in a condition to keep well. The Muscats will not have a fine amber colour, nor the black kinds well coloured or ripened, and in their case the fires will have to be kept going, which, though necessary, is not favourable to the finish or keeping of the Grapes. Whatever fire heat is needed should be applied chiefly in the daytime, with a circulation of air constantly, but the Vines should be rested at night by turning off the heat, or so much of it as will allow of a decline to 65° or even 60° on cold nights.

Houses of Late Hamburgs.—The Grapes are colouring fast, the bright weather having forced them forward with greater rapidity than is desirable, especially where they have to be kept for use in December. When this is the case a good spread of foliage for the next month or six weeks will be of great service in delaying the ripening and preserving the colour of the fruit. As days decrease in length, and there is danger to be apprehended from damp, the steady reduction of the laterals and increased ventilation, with gentle fire heat, will be advantageous to the Grapes and the ripening of the wood. As the season advances the Grapes should be cut with wood and placed in bottles of water on a shelf or elevated position in a house in which the late thick-skinned kinds are hanging, such as Lady Downe's, which require some time to mature after they are apparently ripe; but to succeed with late Hamburgs it is necessary to cut off all the largest shoots, depending on the medium-sized bunches for the crop, and well thin these to prevent the berries from binding. The Vines being cleared of fruit the spur shoots can be cut back to five or six eyes, and fire heat can be applied until the wood is thoroughly ripe. Perhaps there is no Grape so much esteemed as Black Hamburg late in the season, and those that can command these with Muscat of Alexandria at the dessert at the winter's festive season rank as first-class Grapeists.

CUCUMBERS.—Plants recently planted out will require treatment in accordance with the time when they are expected to bear fruit. If to produce a supply of fruit as soon as possible early stopping will be needed, commencing at the second or third wire of the trellis, which will cause fruit-bearing shoots to emanate; but in a majority of cases the object is to secure fruit in time to succeed those grown in pits or frames, in which case the plants may be allowed to grow until they reach the fourth or fifth wire of the trellis before being stopped, and all the fruit removed as it shows, and from the axil of each leaf will proceed a shoot or lateral, which should be allowed to grow until they nearly meet before they are stopped. This concentrates the vital energies on the development of leaves and wood which, being solidified by judicious ventilation and exposure to light, the plants are qualified to produce continuously a good supply of fruit during the winter and early spring months. Water must be applied somewhat sparingly until the plants have become well established, when with plenty of roots permeating the soil they will need more liberal supplies; but avoid over-watering and over-moisture as the greatest of evils, leading to soft growth, as only plants with thick leathery leaves and firm short-jointed wood are likely to endure the strain on them at a later period. The temperature should be kept at 65° at night and 70° to 75° by day from fire heat, with a rise to 80° to 90° from sun heat.

PLANT HOUSES.

Chrysanthemums.—Plants grown for producing large flowers must be examined at intervals of a few days, for the flower buds have commenced forming. The bud being produced now is what is commonly called the crown bud, and if well-developed flowers are required this bud must be taken. If the bud is perfectly healthy in appearance, the growths, as soon as they can be seen, should be removed from around it with the point of a sharp knife. All growths below should be removed from the axils of the leaves, so that the whole strength of the plant can be concentrated into the central flower that is left. If the bud is unhealthy remove all but one shoot, which will extend to 6 or 9 inches in length, according to the variety, and will produce what is termed the terminal bud. Three of these shoots can be left if several flowers are required from the plant or the shoot. The terminal bud differs from the crown bud in having other buds nestling close around it instead of growths. As soon as the

terminal bud has formed, all the other flower buds should be removed. If from six to twelve large flowers on bush plants are preferred to a greater number of smaller ones, they should be disbudded as soon as the crown buds make their appearance. All the plants required for yielding useful cut blooms, or for all ordinary forms of decoration, should not be stopped or pinched, but be allowed to branch naturally, and hundreds of useful small sprays of bloom will be the result, and these will be found much more serviceable for cutting than those of a larger size. The plants intended to supply large blooms must have a top-dressing of rich material to keep the roots active, and supply stimulants liberally in a weak state every time water is needed. The last applies to plants grown for decoration and cutting. Plants that have exceeded the length of their stalks are very liable to be broken during windy weather. The stalks should be lengthened to prevent this, or one or two ties cut during wind so that they can sway to and fro, which will prevent them from snapping.

Roses in Pots.—If Hybrid Perpetuals established in pots have not been repotted it should be done without farther delay if they need it, or they will not have time to become sufficiently established before winter. If the pots are already large enough turn the plants out and carefully remove about one-third of the old soil, retaining as many roots as possible, repotting them in the same size in a compost of good fibry loam, one-seventh of manure, and a little coarse sand, according to the nature of the loam. To this may be added one 6-inch potful of bonemeal to a barrowful of the compost, and the same quantity of soot. Those that do not require repotting should be examined to see if the drainage is sufficiently clean to act the part for which it is provided. From these a good portion of the old surface soil must be removed and top-dressed with the same compost, only one-third instead of one-seventh of manure may be used. After potting and top-dressing, as the case may be, the pots should be plunged and the foliage syringed twice daily.

Tea Roses.—Those intended for early forcing should also be repotted if they need it, or top-dressed, the same compost being used with the addition of a little leaf mould: this and the manure may amount to about one-third. Treat them the same as the H.P.'s after potting. Plants in pots that have remained indoors up to the present time and do not need repotting should be top-dressed, re-tied, and stood outside until the end of next month, when they should be housed, and if liberally treated will break into growth and produce flowers until Christmas. Young stock rooted in spring for the same purpose should be transferred without delay into 7 or 8-inch pots, plenty of leaf mould being used in the compost to encourage a free and rapid growth when the days are dark and sunless. Grow these plants under glass and remove the flowers as they appear. It is a good plan to strike cuttings now of Gloire de Dijon, Maréchal Niel, and similar varieties for growing into strong plants another season for early forcing the following spring. Cuttings of the smaller-growing varieties may also be rooted now, for few plants are more useful for decoration than these are in 5 and 6-inch pots. Where plants are placed under glass and early flowers are required, the main object should be to bring growth to a standstill and thoroughly ripen the wood. Open the house wide day and night.

THE FLOWER GARDEN AND PLEASURE GROUND.

Propagating Bedding Pelargoniums.—The Zonal Pelargoniums have, considering the excessive dryness of the season, succeeded remarkably well, but at the same time cuttings will not be very abundant. If they are fewer in number they will be harder than usual, and therefore more certain to strike freely. No time should be lost in getting in as many cuttings as are required, in order that they may become well established before the dull winter months arrive. Select, where possible, without disfiguring the beds, the most prominent and best ripened cuttings, cutting to a firm joint and trimming off the lower leaves. Any light sandy soil will be good enough to keep the plants alive during the winter, as the less they grow the less likely are they to damp off during a trying winter. Road grit or fine ashes from the stovehole will answer quite as well as silver sand for mixing with the soil, and the boxes or pots may be drained with clinkers or coke. We prefer to dibble the more delicate bronze, silver, and golden-leaved varieties into well-drained pots, or say about four cuttings into a 4-inch pot, and six or more into a 6-inch pot, and they can then be stood on dry shelves to winter. The more robust may be dibbled thickly into boxes, and with ordinary care will survive most winters in cool houses or pits. If they must be wintered in frames, then large pots should be preferred to boxes, as the latter cannot well be kept dry enough to prevent the plants damping off. In cold or moist localities the cuttings ought at once to be protected with glass, as should the soil become saturated with rain many of the cuttings will perish. In no case should much water be given, all that is required being to prevent undue shrivelling.

Verbenas, Ageratums, and Heliotropes.—The principal portion of these are usually struck in the spring, and for affording abundance of healthy cuttings strong autumn-struck plants are preferable to old ones that may be potted from the ground. Short, soft, and flowerless shoots should be selected, and these, after being duly trimmed, may either be dibbled into fine sandy soil over a mild hotbed and covered with a frame or handlight, or they may be put into boxes, pans, or pots filled with fine and fairly good soil, and placed in a mild hotbed to strike. In either case they should be frequently sprinkled with water, and be kept close and shaded from bright sunshine till well rooted, when plenty of air should be given. Air must be given in small quantities on the first signs of the cuttings damping off, and any that are decaying should be removed at once.

Iresines, Coleus, and Alternantheras.—Young plants of these also are the best for stock purposes, and cuttings ought to be struck at once.

These have to be wintered on shelves in forcing houses or stoves, and for this reason 5-inch pots are found the most convenient size for them. The pots should be well drained and filled with a light and rather sandy mixture. About six soft cuttings may be placed in each, and these will require to be placed in a warm frame or propagating pit to strike. All three kinds lift readily, but will not do well afterwards unless housed before they are injured either by much cold rain or early frosts.

Succulents.—If the tops of *Mesembryanthemum cordifolium variegatum* are cut off, dibbled into well drained pans or pots of sandy soil, and placed under glass in the full sunshine, they will strike readily and afford a number of cuttings in the spring. Any other trailing or branching succulents, including several *Sempervivums*, may also be similarly treated. The popular *Kleinia repens* is best struck at the present time. Give the preference to short, sturdy tops, and after they are trimmed allow the cuts to dry and partially heal before they are put in. They may be dibbled in thickly in well-drained pans or boxes filled with light sandy soil, and be struck in a sunny dry frame or pit. Succulents require but little water at any time, and especially when as cuttings or during the winter.

Tuberous-rooted Begonias.—A more moist season best suits this valuable class of summer-bedding plants, but with mulchings and occasional waterings they have done well in spite of the long drought. If it is thought desirable to increase the stock of any of the varieties it is best done by cuttings, much after the manner of striking *Pelargoniums*. They will root more surely in the open ground than under glass, and a moist heat such as suits *Verbenas* would prove fatal to them. It is rather late to put in cuttings in the open ground, but they may be dibbled into pans, pots, or boxes of light sandy soil and placed in a cold frame to strike. Give sufficient water to prevent shrivelling, but avoid heavy saturations. Any flowering shoot may be made into a cutting, and this will not decay till a small bulb is formed at its base. These bulbs should be wintered in a frame or greenhouse, where they can be protected from frost and yet not become very dry.

Dwarf Lobelias.—Seedlings of these are now of good habit, and can be depended upon in most bedding arrangements, with the exception of carpeting designs. If the seed is sown on the surface of pans filled with light soil and faced over with sand, and stood in a cold frame, and kept shaded from bright sunshine, and uniformly moist, a great number of seedlings will be obtained, and which will usually prove superior to those raised in the spring.

THE BEE-KEEPER.

THE STEWARTON HIVE.

THE good accounts given of the Stewarton hive by those who, through a long course of years have given it a trial sufficient to test its full efficacy for gaining a large amount of super honey of good quality and readily saleable, have induced me to order from the Scotch carpenter of Stewarton hive renown specimens of this masterpiece of bee appliances. In doing so I am not in my own mind quite satisfied that the honey obtained from it will be better in quality or greater in quantity than the product of the hives I now have in use. There is also another and a weighty consideration, before producing honey in a super of the form generally in use on such hives as the Stewarton, which is the saleability of the super as a whole. Now, residing near Manchester, within an hour's journey, a good market is at hand for bee produce, but my experience in selling is quite averse to the production of honey in the comb in any form other than the ordinary 1 lb. sections. Large supers of glass, of wood and glass, or of any other combination, are saleable only at a very low price, leaving only the alternative of selling at the reduction or draining out the honey and selling in the form of run honey in small bottles, which find a sale at prices very little, if any, inferior to honey in the comb of the purest quality and in the neatest sections.

The question then resolves itself into this, Can I from a Stewarton take a quantity of honey sufficient to make up for the low price the supers sold as a whole produce when sections only are acceptable? or, if not, can I, taking into consideration the trouble, the expense of bottles and labels, get extracted honey sufficient to make up the difference, and, in addition, in extracting honey there is considerable waste, which would also have to be allowed for in making the calculation? Can, then, this be done, and a margin left to make the increased expenditure on the hive a remunerative outlay?

Time alone can prove, but it is a case in which the safest course to pursue is to introduce the hive but gradually, carefully noting the result, and after a fair trial either discard it or use it more freely, as the result shows a profit or a loss by its use. For sections a ten-standard frame hive answers very well, and the cost is but 10s., and if made at home 7s. will cover the expenditure.

These hives, albeit rather smaller than the new ones I purpose constructing, are now in use. Last year one only was in use, yielding me upwards of sixty 1 lb. sections; this year, from the same stock, sixty-three 1 lb. sections [with almost the certainty, if fine weather continues, of getting forty-two more], all finely sealed and finished, have been taken. Can a Stewarton beat this record? Next year it shall have a trial in my small apiary. A Stewarton and a bar hive of the make I now use shall be stocked with bees of weight proportioned to the relative sizes of the hives, and fed by syrup into good strong stocks early in September; this mode of trial being, to my mind, the easiest to put each hive on the same foundation and to found the basis of a good trial, the result of which will, if possible be given, so that a record may be formed of the achievements of a Stewarton and bar hive in friendly rivalry. If "A Lanarkshire Bee-keeper" finds any objectionable feature in this proposed trial, any proposition of his shall have "my most careful consideration, and, if possible, adoption."

In conclusion, let me add that, as an admirer of Mr. Pettigrew, I do not venture to put into competition for super honey his large hives; but if weight of honey were the only consideration, one of his large skeps would be found well worthy of the place that has been assigned to them by clever managers. All my stocks but one are managed on the non-swarming system, and, as I hope to show when the time arrives, the system will compare favourably with the antagonistic system, even after deducting from the profit a sum sufficient to buy bees to strengthen the stocks and to maintain them in a high state of efficiency.—FELIX.

UNITING SWARMS.

I CAN get as many bees for the driving as I wish to have, as no one here preserves them when taking the honey. In order to try them I have made a hive 17 by 12 inches, with eleven bars, and as the largest hive I can get is 13 by 9½ inches, I would require to put two or three swarms into my hive. How am I to proceed to get them to unite? what breadth of foundation comb would be sufficient to give bees a start on the bars? should wooden hives be painted inside? and how should floor boards be ventilated? I only commenced bee-keeping last June, hence my want of information. Since that time I have consulted several old volumes of your Journal which I had beside me. A calendar by Mr. Pettigrew, 1884, gives a vast amount of information, but answers to the above questions would greatly oblige.—JAMES EDGAR.

[Hives 13 by 9½ inches are very small. It will take three or four swarms from such hives to make a good one and build out the combs satisfactorily. To unite these swarms, have a large hive or box, into which put the first swarm, and as the others are driven and full of honey invert the first hive and shake the others into it. When full of honey and put into confusion by the operation no fighting takes place. Wooden hives should not be painted inside. Ventilating floors.—Make an eke about 2 inches deep, but otherwise of the same dimensions as the hive, nail or tack the perforated zinc on one edge, and either have a sliding or hinged bottom on the other. The breadth of foundation to be used depends a great deal upon what sort of wax the foundation is made from. If genuine home-produced wax is used fill the frame to within half an inch of the bottom rail, and nearly touching the ends. By doing this there is a chance of getting the frames filled and capable of being handled with safety.]

A BEE ADVENTURE.

HAVING at the commencement of the season a larger number of hives than I generally attempt, I had not time to attend to them as I intended. I wished to cut out queen cells and have super honey only, or, what was the same thing, sections in the rear of the bars. Two of my stocks were straw skeps. These, I thought, would give me a couple of swarms each, and I might count on some young queens to take over the queendom at the fall. This was all very well in my head or on paper, but our little friends have a way of "ganging their ain way." I had no time to cut out queen cells, and so I put on supers, either sections or regular snpers, and hoped. The skeps swarmed. These were hived, and the second swarms pepperminted and mixed with

the first. Meanwhile I had one bar-frame stock filling sections, another working well in a glass, and another working both above and at the rear. This latter I had bought in an Abbott's combination standard, and on examination found they had been allowed to follow their own will, and had built across the bars. I determined to leave these till the fall, and then hive these, but I put a Crystal Palace super overhead, and eight 2 lb. sections in the rear. They soon set to work, and so far as I can tell these are the only stocks that have not swarmed. I have taken one set of four 2 lb. sections from the rear, having another nearly complete, replacing with an empty, which I have not yet examined. They are sealing the front and rear combs of the Crystal Palace super, about 20 lbs., and this I lifted, and placed an empty one under, in which they are steadily working, so that their stock will probably yield over 40 lbs.

The stock working in a super of sections, after filling some 25 lbs., swarmed and ceased super work, though I have since taken two bars of honey. Meanwhile, a stock working well in a mahogany and glass super I was anxious to exhibit, swarmed and ceased work aloft. This was a great disappointment to me. When getting home on most days there was a swarm from one or other of the stocks, but there being no one at home to watch them, one or more got away; but the plan I adopted was to add them after supplying scented syrup to one of the other swarms, so that I obtained two that were very strong.

The plan I adopt, and I have found it the most successful, is this. I have a large bottle of syrup, thin; in this I put one of the aphid spray producers, with a flexible tube to the mouthpiece; then in the evening I smoke the stock, and taking bar by bar spray them well with the syrup, also any separated bees not on the bars; then, serving the swarm which has been hived in a skep and safely tied down in the same way, I throw them in at the back of the hive.

This plan has succeeded capitally, scarcely any quarrelling, and I was anticipating great things, but it does not do to weigh your honey before you have it, any more than to count your chickens before they are hatched. I placed the mahogany super on a stock made up of three swarms. The bees took possession, and my mind was easy, but after a little, though the super was hot, the bees were not, and the honey already in the super did not appear to increase. Then I felt convinced that this mixed swarm must have swarmed, for there were fewer bees at the mouth of the hive and fewer in the super; so, being very anxious to get this mahogany super filled, I removed it. But two bars were nearly finished. I placed this on another mixed swarm, and two or three more bars were filled up, but our season is over, and I failed as to exhibiting this super. Soon after I removed it from its second place—the mixed swarm—I felt convinced that there was something wrong. The bees crowded the entrance; true, the weather was hot, then they hung out. This increased greatly. They swarmed down one leg of the hive, then they formed a mass on the ground. At that time I was very busy, had scarcely a moment to look at them. However, just before bedtime the evening that I had noticed them in a hunch on the ground I took a light to them to see if those on the ground had gone up. No, there they were. Glancing at the entrance I saw that the bees seemed crowded all round it, and on placing the light down found the alighting board a mass of honey and drowned bees. The explanation was of course that some accident to the bars had occurred. The following day I opened the hive. The second, third, fourth, and fifth bars had all given way—whether one had succeeded in breaking down the others, or they had all given way with the heat, and the floor of the hive was a mass of honey and dead bees. I immediately got another hive, and the bars were taken out, bees brushed off, &c. Meanwhile the broken pieces of comb were piled on a dish, taken indoors, and placed on a counter. Near this dish was a small box of scales and weights. There they were left, the bees transferred to their clean hive, and hopes that the queen was all safe, &c. Three or four hours, the broken pieces were taken away to the extractor; then my assistant, accidentally going to the box of weights, lifted the lid, but as suddenly retreated, for a bee, of which he has a mortal horror, issued from the same. "Oh!" I said, "you need not be afraid, only a drone," and was just going to give the supposed gentleman a *coup de grâce*, when I recognised her majesty. How she got into the box of scales was a mystery. I caught her, and placing her on the feeding hole, she quickly vanished. Three days after I found eggs in the new comb, and the hive has been rapidly repairing damages since. Scarcely a dozen bees were taken in with the pieces of comb, and it is singular that amongst these should have been the most important. Still more singular that she should have got into the box which was close at hand, certainly, but how she got in and shut down the lid is a much stranger affair. But there she was ready to issue from it as soon as the lid was lifted, as I saw myself.

To those who think bees should take care of themselves I think the late winter must have been disastrous. The bees were often on the wing, hence consuming more of their stores. Then May here was bitterly cold, and very little honey to be found. So among the cottagers I have not been surprised to hear they were busy and strong in April and then died away, some of them having lost several. To those who have been able to devote plenty of time to their little workers I cannot but think the harvest has been fair, if not abundant. I think about my neighbourhood the latter.—Y. B. A. Z.

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London.—*Descriptive Catalogue of Bulbs, Fruit Trees, &c.*

Edmund Philip Dixon, Yorkshire Seed Establishment, Hull.—*Catalogue of Bulbs, Spring-flowering Plants, Strawberries, &c.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Abnormal Leaf (Thos. Meredith).—We are glad to see the monstrosity, which differs somewhat from others of the same nature that occur in gardens. It appears to be a twin leaf, the force of the sap having divided the stalk and, as it were, split the blade, and its expansion having been thereby arrested a secondary purse-like leaf has pushed from the midrib. It is a very singular example of malformation.

Root-pruning (F. J.).—You had better not prune the trees till the crop is gathered, which you say will be in October. The remarks on root-pruning in September are, as you intimate, sound and clear, but they apply to fruitless trees of luxuriant growth. Yours, it appears, are not quite fruitless, yet are growing too freely, and you will not err by root-pruning in October, or immediately the fruit is gathered.

Top-dressing Chrysanthemums (Cambridge).—You cannot do better than top-dress your plants at once, which will assist in keeping the roots active and supplying the plants with the necessary food to enable them to develop their flower buds. It is surprising what assistance a top-dressing of rich material proves to the plants in their latter stages, after the roots inside the pots have taken full possession of the whole of the soil. A system of top-dressing is practised by the majority of those who grow large flowers for exhibition. You will find equal parts of good fibry loam and cow manure with a little soot, say a 6-inch potful to half a bushel of soil, an excellent top-dressing for your plants, and the roots will not be long before they take possession of it. Some first-rate cultivators top-dress their plants with cow manure only, but we prefer the compost advised above.

Ranunculuses from Seed (Amateur).—Keep the seeds you have saved in a dry cool place. Early in spring mix a compost of strong loam and leaf mould, and fill some boxes or seed pans, well drained, very nearly full; sift a portion of it and place a thin layer over the rough compost, and press it very gently down. Mix the seed with some fine soil, rubbing the seed and the soil well together till the seeds are separated from each other. Sow this mixture upon the soil in the boxes or shallow pans; press it down level, and with a fine sieve sift some of the compost evenly over it the thickness of a shilling; then with a watering pot, the nozzle of which has the finest holes, give a gentle watering. Place the seed pans under glass in a cold frame or pit, or in front of a low wall facing the east, and contrive a covering or shelter of some kind to protect them from heavy showers. Whenever the soil appears dry give water with the fine-rosed water pot, and in strong sunshine place a shade over them till the seedlings appear above ground and have attained a leaf or two to each plant. Search well about where the boxes or seed pans stand, and even lift them up and examine under them to see if any slugs or woodlice have crept there to hide themselves. Continue this attention till the leaves begin to decay and then cease watering, but keep the plants clear of weeds. When the leaves are all decayed and winter is approaching place the pans of seedlings in some very cool place where no rain can fall upon them, and keep them there till spring. About the middle of April bring them out and give them a good watering. Sift over the soil a thin layer of fresh compost, and repeat the care and attention with regard to watering, looking after insects, and keeping clear of weeds as in the previous season. This second year, when the leaves fall and the plants are at rest, the tubers will have attained some size. They should now be taken out of the soil, and the surest way to accomplish this without losing any roots is to sift the upper part of the soil through a fine sieve, fine enough to catch even the smallest roots. Store them away in a cool dry room, and in the spring plant them out.

Young Vines (An Amateur).—It is difficult for us to say why the berries of your Grapes are small from the information supplied to us. The size both of the bunches and berries depends in a very large measure upon the growth the Vines made last year, and also upon the condition of the wood, whether thoroughly ripened or not. It is impossible to expect Vines with unripened wood that possess neither strength nor vigour, whether young or old, to produce berries of a large size. Young Vines very frequently produce large-sized bunches, but the berries are often smaller than from vigorous Vines of a greater age. This is not always the case, for much can be done in swelling the berries to a large size by good cultivation, which under inferior treatment would only be small. The pruning would have nothing to do with the size of the berries. You cannot expect us to answer your other question about the soil, for you have not said one word whether you made special preparations for your Vines, or in what compost they are growing. If your letter had been less brief we might probably have given you a more useful answer.

Plan of Rose Garden (A Lady Gardener).—We have no design exactly adapted to the peculiar form for your lawn, and you can scarcely expect us

to prepare and engrave one at a cost equal to three years' subscription to the Journal, and which could be of service to no one but yourself. We have given you a list of Roses, and stated that the beds cannot be too plain in outline, and suggested that a series of circles and oblongs would be suitable. We now show a combination of beds of the nature indicated, and by adding more and arranging them in accordance with the shape of your lawn you may make an enjoyable Rose garden. The space between the beds should exceed three times their diameter, it being a great mistake to crowd too many Rose beds on a lawn and to have them of fanciful designs. If the ends of the beds 12 and 13 are scooped, a round bed placed next, then another arched oblong, then a round, and so on, following the curve of your lawn, the series will look very well, and you will only have to place other beds in harmony between 8 and 10 and 11 and 9 to complete the arrangement. You can dispense or not with a bed in the centre, but if you have one it is worth consideration as to whether an oval would not be more suitable to the form of your lawn than the circular bed (1) in the plan. It does not follow that the beds 6 and 7 should be of the exact shape represented. Exercise your own taste in the matter. You will find it neces-

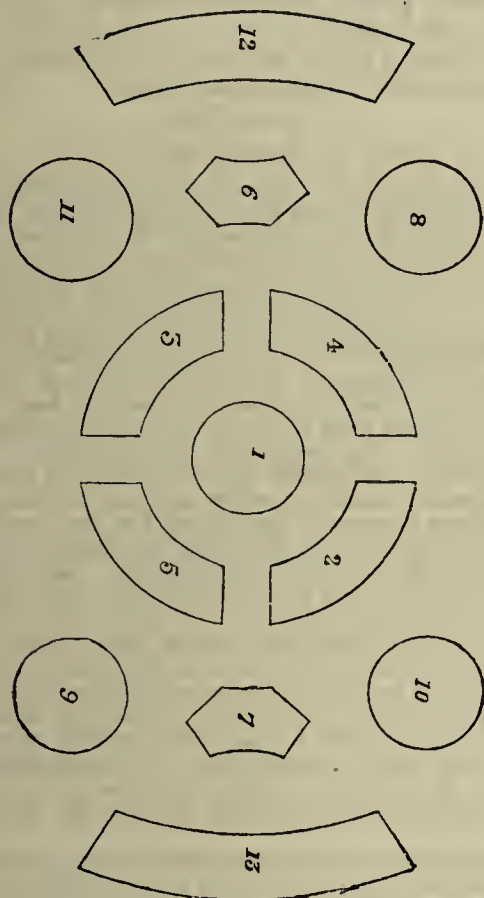


Fig. 37.

sary to examine the design from the side, as the figures indicate, to understand what we have said as to its extension and modification.

Vines Unhealthy (A. B.).—The specimens that were sent to us before clearly did not represent anything like the actual condition of the Vines, and we are sorry to have been misled by them. Even if you have sent the very best examples obtainable, and taking the others as the worst that could be found, the average condition of the Vines is very much better than we were led to infer from the data supplied. Your letter is much more intelligible than the other we received, and it indicates that you have a good general knowledge of Vine culture. You proceeded cautiously and wisely in the work of renovation. It is quite natural that your employer would not like being without Grapes for a year, and you did the best you could to provide some; and now we understand the case we do not suppose the crop would do any material harm. It is always advisable to allow Vines, as far as possible, to start into growth naturally after much disturbance of the roots, even if extra heat has to be provided afterwards, when new roots are working in the soil, to get the crops and wood ripe by the autumn. You are working at a disadvantage in a high cold dull district; the very large leaves you have sent show this clearly enough. They have not had sufficient sun to elaborate the crude sap, hence their enlargement and the softness of the tissue. The less the light the larger the leaf. Under such circumstances firm borders containing much calcareous and other gritty matter should be provided, and loose rich borders avoided. A multiplicity of surface roots should be the great object, as these are followed by sturdy growth and stout leaves; and whatever extra support may be required for the crops can be applied from the surface. It is also very important that the Vines and laterals be thinly trained. Not a leaf should be permitted to form that cannot develop under the direct action of light. There must not be the slightest suspicion of overcrowding, while all the air possible must be admitted consistently with avoiding sharp currents, even if a little extra fire heat has to be employed to maintain the requisite temperature. If you have erred at all it has been in keeping the house too close or the leaves too crowded, we cannot tell which; but we know there has not been sufficient light and air for perfecting them and enabling them to do their important work. We have observed that where there are frequent changes of gardeners there are, as a rule, unsatisfactory Vines. We are convinced the Vines referred to will improve under your management, as your past experience with them will be turned to account in a manner adapted to their peculiar

condition; a stranger would have all this to learn, and in the meantime it would be a mere matter of chance if the Vines did not suffer. That is the reason that Grapes are rarely satisfactory when many different persons share in their management.

Names of Fruits (A. B.).—1, Rymer; 2, Williams' Bon Chrétien; 3, Unknown, worthless. (W. M. Rose).—Early Julyan. (Geo. Wall).—Apple Summer Whorle; Fig, Brunswick; Plum, Blue Perdrigon. (A. J. Brown).—No. 1, Early Albert; 2, The fruit was much bruised and its acidity rendered part of the writing on the label illegible. If the flowers are large it is Early Victoria. (X., Loughgall).—We have never heard of an Apple called Assyrian Codlin. The name must be a corruption of some other, and yet in all our investigations we cannot find one that has any resemblance to it.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (H. Brown).—Staphylea pinnata, the Bladder Nut, the seeds of which being hard are strung by Roman Catholics for beads in some countries. (A. H., Hitchin).—Had the specimens been sent in a small box with a little damp moss, green grass, or fresh leaves, as we have many times advised, there would have been no difficulty in naming them, but by affixing them to dry paper the moisture was extracted from them and they arrived very much in the state of dry hay. No. 1 we detect as Galega officinalis alba, 2 as Arabis alpina variegata; the other was withered and crushed beyond identification. We cannot answer questions by post. (G. S.).—Adiantum trapeziforme; 2, Asplenium bulbiferum; 3, A. Fabianum; 4, Blechnum braziliense; 5, Gleichenia speluncæ; 6, Selaginella Martensi variegata.

COVENT GARDEN MARKET.—SEPTEMBER 2ND.

SOFT fruit is now finished in our market, and hard goods are in heavy supply, with prices falling, large consignments of Grapes and Tomatoes reaching us from the Channel Islands being easily cleared at low rates.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0 to 3 6		Melons	1 0 to 2 0	
Cherries	0 0	0 0	Oranges	8 0	12 0
Filberts, Kent ..	22 6	0 0	Peaches	1 6	8 0
Currants, Red ..	0 0	0 0	Pears, kitchen ..	0 0	0 0
" Black	0 0	0 0	" dessert	1 0	1 6
Figs	1 0	1 6	Pine Apples English ..	2 0	3 0
Gooseberries ..	0 0	0 0	Plums	1 3	3 6
Grapes	0 6	2 0	Strawberries ..	0 0	0 0
Lemons	15 0	21 0	St. Michael Pines ..	3 0	7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	1 0 to 0 0		Lettuce	1 0 to 1 3	
Asparagus	0 0	0 0	Mushrooms	0 6	1 0
Beans, Kidney ..	0 3	0 0	Mustard and Cress ..	0 2	0 0
Beet, Red	1 0	2 0	Onions	0 3	0 0
Broccoli	0 9	1 0	Parsley	2 0	3 0
Brussels Sprouts ..	0 0	0 0	Parsnips	1 0	2 0
Cabbage	0 0	1 0	Potatoes	4 0	5 0
Capsicums	1 00	1 6	" Kidney	4 0	5 0
Carrots	0 3	0 4	Rhubarb	0 4	0 0
Cauliflowers	2 0	3 0	Salsafy	1 0	0 0
Celery	1 6	2 0	Scorzonera	1 6	0 0
Coleworts doz. bunches	2 0	4 0	Seakale	0 0	0 0
Cucumbers	0 3	0 6	Shallots	0 3	0 0
Endive	1 0	2 0	Spinach	2 0	4 6
Herbs	0 2	0 0	Tomatoes	0 4	0 5
Leeks	0 3	0 4	Turnips	0 4	0 6



THE CLERGYMAN'S FARM.

(Continued from page 196.)

PERMANENT pasture, though last on our list of green crops, is in its way of equal importance with any of them. Of far greater importance, many a farmer would say even now; and it is still not uncommon to meet with the clause in agreements between landlord and tenant which directs that no pasture shall be broken up under a penalty of £10 per acre, and yet there is no branch of farming that has been so mismanaged as this. Easy-going ignorance and carelessness may be said to be the chief causes of this—ignorance of the relative value of the different sorts of Grass and Clover, and carelessness about the component parts of old pastures. So long as the sward was thick and interlaced with growth, but little attention was given to the actual value of that growth as an article of food, and yet how frequently did it

consist of native grasses and weeds! The maintenance of some three or four sheep per acre was the utmost limit of its capacity, and if it was made into hay it was poor and innutritious, and the aftermath failed to impart that improvement to the milk of the dairy cows which is always obtained from really rich pasture. Rushes, Carnation Grass, and other coarse herbage was also frequently very prevalent, and this state of things was taken so entirely as a matter of course that we once heard the owner of a large estate say in a speech at a meeting of farmers, that he should be much obliged to anyone who could tell him how to get rid of coarse worthless herbage out of his meadows.

How are we to reclaim such poor pasture? Seedsmen offer us a tempting "renovating mixture," by the sowing of which we are told we shall effect a radical change in the quality of the pasture. But can we possibly suppose that even if the seed germinates, the roots of the seedlings will be able to become established in the soil, which is already crowded with the tough fibrous roots of native plants? No, we will waste neither time nor money upon such doubtful practice; the unprofitable old pasture is condemned as worthless, and is got rid of as quickly as possible. The turf is pared, burnt, and the ashes spread over the surface, especial care being taken to let the burning follow the paring quickly, in order that the larva of insects as well as the seeds of weeds may be destroyed. If necessary, drainage is then seen to; ploughing follows—not mere shallow ploughing with two horses, but deep ploughing, either with four horses, or, if practicable, with steam tackle. August and September are the best months for this work, and the sowing of the seed is left till the following spring. It is not done then at any particular time, but we wait till the soil is dry enough to be well worked and reduced to a fine tilth, so as to keep the seeds near the surface, and the sowing is then done, either with the grass mixture alone, or with white Mustard, to be eaten off by forward lambs. Most farmers are accustomed to sow the grass seed with a corn crop. In alternate husbandry, for a two or three-years layer, we do not object to the corn, but for permanent pasture it is so important to give the young plants a good start in soil well stored with fertility, that we regard a corn crop as decidedly objectionable. A green crop of brief duration, like white Mustard, does no harm, and the fact of its consumption by lambs in folds points to a valuable addition to the fertility of the soil, and to the young pasture having a favourable start. It is our treatment of the young growth during the first two years which determines its success or failure. We know that if we allow the young plants to grow unchecked, and to bear seed, that many will cease to exist after the first season. We also know that if sheep are turned in to roam about the new pasture at will, they consume some favourite sorts of grass and leave others untouched. We therefore pass forward lambs quickly over it, in such small folds that the whole of the herbage is eaten and new folds made every morning, and the lambs are passed from fold to fold, and are not suffered to leave them, but are taken away from the last fold to another meadow. They are again folded upon the young pasture as soon as it has made new growth, so that it is not let run up to seed, and no sheep are left upon it after the end of September. In the following spring old sheep are folded upon it, or the breeding flock is passed over it—always in folds; and this system of folding is continued throughout the second year, or rather till October, when the sheep are withdrawn again, and it is left untouched till the beginning of another season of growth, when we must decide whether we shall use it for grazing or hold it in reserve for hay. If it is kept for hay it is mown first, before older pasture, so as to prevent any of the grass from seed-development, the best time being just as it is coming into bloom, and if all has gone well we shall be well rewarded for our pains by a fine crop of hay and a flourishing thick carpet of grasses and Clover, altogether superior to the poor herbage of the old pasture.

Surely systematic treatment is as important for this as for any other crop, and it is simply owing to the want of it that failure or poor results follow the laying down of land to permanent pasture. For the process that we have thus briefly sketched is similar to that which should be followed in the laying down of any land, the points of most importance being well-drained fertile soil, a clean seed bed, a fine tilth, genuine seed sown without a corn crop, and careful management for the first two or three years. It is obvious that in passing sheep over the young pasture in folds for the first two years, the growth is eaten fairly, and the land enriched without an outlay for artificial or other manure, and sheep may still be regarded as the most profitable animals upon a farm, having regard to small profits and quick returns. It may be said that all profits in farming are now small, and this important fact should induce a closer looking after so-called trifles, and due attention to every detail of our work.

(To be continued.)

WORK ON THE HOME FARM.

Harvest work has been somewhat hindered by rain, which was much wanted for grass and root crops, and it has done much good to Barley and no harm to any other corn. On the whole we are in the enjoyment of favourable harvest weather, corn ricks grow in number daily, and another week of fair weather will enable us to finish. Barley in exposed positions has suffered much from high wind. The straw was so sturdy that it was not lodged, but the ears were beaten off so much that stubble pigs find plenty of food there. As the pressure of harvest work ends, foul land will immediately be taken in hand, men with steel forks being set to fork out thick beds of couch grass, and horses used for the same purpose with horse hoes, cultivator harrows, and where land is very foul with ploughs too. Our best efforts should be given to turn every opportunity to account for getting the land clean, and now that we are upon this subject let us ask for more attention to the eradication of Thistles. The term is certainly appropriate, for the literal meaning of eradicate is to pull up by the roots, which is precisely what we would fain do to the Thistles. We have recently taken a farm in hand that is badly infested with them, and we find that it had come to be taken quite as a matter of course that there should be Thistles upon the land. Our resolution to get rid of them will cost us some trouble, for some two hundred acres may be said to be one huge Thistle bed. Where pulling is practicable it shall be done, but upon all firm land a little sulphuric acid will be poured upon every crown. This will be a tedious but thorough process, and we had far better do this than try to keep down this pest by means of hoeing and mowing. Old layers that are foul with couch grass will, if the weather holds fine, be pared and burnt, both to get rid of foul weeds and get a dressing of burnt soil and ashes for the land.

Stubble Turnips may still be sown, and we must take care to sow *Trifolium incarnatum* in September. On a clean stubble we simply sow the seed broadcast and harrow it in, but if the land is foul the horse hoe and harrows are first passed over it several times, and then the seed is sown. For neatness it is always well to clear the stubble first with harrows, and the short litter is taken into the yards. Let hedges be clipped and made trim for winter while the wood is soft with sap, and the work is easy, and let foul ditches or watercourses be cleared while the water is low in readiness for winter floods. Stockyards should be got ready for winter. See that drains are in good order, and the water supply is as good and abundant as possible. Let lodges be put in repair and washed inside with hot lime, and prepare an ample store of litter for bedding and for the yards.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				
	Baromet- er at 32 ^a and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
August.										
Sunday	23 29.907	56.8	52.0	W.	58.8	64.9	48.9	80.5	43.0	—
Monday	24 30.028	60.2	54.6	E.	58.4	67.4	50.2	78.2	43.8	—
Tuesday	25 30.060	53.7	53.1	E.	58.0	72.4	46.5	95.6	41.2	—
Wednesday ..	26 30.016	65.4	58.9	E.	58.2	73.1	50.6	113.8	41.4	0.249
Thursday	27 29.945	66.4	58.1	E.	58.8	63.4	51.9	93.8	50.8	0.063
Friday	28 29.861	60.4	55.5	E.	58.2	67.1	51.6	108.7	47.3	—
Saturday	29 29.843	58.4	51.5	N.W.	57.8	70.0	48.6	118.4	43.9	—
	29.951	58.5	54.4		58.3	68.3	49.3	98.4	44.5	0.312

REMARKS.

23rd.—Dull, cold, and autumnal.
24th.—Hazy early; fine and bright after
25th.—Fog in morning; fine after 11.30 A.M.
26th.—Cloudy early; fine and fairly bright afternoon and evening.
27th.—Rather heavy rain early, and slight till noon; brighter in afternoon; cloudy evening.
28th.—Fair, but not much sunshine; rather windy.
29th.—Windy early, with occasional cloud and sunshine; windy evening.
Temperature still slightly falling and weather continuing dry.—G. J. SYMONS



COMING EVENTS

10	TH	FIFTEENTH SUNDAY AFTER TRINITY.
11	F	
12	S	
13	SUN	
14	M	
15	TU	Sale of Bulbs at Stevens' Rooms, Covent Garden.
16	W	

STRAWBERRY PLANTATIONS.

TO obtain a moderately fine crop of fruit, or a bountiful supply of strong runners suitable for layering into pots next year, new plantations should be made without delay. It is useless to depend upon old fruiting plants for an early supply of runners, for they cannot be obtained whether the plants are growing on light or heavy soils, as the strain of fruit-bearing prevents the production of early luxuriant runners.

The two past hot and dry seasons have proved beyond doubt the advantages of a young plantation, for without early runners it is impossible to have large well-developed crowns suitable for forcing. The plants layered from old fruiting stools are at the present time weak and puny, and will not make by the end of the season such strong plants and fine crowns as those possess now that have been layered from young plants. Our plants are strong, even luxuriant, and the large pots in which they were layered are already half filled with active roots.

Some contend that it is a waste of ground to have one plot for fruiting and another planted and reserved the first season to afford runners for forcing and planting a new plot early in the season. This is not the case, for a crop of Potatoes can be taken from the ground before the runners need be planted; and between these, say if planted 3 feet apart, may be had a row of Veitch's Autumn Giant Cauliflowers or Early Autumn Broccoli, which need not interfere with the Strawberries. When this practice is followed the Strawberries are planted down the centre of the Potato rows 9 inches apart, every alternate plant being lifted as soon as the Cauliflowers, &c., are cleared from the ground and planted in their place, which leaves the Strawberries 18 inches apart each way. Here this practice is not followed, simply because the principal kitchen garden is too far away, and would therefore entail too much labour; in addition the supply of water is inadequate and by no means convenient. Under these circumstances two plots in the fruit garden are available for Strawberries, and as soon as the fruit has been gathered the plants are destroyed and young plants are placed in for early runners for layering in pots and supplying the plantation the following year.

After the ground is prepared we plant, between every two rows of Strawberries, one row of Coleworts or Endive. If the ground has been prepared before the Strawberry plants are ready the Coleworts are placed in, the latter being planted when ready. In spring Lettuces raised in heat are planted out between the rows, and often seed is sown between them; if not to stand until they are ready, for cutting for transplanting elsewhere. Cabbages, Broccoli, or Brussels Sprouts are often sown as well. It will thus be seen that no space is really wasted, and even if no autumn or spring crop could be taken the advantages of having good early runners where the forced crop is of the utmost importance abundantly repay both for the ground and labour.

Our plants for this purpose were formerly prepared by

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layering in small pots after the whole of those required for fruiting had been layered. This was abandoned, the young plants being cut off and inserted as cuttings in 3-inch pots and placed in a frame or a Peach house from which the fruit had been gathered until established; they were then hardened and placed out. This system is not now practised. A little light soil, principally leaf mould, is placed in a cold frame, and the runners are taken and dibbled into the soil. After a good watering they are kept close shaded from the sun for a week, by which time they have commenced rooting freely. The plants are then gradually hardened and ready for placing out a little more than a fortnight after they have been severed from the parent plant. The plants root much more quickly under the close moist conditions of the frame than they do when layered into small pots, which entails double the labour in watering. The plants can with a little care be easily lifted with a good ball of roots, and if planted during showery weather never suffer, but are strong and well established before winter. Those who have not practised this system should do so at once, for there is yet ample time to get the plants thoroughly established, even if they are only now severed from the parent plants.

If the plants are not wanted specially for supplying runners for forcing they will, if got in early, produce a good crop of fruit the first season after planting. When required solely for this purpose they should be placed the distance apart advised from row to row, and 9 inches only from plant to plant, which will allow of every alternate one being removed after the fruit has been gathered. Perhaps many readers may not have the convenience of a frame in which to start their Strawberries, and under these circumstances it is best to leave them attached to the parent until they have rooted into the border, in which condition they are ready for planting any time during showery weather.

The ground should be well prepared for this crop in readiness for planting, and not left until showery weather, and the plants are ready for placing out. The ground should be deeply dug and heavily manured, incorporating the manure well with the soil, so that the roots will have a chance of reaching at least a portion of it as soon as they commence to grow and extend. It is by no means an uncommon practice to turn the manure just below the surface, or go to the opposite extreme and bury it too deeply, thus being of little or no service to the plants for the first twelve months. Many cultivators trench the ground, but my experience of trenched ground for this crop has been very unsatisfactory, and it is not attempted here on our light sandy soil, but this has been rendered much heavier during the past few years by the addition of large quantities of clay. This has improved the ground very much for Strawberry-growing, being much more retentive of moisture than formerly, and the crop does much better in consequence. All who have light sandy soil for this crop should use clay liberally if they can procure it. Our practice is to spread it on to the ground in autumn after planting, and leave it exposed until spring, by which time it has fallen to pieces, and is then stirred into the surface. I find that it incorporates better with the soil by this than any other method.

The preference is given to cow manure in nearly a fresh condition for our soil, and this is most liberally used when the ground is dug. In spring, after the plants have commenced growing, the dressing of manure is supplemented by a good application of sewage, which is stirred or forked lightly into the surface the following day, and then left to be washed in by rains. If the weather, however, should prove dry, warm, and genial, a good soaking of water is given and the surface of the ground is mulched with old Mushroom bed refuse, leaves, or any similar material that may be at hand. This also assists Lettuces or other crops that may be growing between the rows. The mulching prevents evaporation, and even during the past two years we have had abundance of early strong runners.

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¶ When the plantation is made after Potatoes are lifted the ground should be well manured, digging it in the same as if the plot was clear. This will not hurt the Cauliflowers or Broccoli growing between, the space upon which they are growing being manured directly they are removed. Strawberries will do on the same ground for years in succession, one of our flats not having been changed for ten years, neither has the ground been trenched during that period, and for how long before I have no means of ascertaining. It will thus be seen that our system of culture is runners the first season, a crop of fruit the following, and then the plantation is renewed.—WM. BARDNEY.

CYPRIPEDIUM STONEI.

THIS Orchid Slipper is worth a place in all gardens where these popular flowers are appreciated and the requisite heat can be provided. Imported and small partly-established plants are cheap, and therefore within the reach of all. The scape carries two or three flowers, according to the strength of the plant. These rise well above the dark green foliage, and last a long time, either cut or upon the plant. The flowers are much more useful for cutting than is the case with many kinds of a heavier nature, of which *C. Parishii* may be noted as an example.

C. Stonci does well, in fact grows luxuriantly, in a stove where a general collection of plants is accommodated. The amount of heat, shade, air, and moisture usually given to these plants where properly grown, appears to suit this *Cypripedium* exactly. It should be grown in a pot or pan liberally drained, and in a compost of fibry peat and sphagnum moss in equal proportions, with charcoal in lumps freely intermixed. It will also grow freely in fibrous loam, sand, and charcoal, but this compost is only safe in the hands of skilful cultivators, for it is liable to become sour quickly. Good peat fibre from which the particles of soil have been removed will last in good condition for at least two years. The system of potting that will be recommended may be safely followed with certainty that the compost used is in a perfectly sweet condition about the roots of the plant.

The secret of growing not only this, but all *Cypripediums*, is to retain the medium in which their roots are working sweet and healthy. The pots or pans used should be at least three parts full of drainage, carefully arranged with the hollow side downwards, and over these a thin layer of living sphagnum moss. Peat fibre will answer the same purpose, and this is preferable on account of its lasting qualities. The pot, almost level to its rim, should be filled entirely with peat fibre and charcoal, carefully worked amongst the roots, no moss being used. The remaining portion, or all that is placed above the rim of the pot, should consist of the peat fibre, sphagnum moss in a living state, and charcoal, mixed together, with a good layer of the moss on the surface, which should be induced to grow freely. By this method of potting, the moss, which decomposes in a season, can be picked out every spring just as growth commences and new supplied. The moss need only be removed the first season after potting, and the fibre as well the following season—that is, the whole above the rim of the pot. This will insure the roots, or at the least the majority of them, being in perfectly fresh sweet material until the plants require repotting, or larger pots, which will be the case after the second year if they grow and do well. When repotting them every particle of the compost used should be removed from amongst the roots and replaced with new, which will insure the plants remaining perfectly healthy provided the other treatment is satisfactory.

While growing, this plant requires abundance of water both over the foliage and at the roots; in fact at no season of the year should the material about the roots be allowed to become dry. Great care should be exercised not to apply cold water direct from the main, either to the foliage or the roots, or the foliage of this variety will spot, which disfigures them.

The foliage should be kept perfectly free from insects, and grown in a winter temperature of 60° to 65° by night, with a rise of 5° or 10° by day. During summer the night temperature should range from 70° to 75°, with a corresponding rise of 10° or 15°, or even more by sun heat after the house has been closed.—S. A.

JUDGING AT EXHIBITIONS.

[A paper read before the Dundee Horticultural Society by Mr. W. Williamson, Tarvet House Gardens, Cupar, Fifeshire.]

BEFORE proceeding to the chief object of this paper it may not be considered out of place if we glance at a few facts concerning exhibitions in general, in order, if possible, to ascertain if they are productive of the

good expected from them. To consider any means by which their popularity might be enhanced, to notice some objections urged against them, and see if any of them are well founded, to make plain to employers the benefit they derive from granting to their gardeners the liberty of a reasonable amount of competition, and above all to clear away as far as we can any misunderstanding or difference existing between judges and exhibitors.

As to the principle of exhibitions, there can scarcely be two opinions. Everyone must admit they have been the means of increasing not only the quantity but the quality of every art and industry which by their agency has been placed in public competition. Through the same influence the minds of men have been so exercised in trying ways to excel as to call forth their highest intellectual powers to aid them, the benefits accruing not only to themselves, but to all. Exhibitions have indeed done much to advance the social and intellectual benefit of the community. Our attention at the present time shall be directed to horticultural exhibitions, a careful inspection of one of those of average importance being to most people not only a certain pleasure, but a great source of instruction. The greatest benefit is derived from a survey of the productions of others, to which the energy and skill of brother craftsmen have been unsparingly applied, producing results which if we cannot exceed we try our best to imitate. The outcome of all this effort and acquisition of knowledge must be to increase production, enhance the value, and give a fair return for the labour.

Let us notice some objections put forward against exhibiting; happily there are few, but they are important. In the case of fruit, so-called undercropping is the principal complaint. If we change the word to moderate cropping we arrive at the true description. Every gardener of any intelligence at all knows quite well that to take less fruit from a tree than what it can bear and bring to perfection is very unwise and useless. If we take the case of the Vine, it is well known a strong healthy plant will produce and mature with good management a given quantity of fruit as well as half that quantity—that is to say, if a Vine has a crop of 30 lbs. of well-finished fruit it would have been a gross mistake to have allowed 13 lbs. only to remain upon it. The same rule applies to flowers and all divisions of the vegetable kingdom. It is quite clear, however, that cropping Vines or fruit trees at what we might call the exhibition standard, instead of being detrimental, is actually healthful and economical. Another objection adduced is that men who exhibit give their time and best attention to those plants, fruit, or flowers on which they are to stake their reputation at the next exhibition. This may be well founded in some cases, but we always find exhibitors enthusiasts in the profession, and if they have strength suited to the requirements of the garden, there is seldom any cause for complaint. The last of the objections to exhibiting I would notice is a very formidable one—namely, proprietors who take a little pride in their gardens, and who naturally suppose the produce from them ought to be as good as their neighbours, on finding their exhibits placed second or third in the prize list resolve to give it up altogether rather than risk the chance of defeat again. They do not seem to take into consideration the means employed, the facilities given for production, or the obvious fact that all cannot be first. Gardeners ought to exercise critical observation on what they are to exhibit, and see that they are worthy of the space allotted to them. The practice of competing in a great number of classes with the expectation that “they will come in somewhere” should be discouraged, as it lowers the standard of general excellency and causes dissatisfaction to everyone. It is not within the reach of an individual to give the necessary attention to so much, and to try to do so would interfere with the legitimate requirements of any establishment, giving rise to some of the objections previously alluded to.

Having said so much on the benefits derived from and objections taken to exhibitions I would now refer to the judges. They ought to possess the necessary qualifications to enable them to adjudicate correctly upon the exhibits placed before them. They should be able to make a quick comparison, to detect at once the weak and strong points, should have a clear understanding of the different points of excellence in the varieties. The selection of judges is a matter of special importance as bearing on the success of an exhibition. The general assumption is that men occupying the position of head gardener in large establishments are qualified to adjudicate at any show. Such men are generally excellent gardeners, but that does not imply that they will be equally good judges. The best judges are to be found where certain classes of plants, fruits, and flowers are specially grown; where the highest state of perfection is reached, and the essential points of quality obtained. But men from such positions can only be said to be competent as judges in the department to which they have devoted attention, and should be appointed to adjudicate in that section of the show. By this arrangement in selection fewer judges would be necessary. This rule can only be adopted by societies in large centres, where the show is extensive and a number of judges requisite. Judges should receive no pay for their work except expenses; in fact, it ought to be considered a labour of love and a privilege to have the opportunity of doing a little service in promoting a taste for the cultivation of fruits and flowers. The officials of a society having obtained men qualified for the work, it becomes the competitors to acquiesce in the decisions, and submit with the best grace possible.

In offering the following suggestions and criticisms on judging it is strictly for the purpose of endeavouring to bring into conformity much controversial matter and disputed points which invariably arise during the labours of judges, and to seek to bring into harmony the views of exhibitors and judges to the characteristic points of merit in the different genera and varieties of plants, fruit and vegetables. I intend discussing

fruit and vegetables more particularly than plants and cut flowers at present, and would begin by alluding to what I may call a new departure in point-judging. It has occurred to me and many others that by the system of point judging at present practised real justice, where the competition is very close, is next to an impossibility. Judges generally prefer to use as few points as possible to save embarrassment and difficulty, hence the necessity of devising some means whereby a greater number may be used, and all doubt as to their application be removed. Some take one number of points and some another, say from four to nine as a maximum. The latter number would not do justice to a collection of eight varieties of fruit, far less twelve or fifteen. I will give one instance of the difficulty in registering the difference in value of two varieties of fruit in a mixed collection. Suppose it to be Peaches, and four points allowed for excellent fruit, these dishes being, we may say, almost equal; the only way then for the judge is to give the one the full complement, the other a point less, consequently bringing it down to the next grade, or on a level with Plums, Pears, or Apricots, for the want of some fractional part wherewith to place it in its proper position in relation to the other dish, or its true representative value as a part of the collection. In order to meet this any way of dividing points into fractional parts might be of advantage. Meanwhile, I propose a system for consideration which, if it were adopted, would as near as possible give every dish or exhibit its proper value—viz., by giving a certain number of marks for every sort, according to its relative value, assigning one mark to lowest, two to the next, so on till the whole are represented with the number approaching nearest their intrinsic or commercial worth, four points being the value of one mark.

I will try to explain this plan of judging by pointing out the merits of two imaginary collections of twelve varieties of fruit. These twenty-four dishes shall be not only all different varieties, but nearly separate sorts or genera, and represent nearly every sort of fruit generally grown and shown at our exhibitions. The collections shall be designated A and B, and consist of the following—Pine Apple, two dishes of Grapes, Melon, Peaches, Nectarines, Figs, Apricots, Pears, Plums, Apples, Cherries. We will suppose these fruits to be perfect examples of their kind, equal in cultivation, so that the work of judging them is narrowed down to the quality and appearance peculiar to each. Before proceeding to their work the judges should be supplied with ruled cards, having space on the left for names, then two columns, the one for marks, the other for points, with space on the right for remarks. When the judging has been completed the number of marks and points are added separately, the marks multiplied by four, taking in the points; the total points are then subtracted to find the difference between the collections. The judges would also have to settle before commencing the maximum number of marks to be given to each sort according to the esteem in which they are held as dessert fruits in the manner I will now describe in going over the collections. Someone may be apt to doubt whether four points are not too many to allow between, say, good Cherries and Apples, or any of the other kinds, but the effect of such difference is more apparent than real, from the large number of points employed through the whole collection. The highest possible number in the collection we have been considering is 112 points, not counting those kinds separately that receive an equal number of marks.

In the following tables the fruits are in each case named in this order—Pine, Grapes, Melon, Peach, Nectarine, Fig, Apricot, Pear, Plum, Apple, and Cherry, the "marks" in the first column showing the comparative value of the respective varieties, and the "points" in the second column the merit of the fruits shown, the difference in favour of Collection A being two points.

COLLECTION A.			COLLECTION B.		
	Marks.	Points.		Marks.	Points.
Queen	7		Smooth Cayenne	6	2
Madresfield Court	6		Black Hamburgh	5	3
Buckland Sweetwater ..	5	1	Golden Champion ..	6	
Best of All	5		Little Heath ..	4	2
Noblesse	3	3	Royal George ..	4	
Pitmaston Orange	4		Elfruge	3	3
Castle Kennedy	4		Brown Turkey ..	4	
Moorpark	3		Shipley	2	3
Jargonelle	3		Bon Chrétien ..	3	
Jefferson	3		Green Gage ..	2	3
Astrachan	1	3	Oslin	2	
Morello	3		Bigarreau	1	
	44	10		42	16
	4			4	
	188			184	
	184				

I will now pass on to a collection of eight varieties of Grapes, four black and four white, but instead of using six marks as we did for grapes in the collection of mixed fruit, three will be the number; as all are of the same class there is abundant scope to decide between good, bad, and indifferent. A rule to guide in assigning the marks to collections of plants, fruit, or vegetables, is their number, variety, and inequality of pro-

perties or values. Three marks should be the number employed for all collections of subjects belonging to the same order or class.

Before passing judgment on the merits of eight varieties of Grapes we will consider what the properties of a model bunch are. As to shape, some kinds are about as broad at the point as the shoulder; others, again, are broad and short. We will take the mean between these two extremes as a model of shape, say breadth at shoulders equal to two-thirds of its length, tapering downwards. Berries large, regular, well formed, and thickly coated with bloom. No footstalks or stems to be seen, unless the part attached to the wood supporting the bunch, which should be short and thick. The bunch itself to be compact, free from all blemishes of spot, rust, or rubbing.

The first matter in judging Grapes is to select and put against each other the best in point of cultivation and similarity. We will have at present the same varieties in opposition, that we may discuss their merits from a cultural standpoint, and it must not be supposed I disregard the importance of certain other varieties of Grapes, such as Gros Colman, Alicante, Lady Downe's, &c., although I have not included any of them in this collection for this reason. Grapes valuable for their late keeping qualities should be discouraged for early autumn shows, because they are seldom ripe although well coloured, and it is injudicious to try to ripen them for that purpose. The collection will comprise the following varieties—Muscat of Alexandria, Duke of Buccleuch, Foster's Seedling, Buckland Sweetwater, Madresfield Court, Black Hamburgh, Muscat Hamburgh, and Black Prince. These are all early or medium sorts, and well known.

COLLECTION A.			COLLECTION B.		
	Marks.	Points.		Marks.	Points.
Muscat of Alexandria.	3		Muscat of Alexandria.	2	2
Duke of Buccleuch	2	3	Duke of Buccleuch	3	
Foster's Seedling	2	2	Foster's Seedling	2	1
Buckland Sweetwater ..	2	3	Buckland Sweetwater ..	2	2
Madresfield Court	2	2	Madresfield Court	3	
Black Hamburgh	2	2	Black Hamburgh	3	
Muscat Hamburgh	2	3	Muscat Hamburgh	3	
Black Prince	2		Black Prince	1	3
	17	15		19	8
	4			4	
	88			84	
				83	

In favour of B, one point.

We will take Muscat of Alexandria first. The one in A collection is a perfect 4 lb. bunch, large equal berries, amber colour, entitled to the full complement of marks. The one in B collection, same size of bunch and berry, but wanting in colour to the extent of two points, A 3, B 2 2. The next is Duke of Buccleuch, both bunches equal in colour and size of berry, but that of B the larger of the two, A 2 3, B 3. Foster's Seedling comes next; it is not at the present a very handsome variety, and we will not consider it first-class here; the one in A collection a fair example, but not deserving of the highest value, say 2 2, that in B collection a shade behind the other, 2 1. Buckland Sweetwater, A good bunch, 2 3; B scarcely so well coloured, 2 2. Madresfield Court, a variety gaining favour every year as its cultivation is being better understood, comes next. Here B has a first-class example, large in bunch and berry, highly finished, receives full value; A is behind both in size of berry and thinner bloom, placing it two points behind the other; thus B 3, A 2 2. Black Hamburgh, the most common and useful of Grapes; A and B have both good, full, well-proportioned bunches, B has the best in point of colour; B 3, A 2 2. Muscat Hamburgh, a Grape of high quality, but not so easily grown as the Black Hamburgh; B's bunch is good, A's is equally good, a little loose; B 3, A 2 3. The last is Black Prince, a very good Sweetwater Grape, these two bunches are below the standard; A 4 points, B 5, then A 2, B 1 3.

(To be continued.)

ONCIDIUM INCURVUM.

WHERE fragrant Orchids are esteemed this should be accorded a place, in fact it is worth a position in any collection however limited. Its small mauve and white flowers are produced on a branched slender stem 3 or 4 feet in length, more than 2 feet of its length being covered with flowers. One good spike or two will perfume the air of a moderately sized house, and are most effective either for decoration or cutting, as the spikes are light and droop gracefully. It does well at the warmest end of the Odontoglossum house, and will succeed either in a pot or basket, the former being preferable if stage room is plentiful; if not, it can be most successfully cultivated in a basket suspended from the roof.

If grown in pots they should be filled at least half full of

drainage, for it is essential to make provision for the water supplied to pass away freely. If the soil is allowed to become sour or saturated, this variety soon presents a yellow sickly appearance which is unnatural to it, for when doing well the foliage is deep green in colour. The material used for potting should be peat fibre, which, if good, will be found to last in a healthy condition for several years. Charcoal in lumps may with advantage be used, and a little living sphagnum moss on the surface. The roots evidently like the moss, and are not long before they take full possession of it; but it is not wise to use it mixed with the peat for potting, because it decays too quickly and cannot be removed without disturbing the roots of the plants too much, and therefore causing an unnecessary check annually. When the moss is used only on the surface the majority can readily be removed when repotting or top-dressing the plants that may be grown in the same house. Potting and top-dressing is best done just as signs of growth are visible.

When the roots are active and growth luxuriant, liberal supplies of water should be given, but the supply must be gradually diminished as growth is being perfected. The supply in spring must also be as judiciously increased as the growth progresses. During the resting season very little water is needed, in fact only sufficient to keep the pseudo bulbs fresh and plump. If the soil about the roots is kept in a moist condition during the resting period they are very liable to perish, and in addition the plants do not receive a complete period of rest. This is essential if they are to bloom profusely and grow luxuriantly the following season. The longer the season of inactivity the better the plants flower and grow afterwards. A fair amount of light should be given, or the foliage draws up rather weakly. The amount of shade frequently given to *Odontoglossums* is rather too heavy for this *Oncidium*, but this can easily be managed by placing the plants of this variety in the lightest position the house affords. Light towards the close of the summer and in early autumn is of vital importance to mature the pseudo-bulbs that have been made.

This Orchid flowers freely in a young small state, but it is surprising how flowering retards the growth and progress of the plants, and therefore it is unwise to allow them to flower until they attain some strength. The flower spikes are a very long time developing, for they frequently make their appearance in spring, and five or six months usually elapse, under cool treatment, before the flowers are fully expanded.—W. D.

CONES AND BERRIES.

SOME are of opinion that a plentiful supply of fruit on the trees is a sure sign of a severe winter, but this is very rarely verified. I have noticed some extra severe winters occur when there were no Holly berries and other tree fruits were scarce, and the mildest winters are often preceded by extra heavy crops of fruit. No one need infer that we are certain to have a severe winter because berries are wonderfully plentiful this season. I cannot remember a time when they were more abundant, and I think the credit may be given to the fine summer of 1884, and the equally fine one of this year. The Mountain Ash was amongst the first of our trees to ripen its fruits. They came in huge clusters, and when ripe were exceedingly showy, but the birds soon demolished them. *Berberis Darwinii* was the next to mature, and the crop was wonderful. When this valuable bush is covered with its beautiful deep golden blossoms in early spring it is exceedingly pretty, but it is equally admirable when the multitude of berries gain their deep glaucous-purple hue in summer. The Hawthorn trees are fruiting abundantly, and Sloes and Nuts have full crops. The Holly trees are heavily laden with fruit in all positions, and Christmas berries will be most abundant this time. Some years I have seen our crops of these very partial, a tree in the open, or only one here and there producing fruit; but this season they are fruiting in sunshine and shade, and the branches are already bending down with their excessive load. The Arbutus and the Sweet Bay are also fruiting freely, and every tree which bears fruit appears to be unusually prolific just now. It is a pretty sight to see them with their heavy rich crops, and many of them are equally as attractive in fruit as they were in blossom.

The Conifers are also extra fruitful. The *Wellingtonia gigantea* in two instances here is producing many cones, and so is the Japanese Cedar, *Cryptomeria japonica*. *Araucaria imbricata* is producing cones in an unusually free manner, and the *Abies* and *Pinus* are very fruitful. The Stone Pine, *C. pinea*, bears cones pretty freely every year, but it is certainly more prolific than usual this season. I have noticed that more of the old cones have fallen off lately than usual, and it is very gratifying to observe that they are being succeeded by such quantities of fine young ones.—J. MUIR, *Margam Park, S. Wales.*

AMONGST THE NOVELTIES.

I wish to add a word or two to what I have written anent the novelties. I omitted to mention Early Milan Turnip, which I found an extremely handsome variety and the quickest grower I ever tried. Planted same day as Snowball, they were fourteen days earlier, but when

cooked I found them rather bitter. It has a very small neat top and is strap-leaved.

Veitch's Perfect Gem Lettuce I also omitted. It is very good for the summer, for it does not readily run to seed, and is of good quality. The leaves are of a very deep green colour, and it is very taking in appearance.

Girtford Giant Runner Bean.—Evidently I have not this variety true. Mr. Gilbert has quietly and severely reproved me for thinking badly of it by sending me by post four splendid Bean pods 8 inches long, as straight as a rule, and as tender as a chicken—better Beans I never saw. He did not write a line to say they were Girtford Giant, but no doubt they are, and that being the case it is a Bean well worth growing.

Sharpe's Victor Potato cannot be surpassed for frame work or earliness, combined with high quality, productiveness, and beauty. It is not a novelty exactly, but I am glad to recommend it. I see Mr. Laxton has a white Beauty of Hebron, which has done well. Sharpe's Duke of Albany is a white Beauty of Hebron also. The foliage, also shape, appearance, and when cooked quality, are identical with Beauty of Hebron. The colour, however, is white, which is an improvement. This year, however, some have thrown back to their parent, and one pink and white. It is a productive and good Potato.—H. S. EASTY.

INSECTS AND FRUIT TREE CANKER.

FURTHER investigation and experiments have strengthened and confirmed my previous experience—viz., that insects, and insects alone, are the first and only cause of canker in fruit trees. In confirmation of my views, and as a result of my experiments, I have to-day sent a parcel containing specimens of both Apple and Pear trees treated as I advised, containing specimens of fruit and the cankered places, especially on the Jargonelle Pear, where you will see the bough was almost deprived of sap communication; but by trimming out every bit of bark containing insects and dressing the place with Gishurst compound or soft soap, the bark recovered sufficiently to grow and bear well. The wonder is that such a small bit of bark would allow sufficient sap to support the bough some 6 or 8 feet long and the fruit. I am fully convinced that the bough would have died had it not been attended to, as the other specimens have, as shown, while others are lingering.

The best Applesent are from a tree which was about the worst case of canker I had, but by my treatment, without disturbing a root, or without a handful of fresh soil or anything else, except a top-dressing of manure, which all get alike, I have not a healthier tree on the place. The five Apples are from a bough about 2 feet 6 inches long, which is carrying nineteen more of similar size. The other sample of small Apples are from the next tree, of the same kind, similar situation, subsoil, drainage, top-dressing, &c., but the cankered places are not cut out, and the insects have full possession, and are gradually devouring the life out of it; but by my treatment I have not the slightest doubt that I could restore it to the same state of health as the other without disturbing a root.

Last winter I had specimens of cankered Apple trees from the Channel Islands, Ireland, and several parts of England, and in every case I found the same insect agency at work, and succeeded in getting one under the microscope on a rule measuring one-two hundredths of an inch. They are so small that nobody would notice them. My reason for writing is that I thought the specimens would interest you, and the specimen of Jargonelles would possibly interest persons at the Pear Conference if introduced.—J. HAM.

[The cure in the case of the Pear branch appears complete, and we are glad to see it, and the sufficiency of the narrow sap channel, about an eighth of an inch in width, is remarkable. We are fully aware of the spread of canker when no steps are taken to prevent it, and of the presence of insects. The question is, Are they the cause or the consequence of the canker? We are open to receive expressions of opinion on this subject, and are obliged to our correspondent for his investigations.]

THE SAGO PALM.

SAGO is nearly pure starch, obtained from various species of Indian Palms. In the Indian Archipelago it is procured from *Sagus Rumphii*, *Sagus lævis*, and *Sagus genuina*; on the Coromandel coast from *Phoenix farinifera*; in Ceylon from *Corypha umbraculifera*; and in Assam from *Caryota urens*.

These trees are cut down, and from the pith filling their stems the sago is extracted. The pith is thoroughly washed, and from the washing, when allowed to rest, the fecula or starch subsides; this is the sago flour of commerce, of which large quantities are used in the manufacture of calico. When used as food it is granulated, and known as pearl sago. Tapioca is really sago in lumps, and was so called merely because the French, who introduced it from India, named it *Sagou-tapioka*. About eight thousand tons of sago are annually imported.

Sagus Rumphii (fig. 38), is a small tree, comparatively speaking, not above 30 feet high. It is a native of the Indian Archipelago, particularly of Malacca, Borneo, Sumatra, Celebes, and the Moluccas. Before the tree has arrived at maturity the stem consists of a mere shell, about 2 inches thick, with a great mass of spongy pith, becoming gradually absorbed, and ultimately the stem remains hollow. At the time when the pith is

fully developed, and before it has begun to diminish, which is indicated by the superior leaves being covered with a sort of farina or white dust, the tree is felled, and the trunk cut into lengths of 6 or 7 feet long, which are split to admit of the pith being more easily removed. The pith is in the state of a coarse powder, and is mixed with water in a trough having a sieve at one end; the water, loaded with farina, passes through the sieve, and is received in convenient vessels, where it is allowed to stand till the insoluble matter has subsided. The water is then strained off, and the farina which is left may be dried into a kind of meal, or moulded into whatever shape may be desired. Sago, as it comes to this country, is prepared by forming the meal into a paste with water, and rubbing it into grains; it is produced in the greatest abundance in the Moluccas, but of the finest quality on the eastern coast of Sumatra. The Chinese

Madresfield Court if the former is really shown in finer condition than the latter?

The fact that the show is held in August or September is not the fault of exhibitors; and if they have fine Alicantes, why should they not get a reward for them, even though the season when they are best for use is far distant. If all Grapes were only shown when at their best for table use, Alicantes and Colman would never be exhibited before December, and Lady Downe's would never appear before March!

A fine, well-coloured, well-bloomed bunch of Alicantes shown in September is proof enough that the quality of the Grape will be good when used in, say, November or December. If superior in size, colour, and bloom to any bunch of Madresfield Court exhibited, why not give the Alicante the award?

If considerations such as Mr. Iggulden urges should be taken into account, were allowed to weigh with those who make up prize schedules,



Fig. 38.—SAGO PALM (*SAGUM RUMPHII*).

of Malacca refine it, so as to give it a fine pearly lustre, and large quantities are also prepared at Singapore. It is said that a single tree will yield from 500 to 600 lbs. of sago. Sago forms the principal food of the natives of the Moluccas. A decoction of sago fermented yields alcohol by distillation, and by ascension it forms vinegar. The fruit of this Palm is the size of a hen's egg. The base of the leafstalks is covered with long fibrous filaments, that serve to make cordage and sacking.

JUDGING GRAPES.

MR. IGGULDEN'S remarks on the above subject are very interesting, and there is sound advice contained in them on some of the points he discusses; but there are some of his remarks which appear to the writer hardly correct. For instance, when judges have to pass judgment on a number of black Grapes entered in a class for any other black variety, how can it be said that they are in error in placing Alicante before

there would be endless discussions as to when the different varieties should be allowed to compete. Granted that Alicante is easier grown than Madresfield Court, still, where great complexity is wished to be avoided in prize schedules, there can hardly be such distinctions drawn.

In shows where prizes for all the different varieties—or, at least, all those more generally grown—are offered, there is no ground for the complaint that a less ripe and more easily grown variety finds favour before one more fit for immediate use; but all societies cannot, or do not, care to afford such, and then recourse is had to the any other black variety, with the consequence that some growers are dissatisfied with judgments sometimes given.

If more shows were held about Christmas then there would not be the same excuse for showing late Grapes in August and September when not sufficiently ripe; but till such is the case there need not be any wonder displayed when people who have fine-looking Alicantes, Colman, or Lady Downe's show them in August or September in preference to not exhibiting them at all.

Errors in judging do occur, and sometimes gross ones; but that it is

an error to place Alicante before Madresfield Court at a show held in August or September simply because the former has not had time to attain its best edible condition, is not, in the opinion of the writer at least, correct. Size of bunch and berry, colour and bloom, being superior, why should Alicante go down before Madresfield Court simply because the latter has attained its edible qualities sooner than the other? There can be no doubt that as regards flavour Madresfield Court is superior to Alicante at all times, but that alone is not to be taken into account in a competition for "any other black variety." There can be no hard-and-fast rule laid down for Grape judging; common sense, knowledge, experience, and strict impartiality must be brought to bear, also a glance at circumstances that cause late Grapes not having attained their best as regards table qualities to be staged along with others that are more fit for use.—S.

A CLASSIFICATION OF GARDEN ROSES.

I WAS recently reminded how much a good general monograph of the genus *Rosa* is needed. Lindley's "Monograph" was published in the year 1820, and since then a great number of new species have been discovered, and a very large number of books and papers have been written bearing upon the subject in one way or another. The difficulty which one finds at the outset in using Lindley's book is that his primary groups are characterised so briefly, and that the points of contrast which they present are not fully and clearly brought out into view. The following key shows the best way of getting over these difficulties, which, after having had a large number of specimens through my hands during the last thirty years, I am able to suggest. The list of species is only intended to be exhaustive so far as garden Roses are concerned, with the addition of a few well-marked types not yet brought into cultivation. What I have aimed at is to give a separate number to well-marked types only, and to place under these the subspecies and varieties into which they deviate. Of course I am well aware that in *Rosa*, of all genera, even if independent observers work from the same standing point, it is not in the least likely that any two of them will draw the line between species and subspecies in the same way. What follows must therefore be taken as a rough draft of a very condensed guide to the determination and classification of the garden types.

ANALYTICAL KEY TO THE GROUPS.

Leaf simple, exstipulate. ... 1. SIMPLICIFOLIÆ.

Leaf compound, stipulate.

Styles forming a column, protruded beyond the disc. ... 2. SYSTYLÆ.

Styles not united nor protruded beyond the disc.

Stipules nearly free, deciduous. ... 3. BANKSIANÆ.

Stipules adnate above the middle, persistent.

DIACANTHÆ.—Main prickles in pairs at the base of the leaves.

Fruit persistently pilose. ... 4. BRACTEATÆ.

Fruit glabrous. ... 5. CINNAMOMÆ.

HETERACANTHÆ.—Prickles scattered, numerous, passing gradually into aciculi and setæ.

Leaves not rugose; large prickles long and slender. ... 6. PIMPINELLIFOLIÆ.

Leaves rugose, coriaceous; large prickles short and stout. ... 7. CENTIFOLIÆ.

HOMOCANTHÆ.—Prickles scattered, comparatively few, subequal.

Prickles slender; leaf not glandular below. ... 8. VILLOSE.

Prickles stout and hooked; leaf not glandular below. ... 9. CANINÆ.

Leaves very glandular beneath. ... 10. RUBIGINOSÆ.

CLASSIFIED ENUMERATION OF THE GARDEN SPECIES AND SUBSPECIES

Group I. SIMPLICIFOLIÆ.

1. *R. simplicifolia*, Salisb. (= *R. berberifolia*, Pallas = *Lewea berberifolia* Lindl. = *Hultheimia berberifolia*, Dumont).—Siberia and Persia.
R. Hardii, Paxt.—A hybrid between *berberifolia* and *laxa*.

Group II. SYSTYLÆ.

2. *R. repens*, Scop. (*R. arvensis*, Huds.).—Europe.
capreolata, Neill (the Ayrshire Rose).
3. *R. sempervirens*, Linn., South Europe and India.
prostrata, DC.
scandens, Miller.
Leschenaultiana, Thory and Redouté.
longicuspis, Bertol.
4. *R. moschata*, Miller.—Southern Europe and India.
Dupontii, Desegl. (*nivea*, Dupont).
Brunonii, Lindl.
5. *R. multiflora*, Thunb.—China and Japan.
polyantha, Siebold (Lucæ, Franch. and Rocheb.)
6. *R. abyssinica*, R. Br. (Schimperiana, Hochst., and Steud.).—Abyssinia
7. *R. phœnicea*, Boiss.—Orient.
8. *R. setigera*, Michx. (*rubifolia*, R. Br.), the Prairie Rose—United States.
9. *R. stylosa*, Desv. (*collina*, E. B.).—Europe.
lencichroa, Desv.
systyla, Bast.
Connects Groups II. and IX.

Group III. BANKSIANÆ.

11. *R. Banksiæ*, R. Br. (*inermis*, Roxb.).—China.
lutea, Lindl., *Bot. Reg.*, t. 1105.
12. *R. microcarpa*, Lindl. (*amoyensis*, Hance).—China.

13. *R. Fortuneana*, Lindl. in Paxt. *Flow. Gard.*, t. 171.—China.
14. *R. sinica*, Murr. (*lævigata*, Michx.; *ternata*, Poir.; *triphylia*, Roxb.; *nivea*, DC.; *cherokensis*, Donn.).—China.
hystrix, Lindl., *Mon.*, t. 17.

Group IV. BRACTEATÆ.

15. *R. bracteata*, Wendl. (the Macartney Rose).—China.
16. *R. involvcrata*, Roxb. (*Lyellii*, Lindl.; *palustris*, Hamilt.).—India.

Group V. CINNAMOMÆ.

In some of these there are only the pairs of prickles at the base of the leaves, but in several of the species there are few or many aciculi in addition. These latter form a connecting link between Groups V. and VI.

17. *R. cinnamomea*, Linn.—Europe and North Asia.
majalis, Retz.
davurica, Pallas.
18. *R. carolina*, Linn. (*corymbosa*, Ehrh.; *pennsylvanica*, Michx.; *Hudsoniana*, Red.).—North America.
19. *R. lucida*, Ehrh. (*baltica*, Roth.; *Rapa*, Bosc.).—North America.
20. *R. humilis*, Marsh. (*parviflora*, Ehrh.).—North America.
21. *R. nitida*, Willd.—North America.
22. *R. laxa*, Retz. (*clinophylla*, Red.).—Siberia.
23. *R. Woodsii*, Lindl. (*Maximiliani*, Nees).—North America, west side.
californica, C. and S.
pisocarpa, A. Gray.
Fendleri, Crépiau.
24. *R. nutkana*, Presl.—North-west America.
25. *R. gymnocarpa*, Nutt.—North America.
26. *R. anserinefolia*, Boiss.—Orient.
27. *R. Fedtschenkoana*, Regel.—Central Asia.
28. *R. rugosa*, Thunb. (*ferox*, Lawr.; *Regeliana*, Andre).—Japan and Siberia.
kamschatica, Vent.
29. *R. sericea*, Lindl.—India.
30. *R. microphylla*, Lindl.—China. Connects the Cinnamomæ and Bracteates.
R. Iwara, Siebold.—Supposed to be a hybrid between *rugosa* and *multiflora*.

Group VI. PIMPINELLIFOLIÆ.

31. *R. spinosissima*, L. (*pimpinellifolia*, L.; *scotica*, Miller).—Europe and Siberia.
altaica, Willd. (*grandiflora*, Lindl.).
myriacantha, DC.
32. *R. Webbiana*, Wall.—Himalayas.
33. *R. platyacantha*, Schrenk.—Central Asia.
34. *R. rubella*, Smith.—Europe.
stricta, Donn.
gentilis, Sternb.
reversa, W. and K.
These perhaps hybrids between *spinosissima* and *alpina*.
35. *R. hibernica*, Sm.—Ireland and England. Perhaps a hybrid between *spinosissima* and *canina*.
36. *R. involuta*, Sm.—Europe, principally Britain.
Sabini, Woods.
gracilis, Woods.
Wilsoni, Borrer.
37. *R. macrophylla*, Lindl.—India.
38. *R. alpina*, L. (*inermis*, Mill.).—Europe.
pendulina, L.
39. *R. blanda*, Ait.—North America.
fraxinifolia, Borkh.
arkansana, Porter.
40. *R. acicularis*, Lindl.—North Temperate Zone.
carelica, Fries.
Sayi, Schwein.
41. *R. hemisphærica*, Herm. (*glancophylla*, Ehrh.; *sulphurea*, Ait.; *Rapini*, Boiss.).—Orient.
42. *R. hispida*, Sims (*lutescens*, Pursh.).—Garden origin.

Group VII. CENTIFOLIÆ.

43. *R. gallica*, L. (*austriaca*, Crantz.).—Europe and Western Asia.
pumila, L. fil.
incarnata, Miller.
provincialis, Miller.
44. *R. centifolia*, Miller.—Orient.
muscosa, Miller.
pomponia, DC.
parvifolia, Ehrh. (*burgundica*, Rossig.; *remensis*, Desf.)
45. *R. damascena*, Miller (*bifera*, Pers.).—Orient.
belgica, Miller.
portlandica, Hort.
calendarnum, Moench.
variegata, Andrews.
46. *R. turbinata*, Ait. (*francofurtensis*, Desf.; *campanulata*, Ehrh.).—Garden origin, perhaps hybrid between *gallica* and *canina*.
R. hybrida, Schleich, and *R. arvensis*, Krock, probably hybrids between *gallica* and *arvensis*.

Group VIII. VILLOSE.

47. *R. villosa*, Linn. (*mollis*, Smith; *mollissima*, Fries).—North Europe. Numerous varieties.
pomifera, Herm.
48. *R. orientalis*, Dupont.—Orient.
49. *R. tomentosa*, Smith.—Europe. Numerous varieties.
foetida, Bast.
scabriuscula, Smith.
50. *R. spinulifolia*, Dematra.—Switzerland.
51. *R. Hackeliana*, Tratt.—South Europe.

Group IX. CANINÆ.

52. *R. canina*, Linn.—Europe, Orient. Varieties innumerable; 150 are

treated as species, with full synonymy, in Deséglise's catalogue of the Roses of Europe and Asia. One series of forms has erect subpersistent sepals, and another leaves slightly glandular beneath.

53. *R. alba*, L.—Garder origin, perhaps a hybrid between canina and gallica.

54. *R. rubrifolia*, Vill.—Europe.

55. *R. montana*, Chaix (Reynieri, Hall. fil.).—Central Europe.

56. *R. indica*, L. (chinensis, Jacq.).—Native country not clearly known.

fragens, Red. (odoratissima, Sweet).

semperflorens, Curt. (diversifolia, Vent; bengalensis, Pers.)

longifolia, Willd.

caryophyllea, Red.

minima, Curt. (Lawrenceana, Sweet).

anemoniflora, Hort.

R. Noisettiana, Seringe, and *R. Ternauxiana*, Ser., are supposed to be hybrids between indica and moschata; *R. borbonica*, Red, between indica and gallica; *R. reclinata*, Red. (Boursault Rose), between indica and alpina; *R. ruga*, Lindl., between indica and fragrans, and arvensis; and *R. Fortuneana*, Lemaire, *Jard. Fleur.*, t. 361, is doubtless also a hybrid, of which indica is one of the parents.

Group X. RUBIGINOSÆ.

57. *R. rubiginosa*, L. (Eglanteria, Miller; suaveolens, Pursh.).—Europe.

58. *R. micrantha*, Smith.—Europe.

59. *R. sepium*, Thuill.—Europe. Numerous varieties.

agrestis, Savi.

inodora, Fries (Klukii, Besser).

60. *R. ferox*, M. B.—North Asia.

61. *R. glutinosa*, S. and S. (pulverulenta, M. B.).—Orient.

62. *R. lutea*, Miller (Eglanteria, L.).—Orient.

punicea, Miller.

—J. G. BAKER, *Kew Herbarium*.—(*Gardeners' Chronicle*.)

A CHESHIRE FRUIT FARM.

"FARRALL's fruits always have command of the market." This was the popular expression at the market town where "Farmer Farrall" offered his produce. His Currants were plump and clean, the Black ones like Grapes, the Red ones like strings of coral, and the White ones transparent like big heads of amber. The Raspberries reminded one of trimble stands of purple velvet, so rich and luscious were the fruits, with such a delicate coating of bloom. Then the Strawberries. They were just perfection. Remarkable for size, colour, and flavour, it seemed impossible that anything could be better. Daintily packed in clean chip-wood quart punnets, arranged in large wooden trays, with all the freshness of the summer morning upon them, uncrushed and unbroken, one could not help but stay to admire, though a lingering look at such wares proved often a dangerous look, as it almost invariably ended in an investment. From the fruits themselves it is but a short step to fruit-growing, and enjoying a conversation with the "Farmer," we soon found we were talking to a thoroughly practical fruit-grower, who knew well what to do, when to do it, and how.

Availing myself of a spare evening, I paid a visit to the fruit farm from which such grand and encouraging results are obtained. Now, Cheshire has never had the reputation of being a very first-rate fruit county. The cheese tub rather than the orchard has been identified with the industry of Cheshire. As for Apples, well, there were plenty of Keswicks and other kinds "good for dumplings," but the orchard was allowed to grow its own fruit in its own way without care or cultivation, the dairymaid cook picking up the fruits from the ground as the wind scattered them to put them in their thick covering of flour and fat, and then the plethoric pudding was plunged into the boiler to await the return of men and lads with the keen appetite which one can find in the fields; and with the excellent sauce of hunger and health the smoking pile gradually became smaller and smaller until the iron spoon stood on the dish—the only thing uneaten. Under conditions such as these, believe me, the palate need not be tickled with fine flavours. Quantity is the first factor, quality is a secondary consideration. Hence the typical Cheshire Apple was a "gradely dumpling soart," but was not such as would commend itself to the pomologist or the fastidious connoisseur. Pears, too, in the older orchards were nothing much to boast of, grown mainly on old worn-out trees, mainly "Catherines" (Cattens as we called them in those days) with here and there a tall pyramidal "Bradford" of more recent introduction, or perhaps a tree here and there of Green Chisel, Swan's Egg, or Hessel where some attention was given to the cultivation of more kinds than were ordinarily found in the Farmer's garden. Of Plums we had either Winesours or Jacobs, and this was the Cheshire orchard. A Nut bush or two, a Cherry tree, and a "Brandy Apple" (a very shocking name locally bestowed upon the Red Quarrenden, presumably on account of its vinous flavour) might be found in some of the larger gardens, but these were not essentials.

The county, however, appears to have moved with the times, and the improvement is manifested in the marketing of fruits of better quality and in the increased demand for young fruit trees of the better kinds. In Apples Lord Suffield is taking the place of the old Keswick Codlin, and Blenheim Pippin, Dumelow's Seedling and fruits of this class are planted freely; whilst in Pears Louise Bonne of Jersey, Williams' Bon Chrétien, and the Beurrés are finding their way to the front. But this is getting away from the subject. I have been led to make digression simply to show that we have found that fruit can be grown in the county despite the prophesyings to the contrary; and though we cannot boast the climate of Kent or the shelter of the valley of the Midlands, we are able to grow Codlins and Pippins when we set our minds upon it.

I find the fruit farm now under consideration consists of about thirteen

acres, the greater part of which has only been planted some few years, so that it is gradually improving, but its present possibilities are of the most satisfactory character. There are, I should say, four acres of Strawberries, and one may study the fruit to perfection, for there is plenty of variety. Here is Sir Joseph Paxton, always a market favourite. It is shapely, solid, and well flavoured, and if gathered in dry weather it may safely be allowed to stand a couple of days, not only without fear of injury, but with a chance of its improving in quality. In another "break" is Forman's Excelsior, perhaps the best fruit in the garden. It is not a very heavy cropper, but is pretty well flavoured and in every way commendable. President, Sir Harry, Amy Robsart, Oxonian, Keens' Seedling all have their quarters and their points of excellence, and beside these we find a quarter devoted to the cultivation of some American varieties, but the flavour is not quite equal to English kinds. We must not omit reference to a large bed of Moffat's Duke of Edinburgh, perhaps the best late dessert Strawberry in the garden. It certainly looks beautiful, and with true ducal grandeur H.R.H. here sets off the Strawberry leaves to advantage.

The Raspberries were a wonderful show, and there must have been tons of Gooseberries of all kinds running up between the rows. Currants in clusters, and Apples, Plums, and Pears everywhere. The Victoria Plum trees are so heavily laden with fruit that the boughs are broken. Of Denbigh Seedling there is an excellent crop, while some young pyramids of the Pershore Plum are making good promise. I can scarcely convey a proper idea of the crops borne by the Plums. Many of the trees have to be supported, and the drooping boughs are hidden by the clusters which crowd them.

The Apples are wonderfully fine. Many of the trees are quite young, and most of them have carried such a weight of fruit that they have had to be thinned to prevent disaster. The Worcester Pearmain gives its warmth of rosy colour in the lines, whilst Ecklinville, Mère de Ménage, Maltster, and other popular varieties hold important places in the collection.

There are more Pears than I could venture to calculate. In the old orchard long lines of Hesses and some of the older dessert varieties are prominent heavily laden. In the new garden Louise Bonne of Jersey, Jargonelle, Beurré Diel, Beurré d'Amanlis, and several trees of Fertility showing sufficient title to their name. Pears are grown here to perfection. Rightly gathered and carefully stored they are not surpassed for either size or quality by any I have seen from any English county. As a proof of their excellence I may mention that last year for the crop of Beurré d'Amanlis from this garden, 3d. per lb. wholesale was realised.

There is much more to see and say, for every department is thoroughly represented, but time flies, and there are limits to editorial patience. But one word about the house. Here there are facilities for storing and packing, and this is an essential feature which must not be overlooked. The absolute cleanliness of all arrangements connected with the packing gives a finishing grace which cannot be despised, however well the fruit may be grown. The farm I have described is situated in the Wirral division of the county, within reach of good market towns, and is upon the cold clay of the district, is not sheltered in any way, but is open to the sweeping winds from the coast, and yet the experience of every year adds its unmistakable weight of practical testimony to the fact that fruit of best quality, and in great quantity, can be successfully grown, and that just now no industry is more productive than a well managed fruit farm. It would be out of place here probably to give further details of the daily round of duty, but as I walked through the fields in the cool of the evening to catch the train at the nearest station, I thought there could be no more healthy or desirable occupation than that of dressing and keeping a garden, and I found that I had learned why Farrall's fruits have command of the market.—JOHN EDMUNDS.

CRYSTAL PALACE FRUIT SHOW.

SEPTEMBER 4TH AND 5TH.

THE annual Exhibition of fruits at the great and popular Sydenham Palace is always looked forward to by horticulturists as one of the leading events of the year, and the majority of the leading gardeners of the southern counties endeavour to obtain a place in the list of prizewinners. This season the credit and fame of the Show was most satisfactorily maintained, for it was generally pronounced to be one of the best "all-round shows" held for some years. There were necessarily some exhibits of greatly inferior merit, but the most striking feature was the general evenness of quality of the produce staged, which rendered the competition in all the chief classes very close. This is exactly what should be expected at such an important leading exhibition, and there is no doubt that the liberality of the Company in offering substantial prizes has contributed in a very large degree to the success which has attended their efforts to obtain a thoroughly representative fruit show. Much praise is also due to the Superintendent, Mr. W. G. Head, for the careful and methodical manner in which all the arrangements were conducted, for the judicious management of the innumerable details connected with an exhibition of this character is essential to insure satisfactory results.

Two long tables were devoted to the fruit in competition, the central lines between the collections being occupied with Palms, Ferns, and other plants that served to break the uniformity which would have otherwise prevailed. A fringe of baize or similar material along the edges of the tables would have been advantageous, as it would have concealed the boxes, baskets, and packages used by the exhibitors, and which were rather too noticeable. As regards the exhibits, there was a good proportion of the different kinds, but Grapes were especially well shown, and some magnificently finished examples of black Grapes were entered, Muscat of Alexandria being also admirably shown, particularly by Mr. Lowry, who deservedly gained the premier prize in a large class with that variety. Some good general collections of fruit were staged, and Peaches, Nectarines Plums

Apples, and Pears were all represented by numerous and praiseworthy samples.

COLLECTIONS.—The leading class in the schedule was provided for a collection of not less than twenty dishes, and in this there were six competitors, all showing well. Some little taste had been exercised in arranging several of these, sprays of *Ampelopsis Veitchii*, *Myrsiphyllum asparagoides*, and the common Barberry being placed between the dishes with very good effect, but in nearly every case *Vitis* leaves were employed in the dishes for placing the fruit upon. Premier honours were after a careful consideration awarded to Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, who exhibited some very fine fruits not only in this, but in other classes, and was one of the most successful of all the competitors. In the collection he had the following Grapes—Black Hamburg, very handsome; Alnwick Seedling, beautifully coloured; White Tokay, well ripened; and Muscat of Alexandria, good bunches of fine colour. Two handsome even fruits of Queen and Smooth Cayenne Pine Apples were included, together with Transparent Gages, Brown Turkey Figs, Red Astrachan Apples, William Tillery Melon, Morello Cherries, Sea Eagle and Nectarine Peaches, Victoria and Lord Napier Nectarines, Williams' Bon Chrétien Pears, Moorpark Apricots, Kirke's Plums, and Quatre Saisons Strawberries, all of which were distinguished by their good quality. Very closely followed Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, whose best dishes were Black Hamburg and Madresfield Court Grapes, both handsome bunches, and the latter superbly coloured; two large Charlotte Rothschild Pine Apples, Pond's Seedling Plum, McLaughlin's Gage, Garibaldi Strawberries, Meredith's and Bailey's Green Flesh Melons, Moorpark Apricots, Brown Turkey Figs, Mr. Gladstone Apples, with Peaches, Nectarines, &c. A few points behind was Mr. H. W. Ward, gardener to the Right Hon. the Earl of Radnor, Longford Castle, Salisbury, who was third with an even and highly creditable collection, comprising noteworthy examples of the following—Black Prince, Foster's Seedling, and Muscat of Alexandria Grapes, all well ripened; Queen and Smooth Cayenne Pine Apples, Brunswick Figs, Bellegarde Peaches, Hero of Lockinge Melon, Moorpark Apricots, Kirke's Plums, Green Gages, Morello Cherries, and Cox's Golden Gem Melon.

There were five competitors with collections of twelve dishes, first honours being obtained by Mr. Coomber, gardener to J. A. Rolls, Esq., The Hendre, Monmouth, with excellent fruits of the following varieties:—Muscat of Alexandria and Gros Maroc Grapes, both good, but the latter particularly well coloured; Royal George Peaches, Lord Napier Nectarines, Smooth Cayenne Pine Apple, La Grosse Sucrée Strawberries, Brunswick Figs, Reine Claude Violette Plum, Clapp's Favourite Pears, a large Melon, and some less important fruits. The second place was assigned to Mr. G. T. Miles, Wycombe Abbey Gardens, who also had some admirable fruits, his Grapes being especially fine. Three bunches of Muscat of Alexandria weighed 7 lbs., and three of Foster's Seedling 8½ lbs., both well finished. Other good exhibits were Jefferson Plums, Sea Eagle Peaches, Moor Park Apricots, Devonshire Quarenden Apples, Hero of Lockinge Melon, and Smooth Cayenne Pine Apple. Third honours were adjudged to Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton Court, Trowbridge, who showed very well, his strongest points being the Black Hamburg and Trebbiano Grapes, Downton Nectarine, and Best of All Melon.

A class was also provided for eight dishes, in which the competition was keen; Mr. Pratt, Longleat Gardens, Warminster, securing leading honours with Muscat of Alexandria Grapes, very large in bunch and berry and finely coloured. The Black Hamburg Grapes were also very fine, but had been slightly rubbed; Brunswick Figs, Windsor Pears, Pitmaston Orange Nectarines, Noblesse Peaches, Jefferson Plums, and a large Melon. Mr. Edmonds, Bestwood Lodge Gardens, Arnold, Notts, followed, showing Muscat of Alexandria and Alicante Grapes, very fine; Barrington Peaches, good; Violette Hâtive Nectarines, and Brown Turkey Figs. Mr. Elphinstone, gardener to E. M. Munday, Esq., Shipley Hall, Derby, was third with a praiseworthy collection, his Black Hamburg and Muscat of Alexandria Grapes being especially good, the Pine Apple Nectarines, Brown Turkey Figs, and Moor Park Apricots were also fine.

GRAPES.—An excellent display of Grapes was provided in the classes devoted to them, but the black Grapes were generally the best, with a few exceptions in favour of Muscat of Alexandria. The principal class was that for ten varieties; and though this is one that must necessarily be confined to comparatively few competitors, five exhibitors entered the list, and the contest for the first place was sufficiently close to render it very interesting. Mr. J. Roberts proved victorious with a fine even collection, every bunch being clean, well ripened, and, though not of unusual size, they afforded ample proofs of excellent culture. The varieties were Alnwick Seedling, of fine colour; Trebbiano, even, medium size bunches; Gros Maroc, very large berries of grand colour; Muscat of Alexandria, even bunches of medium size and fine colour; Black Hamburg, very large berries, handsomely coloured; Foster's Seedling, finely ripened; Madresfield Court, handsome colour, good bunches; Buckland Sweetwater, large berries, and good compact bunch; and Lady Downe's, medium size, and capital colour. Mr. H. W. Ward was adjudged second honours for well-coloured bunches of Black Hamburg, Alicante, Foster's Seedling, Gros Maroc, very fine; Muscat of Alexandria, Mrs. Pince, Buckland Sweetwater, Gros Guillaume, Syrian, and Black Prince. The third prize was obtained by Mr. J. Wallis, gardener to the Rev. W. Sneyd, Keele Hall, Newcastle, Staffs, whose varieties were Alicante, Alnwick Seedling, very fine; Foster's Seedling, Golden Queen, Gros Maroc, Gros Guillaume, Madresfield Court, Black Hamburg, Muscat of Alexandria, and Buckland Sweetwater.

Half a dozen exhibitors also entered with five varieties of Grapes, and this time Mr. Pratt took the lead with a very handsome collection of fine bunches of the following varieties:—Lady Downe's; Mrs. Pince, large bunches, and good colour; Black Hamburg, extremely large bunches; Muscat of Alexandria, grand bunches, and berries of fine colour; Alicante, medium berries, large bunch of fine colour. Mr. J. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, won second honours with Gros Maroc, Black Hamburg, Muscat of Alexandria, Madresfield Court, handsome bunches and berries; and Alnwick Seedling, neat bunches. Mr. A. Smith, gardener to W. H. Seville, Esq., Warren Hill, Loughton, Essex, was third, his best bunches being Gros Colman and Alicante.

Black Hamburg.—In several of the classes devoted to special varieties

competition was very keen, and it was particularly so in those for Black Hamburgs and Muscat of Alexandria, which keep the foremost place as useful Grapes. There were eleven exhibitors of Black Hamburg, and the majority of these were good examples both as regards size of bunch and finish. Mr. Pratt was first with extremely large bunches bearing a beautiful bloom, but the berries were not above medium size. Mr. J. Bury, Tewkesbury Lodge Gardens, Forest Hill, was second, also with large bunches and medium berries of good colour; Mr. F. Jordan, gardener to B. Foster, Esq., The Hill, Witley, Godalming, being third with smaller but capitally coloured bunches.

Muscat of Alexandria.—The same number of competitors entered in this as in the preceding class, but though the bunches were large they were, with the exception of the first, rather deficient in finish, and there was in two or three cases a too perceptible greenness that did not add to their beauty. Mr. J. J. Lowry, gardener to J. Macandrew, Esq., Belmont, Mill Hill, Hendon, was awarded first honours for three superb compact even bunches, large in berry, clean, and beautifully coloured. They were greatly admired, and Mr. Lowry deserves much credit for the production of such fine samples of this Grape. Mr. P. H. Edwards, gardener to D. P. Blaine, Esq., Fowley, Liphook, Hants, followed, also with large bunches, but not quite so well set or coloured; Mr. Pratt being third with fine bunches wanting in colour.

Gros Colman.—Only two entered with this variety. Mr. H. Dawes, gardener to the Hon. Mrs. Meynell Ingram, being first with handsome bunches and berries; and Mr. W. Elphinstone was third with small examples. It is probable that this class will be cut out another year in favour of one for Gros Maroc, which was so well represented in the general collections.

Madresfield Court.—This beautiful Grape was shown by four competitors but now its merits are becoming known we might almost expect a stronger contest; probably, however, many have not quite mastered its culture yet. Mr. Goodacre was first with even, compact, and handsomely coloured bunches. Mr. J. Hudson followed very closely, and Mr. H. Folkes, gardener to T. T. Halsey, Esq., Hemel Hempstead, was third with smaller bunches but fairly coloured.

Alicante.—Eleven entries of Alicante provided a keen competition, the majority of the exhibits being so nearly equal that there was little to judge between them as regards colour and finish. Mr. Howe, gardener to Henry Tait, Esq., Park Hill, Streatham Common, was first with three large bunches, weighing 16 lbs. Mr. Pratt was second; Mr. T. Osman, gardener to N. L. L. Baker, Esq., Ottershaw Park, Chertsey, was third; and an extra prize was awarded to Mr. Neighbour, Bickley Park.

Any other White variety.—In this and the following class there was the same number of entries as in that just noted. Mr. Osman took the lead with White Frontignan, three long fine even bunches, superbly coloured of a rich amber tint. Mr. H. Folkes, gardener to T. F. Halsey, Esq., Gaddesden Place, Hemel Hempstead, was second with Golden Queen, not very "golden" in colour, and Mr. J. Roberts was third with Buckland Sweetwater, with wonderfully large berries but not ripe. Other varieties well shown in this class were Trebbiano and Foster's Seedling.

Any other Black variety.—Three fine bunches of Gros Guillaume, weighing 21 lbs., gained Mr. Davies, of Temple Newsome, Leeds, the premier award in this class. Mr. Roberts was second with very handsome specimens of Gros Maroc, superbly coloured, and Messrs. Thomas Rivers & Son, Sawbridgeworth, were third with the same variety nearly as good. Other exhibitors had Alnwick Seedling, Lady Downe's, and "Cooper's Black," the latter bearing a dense blue bloom.

The competition was very close in the class for a basket of black Grapes, no less than ten entering, and the Judges had not an easy task to determine the relative positions of the exhibits. Ultimately, however, Mr. C. J. Salter, gardener to J. Southgate, Esq., Selborne, Streatham, was awarded the first prize for very handsome bunches of Black Hamburg, the berries of great size and beautifully coloured. Mr. C. Osman was placed second with Alicante, bearing a dense bloom; and Mr. Hudson was third with Alnwick Seedling and Madresfield Court, also good. There were only five exhibitors with a basket of white Grapes, Mr. Goldsmith, Kelsey Gardens, Beckenham, being first with Muscat of Alexandria, finely ripened; Mr. Pratt second with the same variety; and Mr. S. Castle, West Lynn, Norfolk, was third with Buckland Sweetwater, very large in bunch and berry.

MELONS.—In the two classes for scarlet and green flesh Melons there were respectively nineteen and fourteen entries, so that the Judges had a formidable task. In the scarlet variety class Mr. Bailey, Shardeloes, Amersham, was first with Victory of Bristol, followed by Mr. G. Bootbroyd, gardener to H. Coleman, Esq., Woodville, Dover, with Scarlet Gem; and Mr. Gilman, gardener to the Earl of Shrewsbury and Talbot, Ingestre Hall, with a neat unnamed variety. The leading green flesh variety was Best of All, from Mr. R. Spinks, Victoria Road, Horley, Mr. Bailey being second with Golden Queen, and Mr. Ward third with Cox's Golden Gem.

PEACHES AND NECTARINES.—In the principal class for six varieties of Peaches and Nectarines there was only one exhibitor, Messrs. T. Rivers and Son, who had handsome fruits of the following varieties:—Peaches—Exquisite, Madeleine, Blanche, Bellegarde, Raymackers, English Galande, and Prince of Wales; Nectarines—Byron, Pine Apple, Oway, Newton, Orange, and Victoria. There were, however, six competitors with four dishes of Peaches, and five with the same number of Nectarines. Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, took first honours with large handsome examples of Barrington, Prince of Wales, Princess of Wales, and Bellegarde. Mr. Goodacre was second with smaller but better coloured fruits, and Mr. Roberts was third. The last-named exhibitor was, however, first in the Nectarine class with excellent fruits of Victoria, Pitmaston Orange, Pine Apple, and Lord Napier. Messrs. Divers and Goodacre followed. The one-dish class brought thirteen competitors with Peaches and nine with Nectarines, the winners being as follows:—Peaches—Mr. A. Gibson, gardener to T. F. B. Atkins, Esq., Halstead Place, Sevenoaks, with Barrington, very fine. Mr. S. Pullman, Frampton Court Gardens, Dorchester, was second with Early Admirable, and Mr. G. Holliday, gardener to J. Norris, Esq., Castle Hill, Bletchingley, third with Violette Hâtive. The best Nectarines were Pine Apple from Mr. Pullman, Messrs. Evans and Divers following with the same variety, not quite so well coloured.

PLUMS.—As might be expected in such a good season as the present one the entries were numerous in the three classes devoted to Plums; but the fruits with a few exceptions were not unusually fine, and some were rather small. For four dishes of Red Plums, Mr. J. Neighbour was first amongst seven competitors with good fruits of Cooper's, Pond's Seedling, Cox's Empress, and Victoria. Mr. Goodacre was second, his best varieties being Angalina Burdett, Pond's Seedling, and Victoria. Messrs. T. Rivers & Son followed, showing Belle de Louvain, Sultan, Prince of Wales, and Nectarine. There were nine exhibitors of Yellow and Green Plums, Mr. J. Wells, Feru-hill, Winkfield, securing the leading place with Green Gages, Oullins Golden Gage (extremely fine), Jefferson, and Webster's Green Gage. Mr. Chadwick, Hanger Hill House, Ealing, was second, his best dish being Washington. Mr. Neighbour followed, showing Coe's Golden Drop, Washington, and white Magnum Bonum. Six collections of four dishes of Purple Plums were staged, Mr. G. Holliday, gardener to J. Norris, Esq., Bletchingley, leading with Purple Gage, Bradshaw, Quetsche, and Kirke's. Messrs. T. Rivers & Son took the second place with Belgian Purple, Grebê, Prince Englebert, and Reins Victoria; Mr. Goodacre, who was third, having fine fruits of Kirke's, Prince Englebert, and Old Orleans.

PEARS.—The display of Pears was not a large one, nor were the majority of the fruits of remarkable size; in fact, it was noticeable that the examples of many of the varieties were undersized. Still, there were fine fruits in some of the collections, and some of the best of these were from Mr. Butler, Orchard House Gardens, Sittingbourne, who has on previous occasions shown some handsome specimens from cordon-trained trees. He was first in the class for ten varieties, five fruits of each, with the following varieties, very fine:—Doyenné Boussoch, Beurré de l'Assomption, Conseiller du Cour, Pitmaston Duchess, Clapp's Favourite, Windsor, Beurré Hardy, Louise Bonne of Jersey, Williams' Bon Chrétien, and Beurré d'Amanlis. Messrs. Rivers & Son were second, their best fruits being Clapp's Favourite, Williams' Bon Chrétien, and Souvenir du Congrès. Mr. Waterman took the third place, having Gausel's Bergamot, Grosse Calebass, and Williams' Bon Chrétien in good condition. With three dishes of Pears Mr. Butler was again first, showing Williams' Bon Chrétien, Windsor, and Desiré Cornet. Mr. Waterman followed, his best fruits being Williams' Bon Chrétien; and Mr. Divers was third for Souvenir du Congrès, Pitmaston Duchess, and Clapp's Favourite.

APPLES.—In the general collections of fruits there were few good dishes of Apples, except the well known useful Devonshire Quarrenden and the Red Astrachan, but in the classes devoted to Apples there were some fine fruits of the leading culinary varieties. Mr. H. Waterman, who was first with twelve dishes, six dessert and six culinary varieties, had the following:—Lord Suffield, Gloria Mundi, Stirling Castle, Blenheim Pippin, Tower of Glamis, Warner's King, Worcester Pearmain, Red Astrachan, King of the Pippins, Gravenstein, Duchess's Favourite, and Devonshire Quarrenden. Messrs. T. Rivers & Son were awarded the second prize for fine examples of Lord Suffield, Hawthornden, Stirling Castle, Cellini, Worcester Pearmain, Duchess of Oldenburg, and Irish Peach. Mr. Layzell took the third prize with Blenheim Pippin, English Codlin, Alfriston, and Emperor Alexander amongst others. For three dishes of Apples Mr. Butler was first with Hunt's Early, Worcester Pearmain, and Red Astrachan, all finely coloured. Mr. Waterman followed, showing Devonshire Quarrenden, Astrachan, and Duchess of Oldenburg. Mr. Layzell being third.

MISCELLANEOUS.—A class was provided for a collection of fruit from fruiterers, in which the prizes were £12, £8, and £4. Mr. G. Wingfield, 37, Market Street, Brighton, was awarded the first prize for a very large and handsome collection of fine fruits, comprising all the best of those in season. Mr. G. Wood, 75, St. James Street, W., was third with a smaller but good collection. There were only two exhibitors of Pine Apples—namely, Mr. G. T. Miles and Mr. Goodacre, who were awarded the prizes in that order. There was also only one exhibitor of Figs, Mr. Wallis, who was awarded the first prize for Yellow Ischia and Osborn's Prolific.

With six dishes of Tomatoes Mr. C. J. Goldsmith was first with Stamfordian, Old Red, The Trophy, Acme, Reading Perfection, and Hathaway's Excelsior, all exceedingly fine even fruits. Mr. Goodacre secured the second place with Red Italian, Excelsior, Hackwood Park, Dedham Favourite, and Chiswick Red, nearly equal to the first in merit. Mr. S. Castle was third with Sutton's Conqueror, Chiswick Red, Old Red, Reading Perfection, Carters' Green Gage, and Dedham Favourite.

The non-competing exhibits comprised the following:—A large general collection of well-grown fruits from Mr. J. Neighbour, Bickley. Samples of the Dartmouth Crab, a pretty crimson fruit with a bloom like a Plum, from Mr. Laxton, Bedford. Mr. W. Salmon, 2, Ivy Cottages, Eldon Road, Lower Norwood, showed a twin fruit of Duke of Albany Cucumber. Mr. J. Butler, Orchard Lane Gardens, Sittingbourne, showed some beautiful fruits of Windsor and Clapp's Favourite Pears from cordon trees. Mr. James Don, 20, Chapel Row, Nottingham, sent tubers of a Potato called Village Blacksmith, a round variety with a rough brown skin.

GROUPS AND CUT FLOWERS.

One of the most prominent of the groups sent for competition was the magnificent collection of Tuberous Begonias from Messrs. J. Laing & Co., Forest Hill, which comprised a large number of their choicest single and double varieties arranged with Ferns, Isolepis, &c. Messrs. Kelway & Co., Langport, Somerset, had a grand collection of Gladioli spikes, representing some scores of their best varieties. Mr. Alexander Campbell, Gourcock, N.B., also had a superb collection of massive spikes of Gladioli, including some grand varieties. The Rev. H. H. D'Ombra, Westwell Vicarage, Ashford, had the best of the amateurs' collections of Gladioli, handsome spikes of good varieties. Three groups of early-flowering Chrysanthemums were shown, Mr. W. Piercy, Forest Hill, being first, followed by Mr. H. James and Mr. N. Davis, Camberwell. Hollyhocks, Asters, and miscellaneous cut flowers were also well represented by numerous exhibitors.

NATIONAL DAHLIA SHOW.

ANOTHER success was scored by the National Dahlia Society with its annual Exhibition on September 4th and 5th. It was held in conjunction with the Fruit Show above noted. There was plenty of competition in the majority of the classes, and the quality of the flowers was excellent—in fact, quite equal to that of former years. The general effect of the Show was

inferior to last year, owing to its being held in the central transept of the Palace, which dwarfs the Show by its magnitude. It has a compensating advantage, however, in allowing more room for the large number of visitors than is afforded by a marquee, and no doubt the management had this in view in holding the Exhibition in the Palace itself. Its popularity is evidenced by the immense number of persons who visited it both on Friday and Saturday. Appended are particulars of the awards.

NURSERYMEN'S CLASSES. Show Varieties.—Mr. Charles Turner, Royal Nurseries, Slough, was placed first in the principal class, that for forty-eight blooms, showing the following varieties:—Back row—Hon. Mrs. P. Wyndham, George Rawlings, Constancy, Imperial, Mrs. Kendal, Henry Walton, Prince Bismarck, Mrs. Foreman, Burgundy, Champion Rollo, J. N. Keynes, Georgina, William Rawlings, James Stephen, Mrs. Langtry, and Miss Cannell. Middle Row—Sunbeam, Mrs. Gladstone, Hope, John Bennett, Mrs. Henshaw, Rosetta, Canary, Seraph, T. G. Saltmarsh, James Cocker, Clara, Joseph Ashby, Mrs. Hodgson, Lady Wimborne, Julia Wyatt, and Statesman. Front row—Ruby Gem, Mrs. Hodson, Chris. Ridley, Muris, Mrs. Douglas, Mrs. S. Hibberd, Prince of Denmark, Lady Gladys Herbert, John Standish, Joseph B. Service, Senator, Mrs. Harris, Harry Turner, Mr. G. Harris, Goldfinder, and Joseph Green. The names are given in the order the blooms were placed. This was a splendid collection, the flowers being large and symmetrical, of good substance, and bright and clear in colour. They were in fact fully equal to those shown by this firm in former years. Second prize was deservedly awarded to Mr. William Boston, Manor Farm Nurseries, Carthorps, Bedale. Some grand blooms were noticeable in this stand, and throughout they were of good size and shape; but they were not so fresh as those of the premier exhibitor, a circumstance which is no doubt mainly due to the long distance they had to be sent. The third prize was awarded to Messrs. Harkness & Sons, Grange Nursery, Bedale, who showed smaller but even blooms; and the fourth to Messrs. Keynes, Williams, & Co., Salisbury. Five stands were staged in this class. For twenty distinct varieties Messrs. Saltmarsh & Son, The Nurseries, Chelmsford, secured the premier prize with fresh medium-sized blooms of the following varieties:—Back row—Ethel Britton (a very fine bloom), J. Standish, Joseph Service, Hon. Mrs. P. Wyndham, Mrs. Dodds, James Cocker, Goldfinder, and Criterion. Middle row—Joseph Ashby, Lady G. Herbert, J. Lamont, Mrs. Gladstone (a beautiful flower), Shirley Hibberd, Constancy, Mrs. Harris, and Henry Walton. Front row—Mrs. Hodgson, Revival, Sunbeam, Mrs. Harris, J. N. Keynes, Hope, Earl of Beaconsfield, and Mrs. Shirley Hibberd. The second prize was adjudged to Messrs. Rawlings Brothers, Old Church, Romford, whose blooms were beautifully fresh and bright. Messrs. Paul & Son, Old Nurseries, Cheshunt, and Messrs. Cheal & Son, Lowfield Nurseries, Crawley, Sussex, were awarded third and fourth prizes respectively. One other collection was shown. Mr. J. Walker, 7 and 8, High Street, Thame, occupied the leading position in the class for twelve Show blooms. Good flowers of the following were shown:—Back row—Champion Rollo, William Rawlings, Mrs. Gladstone, and John Standish. Middle row—George Rawlings, Earl of Ravensworth, James Cocker, and Hon. Mrs. P. Wyndham. Front row—George Bennett, William Green, Mrs. J. Foreman, and Monarch. Messrs. James Gilbert & Son, St. Margaret's Nursery, Ipswich, who won the second prize, also showed well, good blooms of James Stephen, Hon. Mrs. P. Wyndham, and J. C. Quennell being noteworthy. Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, were placed third, and Mr. G. Humphries, Kingston Langley, Chippenham, fourth.

Fancy Varieties.—In this section the principal class was that for twenty-four blooms, and Mr. Turner was again to the fore, showing magnificently. Shapely blooms of good size, clean and fresh, were those from the Slough Nurseries. They were arranged as follows:—Back row—Rev. J. B. M. Camm, Annie Pritchard, Romeo (a splendid flower), Miss Annie Milsome, Hy. Glascock, Fredk. Smith, Grand Sultan, and Gaiety. Middle row—Miss Browning, W. G. Head, Chas. Wyatt, Professor Fawcett, Duchess of Albany (very fine specimen), Peacock, Edward Peck, and Mrs. Saunders. Front row—Robert Burns, Jas. O'Brien, General Gordon, Miss Lily Large, Rebecca, Laura Haslam, Geo. Barnes, and Chorister. Messrs. Keynes, Williams & Co. were adjudged the second prize for smaller blooms, which, however, vied with the first-prize flowers for freshness and purity. Mr. Wm. Boston was placed third, his collection including several excellent blooms; and Mr. Hy. Clark, Rodley, near Leeds, secured the remaining prize. Messrs. Rawlings Bros. occupied the leading position with twelve blooms, good specimens of the following being represented:—Back row—Gaiety, Egyptian Prince, Lottie Eckford, and Peacock. Middle row—Frank Pearce, Polly Sandell, Professor Fawcett, and Mrs. Saunders. Front row—Mrs. Carter, Mrs. Steven, Annie, and Gem. Messrs. Saltmarsh & Son were placed second, Messrs. Cheal & Sons third, and Messrs. Paul & Son fourth, all showing well, the first named particularly so. Eight collections were staged in this class.

AMATEURS' CLASSES.

Show Varieties.—The principal class for amateurs brought out several admirable collections. Mr. G. Boothroyde, gardener to Hy. Coleman, Esq., Woodville, Dover, being awarded the chief prize. He showed fresh symmetrical blooms of good size, the following varieties being staged:—Front row—Jas. Cocker, Harrison Weir, Geo. Rawlings, Clara, Hon. Mrs. P. Wyndham, Rev. J. Goddard, Ethel Britton, and Prince Bismarck. Middle row—Miss Cannell, Lady Gladys Herbert, Vice President, Henry Walton, Mrs. G. Harris, Goldfinder, Earl of Beaconsfield, and Mrs. Gladstone. Front row—J. Standish, Miss Henshaw, Fredk. Rawlings, Mrs. Harris, John Bennett, Flag of Truce, J. Henshaw, and Mrs. Dodds. Mr. John Spoor, Prospect Cottage, Musgrave, Low Fell, Gateshead, staged some fine blooms, Seraph, Mrs. Gladstone, Clara, and James Vick being particularly good. He was awarded second prize. Mr. H. Glascock, Rye Street, Bishops Stortford, was placed third, showing well; and Mr. J. Nation, Whitmore, Staplegrave, Taunton, fourth. Eight collections were shown. Mr. J. T. West, gardener to W. Keith, Esq., Cornwallis, Brentwood, was placed first for twelve blooms, good specimens of John Henshaw, Prince Bismarck, and Mrs. Gladstone being included in his stand. Mr. John Walker, Alum Well Road, Low Fell, Gateshead, was second; Mr. J. Tranter, Upper Assenden, Henley-on-Thames, third; and Mr. Thos. Garratt, Bishops Stortford, fourth. Ten collections were in competition in this class. Good blooms of Mrs. Harris, Emperor, Ethel Britton, Prince of Denmark, Goldfinder, and Mr. G. Har is

composed the first-prize stand of Mr. Jonathan Harris, Broomfield, Chelmsford, in the class for six specimens; Mr. Tunbridge, gardener to the Rev. — Trimer, Broomfield, Chelmsford, was awarded the second prize for six nice flowers, the third going to Mr. W. H. Apthorpe, Albion Brewery, Cambridge, and the fourth to Mr. Thos. Coote, North Terrace, Bishops Stortford. Eleven collections were staged.

Fancy Varieties.—Two classes were provided for these, and some exceedingly handsome collections were staged in each. Mr. Glasscock showed splendid blooms in the class for twelve varieties, and was adjudged first prize. Mr. Robert Petfield, Diddington, Hants, who was second, also showed well; Mr. Henry Vincent, gardener to John Hart, Esq., The Poplars, Keymer, being third; and Mr. B. Clark, Shottisham, Norfolk, fourth. Mr. W. Steer, 2 Hamilton Terrace, New Eltham, Kent, was to the fore with six Fancy varieties, showing well; Messrs. Boothroyde, Garratt, and West taking second, third, and fourth prizes in the order named.

The Turner Memorial prize, a handsome silver cup, was won by Mr. Glasscock. Unfortunately no one opposed him, much regret being expressed at the prize going without a struggle. This disappointment appeared to be experienced somewhat keenly by several cautious ones who had abstained from entering under the impression that the opposition would be overpoweringly strong. The conditions stated that twelve Show and six Fancy blooms were to be staged, and moderate specimens of the following were represented:—Show varieties (back row)—Geo. Rawlings, Miss Cannell, Imperial, and Hon. Mrs. P. Wyndham. Middle row—Mrs. Gladstone, Shirley Hibberd, Mrs. H. Glasscock, and Thomas Goodwin. Front row—Prince of Denmark, Cyprus, Senator, and Mrs. Harris. The Fancy varieties were H. Glasscock, Peacock, Professor Fawcett, Rev. J. B. M. Camm, Mrs. Carter, and Lottie Eckford.

OPEN CLASSES.—Classes were provided respectively for the best Show and the best Fancy blooms in the Show. The former was not difficult to find, a magnificent specimen of Mrs. Gladstone in Mr. J. Tranter's third prize collection of twelve readily securing the honour. It was a large and beautifully symmetrical flower, in fact we have never seen one more perfect. A specimen of this fine variety won similar honours last year. The best Fancy flower was a new and beautiful variety from Messrs. Rawlings Bros., named Frank Pearce, which is described amongst the certificated varieties.

Pompon Varieties.—Messrs. Keynes, Williams & Co. showed these increasingly popular kinds splendidly. Ten blooms of each variety were arranged in bunches with their own foliage, and they looked exceedingly pretty. The following varieties were represented in their first-prize collection of twenty-four. Back row—Lady Blanche, Darkness, Golden Gem, Rosetta, Flora Macdonald, Gem, Dora, and The Khedive. Middle row—Favourite, Mlle. F. Faconet, Isabel, E. F. Jungker, Little Prince, Catherine, Sappho, and Wilhelm Nitsche. Front row—Brunette, Little Bobby, Fanny Weiner, Nemesis, Mabel, Garnet, Cupid, and White Aster. Mr. Turner was a fair second, his flowers, though smaller, being fresh, and Messrs. Rawlings Bros. took the third prize. Messrs. Jas. Gilbert & Son secured the premier prize in the class for twelve varieties. They showed the following. Back row—H. Milesky, Guiding Star, Gem, Lady Blanche, Little Mabel, and Handelsgartner. Front row—Sensation, Little Bobby, Pure Love, J. E. O. Enke, Garnet, and Cupid. These were very prettily arranged. Messrs. Paul & Son were a very good second, and Messrs. F. T. Smith & Co., West Dulwich, third. The corresponding class for six varieties saw Messrs. J. Burrell & Co. to the fore with the following—Gem, White Aster, Coquette, Titania, Prince of Liliputians, and Little Duchess, all of which were well represented. Mr. West took the second prize, Mr. J. Walker the third, and Mr. G. Humphries the fourth.

Single Varieties.—These were particularly good, there being plenty of competition in the two classes provided for them. Four collections were staged; in that for twelve varieties the premier prize was awarded to Messrs. Cheal & Sons for the following:—Back row—Silver King, Queen of Singles, Chas. Laws, and Juno. Middle row—Negress, Alba Perfecta, Brutus, and Fashion. Front row—Henry Irving, Formosa, Sunset, and Paragon. These flowers were also arranged in bunches of ten, and were of very large size and good substance. A very fine stand from Mr. Turner secured the second prize, and third and fourth places were occupied respectively by Messrs. Keynes, Williams & Co., and Mr. Walker, Thame.

Messrs. J. Gilbert & Son were to the fore in the class for six sorts, taking first prize with the following, which were admirably shown—Lucy Ireland, Dr. Moffatt, Charles Laws, Mrs. Castle, White Queen, and Mrs. Bowman. Messrs. J. Burrell & Co. were a good second; Mr. W. Jones, gardener to J. S. Pope, Esq., Cedar Lodge, Bath, third; and Mr. Fred Hooper, Vine Nursery, Widcombe Hill, Bath, fourth.

The following novelties received first-class certificates:—

Pelican (Keynes).—Fancy; white ground, flaked with mauve; a large substantial flower.

Bird of Passage (Rawlings).—Show; white, tipped with pink; a medium-sized, shapely flower.

Frank Pearce (Rawlings).—Fancy; pale crimson streaked with maroon; of good substance and fine form.

Mrs. John Walker (Rawlings).—Show; white or blush tinged with purple; a medium-sized bloom.

Mr. Glasscock (Rawlings).—Show; rich crimson, very large and symmetrical; a good addition to the reds.

Mrs. G. Rawlings (Rawlings).—Show; white or blush, tipped with rosy crimson; a medium-sized flower of good form.

A large and attractive collection of Dahlias from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, formed a notable feature of the miscellaneous exhibits. Messrs. H. Cannell & Sons, The Home for Flowers, Swanley, also exhibited a splendid group of Dahlias and Begonias. The collection was large and admirably arranged.

GATHERING APPLES AND PEARS.

SEPTEMBER and October are busy months in this respect where the fruit trees are numerous and the crops good. There will be few excessive crops to harvest this year, but average ones of both Apples and Pears are common. Many varieties are almost matured now, and others will continue to become so for the next six weeks or more. As a rule, when

gathering the fruit from a tree the whole crop is taken, never staying to consider whether the fruits are all ripe or not. In the case of Peaches, Plums, Apricots, &c., we always find that some fruits ripen days and sometimes weeks before others on the same tree; and so it is with Apples and Pears; and to secure these, more especially the best kinds, in proper condition, they should be gathered at different times as they become ripe, and not all together, as is too often the case. As a rule the largest fruits and that most exposed to the sun ripens first, and this should be collected before any which may be unripe on the shady side or centre of the tree. Keswick Codlins and some other early varieties which will not keep long need not have this rule applied to them very rigidly; but good and long-keeping sorts, and especially those for dessert, should have the utmost attention in this respect. It is an easy matter to collect the fruit from small dwarf trees, as no steps or ladders are required, nor shaking the branches, which is a great advantage, as it is often a difficult matter to place a heavy ladder against a large tree without knocking off a quantity of the fruit, ripe and unripe. Light ladders only should be used for this work, and the utmost care should be taken in handling them. There should never be any attempt at shaking the fruit from the branches unless it is to be used for cider-making. No fruit will keep well which is in any way bruised, and all which are injured should be put to one side for immediate use. The more valuable the fruit is, and the more perfect it is desired to keep it, the more careful must the specimens be handled. Some varieties we put into large hampers and carry them to the fruit room, but others are placed in a single layer on hay in a tray or basket. Very ripe and valuable Pears should all be collected in this way. It is hardly necessary to say that the fruit must be perfectly dry when taken in, and when many are ripening fast they should be examined every alternate day, or twice weekly, to secure the fruit before it falls. When stored at first much ventilation may be provided until the fruit and atmosphere are quite dry, then the closer they can be kept the better.—A KITCHEN GARDENER.



WE are informed by Mr. Cutler, Secretary to the Gardeners' Royal Benevolent Institution, that a LEGACY OF £100, free of duty, has been left to the Institution by the late J. S. Law, Esq., of South Lodge, Enfield. This is an example which many more who have the means would do well to imitate.

— A MEETING of the General Committee of the NATIONAL CHRYS-ANTHEMUM SOCIETY was held on Monday last, at the Old Four Swans, Bishopsgate Street Within, at 7.30 P.M., by the President of the Society (E. Sanderson, Esq.), R. Ballantine, Esq., occupying the vice-chair. Mr. Holmes announced the death of one of the Society's judges (Mr. Charles Turner of Slough), and Mr. Ballantine proposed that, as this was the first assembling of the Committee since that event had occurred, that a vote of condolence with the family of Mr. Turner be passed, which was seconded by Mr. Kendall, and passed unanimously. It was announced that the Veitch Memorial medal and a cheque for the £5 accompanying it had been received. This handsome prize, it will be remembered, is to be offered for competition in Class 12 of the Society's schedule. The nomination and election of new members then followed. Mr. Holmes next took the opportunity of acquainting the meeting that application had been made by the different affiliated societies for sixteen of the N. C. S. medals, and it was resolved that he be authorised to have them struck. A model of the intended medal was submitted for inspection.

— A LINCOLNSHIRE correspondent writes as follows respecting THE WEATHER AND CROPS IN THE NORTH—"There has been no such exhausting drought here as in the south. The trees, hedges and fields are refreshingly green, like spring. Fields of Turnips full and luxuriant, and Potatoes looking as well as can be desired. The grain crops are mostly cut but still in the fields. They are very good. Fine weather is wanted for storing them. We have had a drenching rain to-day, and the weather has been more or less showery for a week past; indeed it has been so all the season, or vegetation could not be so luxuriant. Vegetables plentiful. Fine Onions 6d. per stone. Apples abundant, and selling at the same price. Plums 1d. per lb. It is like a land of plenty compared with the scorched fields and dried-up gardens in the south."

— THE SIXTH ANNUAL CRYPTOGAMIC AND BOTANICAL MEETING OF THE ESSEX FIELD CLUB will be held on Friday and Saturday, the 2nd and 3rd of October, 1885, in Epping Forest. It is intended to devote

the Friday to the collecting of specimens, and to their examination and arrangement by the experts, and on the Saturday to hold an Exhibition of fresh and preserved botanical specimens, microscopical objects, drawings, &c. The Exhibition will be mainly confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. The Exhibition will be opened at four o'clock on Saturday, October 3rd, in the large ballroom attached to the Roebuck Inn, Buckhurst Hill. Ample time will thus be afforded for its careful examination by the visitors present, and all possible facilities will be given to exhibitors. The arrangement of the mycological specimens will, as usual, be under the control of Dr. M. C. Cooke, Mr. Worthington Smith, Mr. Warton, and other well-known fungologists. The management of the microscopical department will be in the hands of Mr. Frederick Oxley, F.R.M.S., and others.

— "C. R." writes—"OMPHALODES LUCILLÆ does fairly well here planted between large pieces of limestone. As to slugs, I have tried what is, so far, a certain preventive. It consists of a collar of sheet zinc bound near the top by a ring of copper wire. It should then be pressed into the soil so as to leave no entrance for the slugs."

— In the COLLECTION OF GLADIOLI AT THE CRYSTAL PALACE from Mr. Alex. E. Campbell, Cove Gardens, Gourock, N.B., were many handsome varieties, which being especially well grown showed their characters most effectively. A few of the best are the following, which are selected chiefly for the distinctness of the shades and the massiveness of the spikes—Adolphe Brongniart, rose tinted orange; Amalthea, white tinted violet; Archduchess Maria Christina, white tinted lilac; Belladonna, white shaded with lilac and carmine; De Mirbel, rose, very handsome; Dido, white with a lilac tint; Horace Vernet, brilliant red, very bright and showy; Ida, white with a carmine shade; Marie Dumortier, white streaked with rose; Marquis of Lothian, rich rose colour; Ondine, white violet spots; Princess Mary of Cambridge, white with carmine spot; and Rossina, rosy red, white spots.

— MR. J. MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, AUGUST, 1885.—Mean temperature of month, 56.0°. Maximum on the 16th, 74.8°; minimum on the 15th, 36.3°. Maximum in the sun on the 6th, 128.8°; minimum on the grass on the 15th, 29.0°. Mean temperature of air at 9 A.M., 56.8. Mean temperature of soil 1 foot deep, 58.3°. Warmest day the 10th; coldest day the 27th. Total duration of sunshine in the month, ninety-four hours, or 21 per cent. of possible. We had eight sunless days. Total rainfall, 2.58 inches. Rain fell on ten days. Average velocity of wind, 8.4 miles per hour; exceeded 400 miles on two days; fell short of 100 on six days. Temperature, both mean and extreme have been considerably lower than in any of the previous nine years. Sunshine, less than in any of the last four years, and not half as much as last year. Rainfall about the average. Number of rainy days small. Sunshine much needed for fruit and fruit trees.

— A GIGANTIC CLIMBER.—BAUHINIA VAHLII, the stem of which sometimes attains a circumference of 5 feet (!) is thus noticed in the proceedings of the Horticultural Society of India. From Captain Pogson, enclosing a letter to him from Mr. Smythies, Deputy Conservator of Forests, Dehra Doon, and forwarding a parcel of Bauhinia Vahlia seeds. Mr. Smythies says, "This is one of the commonest climbers in India, and has a wide range. I should be glad if the natives would eat the seeds, pluck all the leaves, and cut down all the stems of this climber in our forests. We wage war against it, and have already cleared a considerable tract in Rangrah of this weed. The stem is sometimes 5 feet in girth, and the leaves range up to 18 inches in diameter. We annually grant a large sum for the destruction of this climber, and eventually shall exterminate it; but it will be a work of time. In the open forests, I am afraid, it will remain for ever."

—THE ANNUAL DUNDEE FLOWER SHOW, under the auspices of the Dundee Horticultural Society, was opened in the Drill Hall last Thursday. The season having been favourable, there was a magnificent display in every department; and the general opinion that the Show was one of the best ever held by the Society was amply confirmed by the Judges, who unanimously declared the Exhibition to be superior to that of any provincial town. There were 220 competitors, and the entries numbered 1906, classified thus:—Plants, 222; cut flowers, 487; fruit, 405; vegetables, 656; and honey, 136. Though the weather was showery there was a large attendance of visitors during the day, and in the evening the hall

was crowded. A sum of £51 was taken at the gates. The Show remained open till Saturday night.

— THE groups of EARLY-FLOWERING CHRYSANTHEMUMS AT THE CRYSTAL PALACE SHOW last week, though not arranged to the best advantage, included some very pretty varieties which are particularly useful at this time of year. The white Mrs. Cullingford, the yellow Flora, the purple La Bien Aimée, together with Early Blush, nanum, and G. Wermig, were noticeable varieties. The best of all, however, was the floriferous Madame Desgranges, of which some very beautiful plants were shown, one from Mr. G. Christmas being uncommonly good in habit and number of blooms. By the exercise of a little taste some attractive groups could have been arranged, but very little was shown by any of the exhibitors.

— At the Sydenham Show last week Mr. W. E. Bennett, Condoover, Shrewsbury, exhibited the SIMPLESS FLOWER POT CLEANSER, which attracted much attention from the gardeners present. It is a simple machine in the form of a tank, with two cylindrical brushes of different length side by side, which are turned by a handle, quickly and effectively cleansing the inside and outside surfaces of a pot at the same time. By the assistance of this cleanser, which is easily managed, pots of any size can be rapidly and thoroughly washed, a matter which is often of considerable importance in gardens when other work is pressing and labour is limited.

— IN preparation for the NATIONAL PEAR CONFERENCE, to be held at Chiswick in October this year, cards are being issued with spaces for giving the name, season, average fertility, stock, and general description. These are intended to be used by exhibitors for each separate dish or variety submitted. Exhibitors will be requested to fill in the required particulars wherever it is possible to do so. Where the name of the variety or the stock may be unknown the space may be left blank. The cards being numbered, exhibitors should, in packing their fruit, use a corresponding number with each variety. At the close of the Exhibition these cards will be collected and retained by the Committee for future reference. A form to be filled up by exhibitors has also been prepared, which are intended to give the following information:—Exhibitor's name and address. Number of varieties exhibited. Situation where grown, sheltered or otherwise, aspect, &c. Character of soil, subsoil, &c. Selection of varieties most suited to district, arranged for the following seasons—viz., July and August, three varieties; September, three varieties; October, six varieties; November, six varieties; December, six varieties; January to March, six varieties. Selection of varieties suited for orchard cultivation, not exceeding twelve. Selection of stewing Pears, four varieties. General remarks, as to modes of cultivation, pruning, stocks, &c. By means of these forms, which can be had on application to Mr. A. F. Barron, it is hoped that a great amount of useful information will be obtained for subsequent classification.

PINKS FOR FORCING.

ALL who desire a good supply of sweet fragrant white flowers in succession during the spring months should establish in from 3 to 6-inch pots a quantity of the common white garden variety and Mrs. Sinkins. If a coloured variety is also appreciated Ascot may be used, for it strikes root freely, flowers profusely, and is a good grower. The sooner these are well established the earlier they can be forced into flower, and if cuttings are inserted or plants potted now they will be well established before winter. The plants for 3 and 4-inch pots should be raised by inserting six or eight cuttings in each pot, which will soon strike root in moderately sandy soil if well watered, kept close and shaded in a cold frame for about a fortnight. The cuttings root best when taken off with a portion of the old wood attached. The plants for 5 and 6-inch pots should be lifted from the borders, and if small pieces were planted out last autumn or spring for this purpose they will be large enough and may be potted without division. If plants of a suitable size do not exist large clumps may be lifted, divided, and potted, placing a little sand about their stems, from which they will soon commence to form fresh roots. Those lifted with a good quantity of active roots and carefully placed in pots may be stood in a shady position outside until they have commenced to root afresh, when they should occupy an open sunny position. The divided plants containing few if any fibry roots should, if possible, be kept close and shaded in a cold frame until root activity has commenced. When lifted at this season of the year the plants very soon establish themselves

and are better in a suitable outside position than kept in frames. These plants start better and more quickly into growth after they have been subjected to one or two good sharp frosts than is the case if protected from early frosts by a frame.

If plants suitable for decoration in pots are not desired and the flowers only wanted in a cut state, it is not worth going to the trouble of establishing them in pots, for they do wonderfully well when good clumps are lifted and placed in boxes. The most suitable boxes for these are those about 18 inches in length, 9 inches wide, and not less than 4 inches deep. These will each accommodate four or five good plants, and more if they are only of a small size. The treatment after placing them in boxes should be the same as advised for those to be grown in pots, which entirely depends upon the quantity of fibry roots the plants possess when lifted. Those grown for this purpose in boxes need no farther staking than placing two or three short stakes round the sides of the box, one or two rows of thin matting being placed round to keep the outer flower stems from falling about. Those grown in pots for room and conservatory decoration have each flower stem supported with a slender portion of cane.

For the benefit of those that have not forced these plants it may be added that they must not be into flower in a close confined atmosphere, or they will become weakly and produce only poor flowers, if any. The earliest should be started in December on a shelf close to the glass where the night temperature ranges from 45° to 50° until they commence growing, when a few degrees higher than the last-named temperature may be maintained until they come into flower, providing a circulation of air is daily admitted to the plants when the weather will allow of such being done. I have always found a shelf in an early vinery or Peach house just started to work an admirable position for them until they are lengthening out their flower stems, by which time the atmosphere of the vinery is often too confined for them. The plants should then be removed to a cooler and more airy position. Very often those grown in boxes are not removed from these positions until the flowers have been cut, for they are no worse for cutting even if the flower stems are slightly drawn, which would totally destroy the beauty of those grown for decoration in pots.—W. D.

HIMALAYAN WINDFLOWERS.

OF the Windflowers inhabiting the Himalayan Mountains, numbering about fifteen altogether, probably not more than half a dozen are in cultivation at the present time, and that notwithstanding the large amount of seeds of various kinds imported annually from these localities. Those already introduced are much admired, and especially those with such a wealth of foliage and bold appearance as in the present instance. The wonder is that more attention is not given to collecting seeds of the others, many of which are said to far surpass those already introduced as useful garden plants. Those annually received from the south of France, &c., and which belong to the *Anemone* group, seldom if ever give satisfaction to the grower unless on the very lightest and sandiest soils or in a particularly favourable situation. Where the locality is damp and the soil clayey, success is almost impossible, and even if they grow they must be lifted when they have flowered, submitted to a process of roasting, stored away for a time, and then replanted, all of which entails a large amount of labour, the more so if grown in quantity, hardly to be tolerated in the average garden, especially at so busy a season of the year. Some of the Himalayan species not yet introduced are just as brightly coloured as the European sorts, besides having the advantage of being perfectly hardy in all situations; indeed, the situations worst suited to *A. coronaria*, *A. fulgens*, &c., are just the places in which the others thrive best; the cooler and more shady, provided the drainage be good, the better will they grow and flower.

A handsome plant is *A. polyanthes*, of which a good illustration is given in fig. 39, and which has been generally distributed under the name *A. obtusiloba*; that differing, however, from *A. polyanthes* in having oblong unwinged fruit, fewer-flowered scapes, and having purplish or golden instead of white flowers. *A. polyanthes* grows about a foot to 18 inches in height, with a wealth of fine ornamental foliage not equalled by any we know. The flowers are produced in bunches of from six to eighteen, umbel fashion, on longish scapes. The flowers are rarely less than an inch in diameter, pure white, firm-textured, and lasting a considerable time in a cut state. It loves shade, plenty of moisture in rather a heavy but rich soil. The leaves are deciduous; the crown, though exposed, requiring no protection, as it is found at altitudes of from 10,000 to 12,000 feet above sea level from Kashmir to Sikkim, flowering during the early

summer months. It is nearly allied to the better known *A. narcissiflora*, and is thought to be connected with that species by *intermedialis* (syn. *A. longiscapa*, Wall.; *Scaposa*, Edg.; *villosa*, and *Govaniana* Royle). The others in cultivation are *A. vitifolia*, *A. rivularis*, and *A. narcissiflora*, &c.—M. S.

TOMATOES IN AUTUMN.

SPEAKING from experience and extensive observation, Tomatoes have often succeeded better out of doors than they have done this season. The plants did not start so freely into growth after being turned out as they ought to have done, and this retarded their fruiting until later than usual. I know of several instances where they were bearing ripe fruit against the open wall in July last year, and plants in the same position have hardly as yet a ripe fruit on them. A good start is everything in outdoor Tomato-growing, because as soon as the plants become robust and established thoroughly, they will fruit, whether the summer and autumn are favourable or not. Open-air plants, if properly managed, will yet produce much fine fruit, and more attention should now be devoted to getting the fruit ripe that is formed than in trying to secure more fruit. Any which may form now and after this time will never mature or become large enough to cut and ripen indoors in October, and the best treatment open-air plants can have now is to stop all young growths, allow no more blooms to form or open, and thin the leaves off which are shading the fruit. Ripen what is on them, but do not try for any more. As soon as fruits of fair size begin to change colour, cut them off and put them in a greenhouse or room to finish ripening. It would not increase in size much if left on, and it will colour and be as well flavoured if ripened as we suggest as it would be on the plants, so long as they are not cut until colouring commences. When they are watered at the roots liquid manure may be given them, but it is better not to give much as the days shorten, for the fruit will swell almost as well and not be so liable to decay prematurely if the plants are kept rather dry at the roots.

When there is much rain it may be difficult to observe this rule, but in that case we would place some spare frame lights over the plants to afford shelter and hasten the ripening of the fruits. Last autumn we had ripe Tomatoes in the open until the middle of November through putting lights against the wall and over the plants.

Where Tomatoes are wanted very early in the spring, the best way to secure plants for the purpose is to take cuttings during September, root them in 3-inch pots, keep them in these until the new year, and then give them more heat and root room, when they will start rapidly into growth and bear ripe fruit sooner than any plants which can be raised from seed in the spring. If many varieties have been grown this season, and one has proved superior to all the rest, it might not do to save seed of it with the hope of still having it true, as they sometimes degenerate a little by being crossed with others, but if stock cuttings are taken in autumn the genuine sort will be secured beyond doubt.—A KITCHEN GARDENER.

BATH FLORAL FETE.

SEPTEMBER 2ND AND 3RD.

ONE of the finest exhibitions of the year, as the Show in question undoubtedly was, opened under somewhat depressing circumstances, rain falling more or less heavily throughout the first day, and towards evening it descended in torrents. The Mayor of the city, however, in the course of his eloquent speech at the luncheon, remarked as an expression of consolation, that what was a misfortune to them was a blessing to others. Yet though it was not possible to suppress feelings of disappointment that such a splendid Exhibition could not be enjoyed by the thousands of persons who were longing to see it, there was no despondency, the Committee appearing to take cheerful refuge in the hope of "a brighter day to-morrow."

It were almost impossible to imagine a more suitable position for a show than Sydney Gardens, Bath, which are extensive, pleasingly undulated, and abound in fine trees. So plentiful are these, that the marquees in which the products are arranged are quite masked, the system being adopted of isolating them in different parts of the grounds. When the weather is fine a brilliant company invariably assembles, promenading the embowered walks and admiring the plants, fruit, flowers, and vegetables as the different tents are reached, while, at the same time, the crowd is divided in the most agreeable manner. The show in question was the largest ever held, splendid examples of culture being arranged in every department.

PLANTS.—The long marquee, which covers a series of grass terraces on which the specimens are arranged, presented a beautiful appearance, magnificent Fuchsias (such as are only seen in the west of England) alternating with grand stove and greenhouse plants from Mr. Cypher and other exhibitors. The Fuchsias were accorded the post of honour in the schedule, the first five classes being devoted to them. In the class for nine plants the prizes were £6, £4, and £2, and they were won respectively by Mr. Snell, gardener to Mrs. Counsell; Mr. Lye, gardener to the Hon. Mrs. Hay; and Mr. Tucker, gardener to Major W. P. Clarke. The first-prize plants were characterised by a free gracefulness in training, fine foliage, and large flowers. They were 7 to 8 feet in height and 4 to 5 feet in diameter across the base. Mr. Lye's plants were close columns 9 to 10 feet high, about 2 feet in diameter at the base, and terminating in a point like a church spire. They were perfectly furnished, and every inch covered with flowers, and apart from the "close lacing" were less vigorous than the others. Mr. Tucker's plants were still taller but rather less full and vigorous. The last-named exhibitor secured the first prize in both the light and dark single specimen class with Charming (dark) and Arabella (light) 9 to 10 feet high, Mr. Lye following with smaller but admirably grown specimens. Mr. Hall, gardener to C. H. May, Esq., was first with six plants; Mr. Sonthard, gardener to F. J. Walker, Esq., second; and Mr.

Riddick, gardener to Mrs. Pinder, third; and for four plants the prizes fell to Messrs. Wilcox, Hawkins, and Drummond. The best plants in these classes were splendidly grown and trained, and the worst far superior to the best that are seen at metropolitan and the great majority of provincial shows.

fine bold freely branching variety; Acme, Load-me-well, Charming, bold and graceful; Elegance, Hon. Mrs. Hay, and Final, both very fine—in fact, all were highly effective. *Lights*: Marginata, Mrs. Bright, Lettie Lye, Harriet Lye, Emily Lye, Mrs. Rundle, and Arabella. Mr. Lye was awarded a certificate for some beautiful seedlings not yet named. The plants are



Fig. 39.—ANEMONE POLYANTHES.

In the production of such striking examples of culture as were exhibited in every class, the first consideration is selecting strong-growing yet free-flowering varieties. There are numbers of Fuchsias with the most beautiful flowers individually that are not suitable for large specimens. The most prominent varieties in the several classes were—*Darks*: Doel's Favourite, a

ripened, pruned, started under glass, and stood in the open air in June, hence their sturdy growth and floriferous nature; and cultivators who produce such plants as those referred to deserve all they win.

In the class for nine stove and greenhouse plants Mr. Cypher won chief honours with specimens that have never been excelled in September—

Allamandas, Stephanotis, Lapageria alba, and Ericas being delightfully fresh. Mr. Long, gardener to C. Gardiner, Esq., was an admirable second, and too much praise can hardly be accorded to the grower for producing such specimens in what we believe is a very small garden. Anthrums Andreanum and Schertzerianum were both fine; Ixoras and Rondeletias bright and good. Mr. J. Mould was placed third, staging Erica Marnockiana in superb condition, E. insignis being also fine, and Dipladenias very good. We understand the Judges desired to give an extra prize in this class, but the rain put a stop to all such awards. Mr. Hale well won the first prize in the class for six plants with admirably grown examples of Allamanda Hendersoni, A. nobilis, Ixoras floribunda nana and Fraseri, a finely coloured Bougainvillea, and a good Clerodendron. There was no prize card on the second collection. Mr. Tucker was third. Mr. James, gardener to General Doherty, were prizetakers in another class, the former staging a charming example of Dipladenia boliviensis, and the latter the good old Cassia corymbosa. Mr. Cypher staged the best single specimen stove plant, a splendid globe studded with rich golden flowers of Allamanda grandiflora, Mr. Long following closely with Ixora Williamsi. The best specimen greenhouse plant was Mr. Cypher's Phœnocomma prolifera Barnesi, and the best stove plant Cycas circinalis from the same exhibitor, who was also pre-eminent with twelve fine-foliaged plants—a grand collection in which Croton Sunset was magnificent. Mr. Tudgey was second, and Mr. Mould third. For six plants the prizes went to Messrs. Hall and Drummond respectively. Only two collections of Orchids were staged, Mr. Cypher being in his usual position with Saccolabium Blumei majus with six racemes, Cypripedium Parishii, Odontoglossum grande, Aerides Rohaniana, Oncidium Gardnerianum, and Cattleya Eldorado. Mr. Drummond followed, his best plant being Cattleya Gaskelliana. The prize for the best new or rare plant was awarded to Mr. Cypher for Aerides Lawrencei, a splendid variety, with very large richly tipped flowers.

Ferns were staged in first-rate condition by Messrs. Tucker, J. Mould, and Cake, who were awarded the prizes respectively for fifteen exotic varieties, Mr. Hall securing the chief prize for Britishers. Ericas were fresh and neat, Mr. Cypher winning the first prize with the following six:—Shannoni, æmula, McNabiana, insignis, Irbyana, and Kingstoniensis; Mr. Mould having the first prize for a single specimen with E. Hartuelli, very rich. Single Petunias were trained on flat-faced oval-shaped trellises, 2 feet by 18 inches, leaned back like a mirror; no prize cards attached. Double varieties were very dwarf, not more than a foot high, the plants bearing from twelve to twenty good blooms, Mr. Durbin, gardener to S. Needwell, Esq., being the most successful exhibitor. Tuberous Begonias were small, yet well grown, and will probably be finer next year. The prizetakers were Messrs. Clifford, Heard, and Lye. Verbenas were trained similarly to single Petunias, and had a pretty effect, Messrs. Mattock and Southard being the successful growers. Cockscombs were excellent, with stems from 6 to 8 inches high, with large foliage and handsome heads, but we failed to obtain the name of the grower. Mr. Walters, Bath, staged very good Gloxinias; Mr. Jones, Achimenes; Mr. Truckle, Balsams; and Messrs. Riddick, Jones, and Tucker Zonal Pelargoniums; dwarf, mushroom-shaped specimens, 3 feet in diameter, as fresh and as bright as could be imagined.

CUT FLOWERS.—It is very rare indeed that such Gladioli are seen as the thirty-six spikes with which S. Dobree, Esq., won the first prize. The spikes were broad and massive, and the colours clear and rich. The collection was in all respects remarkable for its great excellence. Mr. W. Brookes followed with very creditable examples of culture; the prizes for twelve spikes going to Messrs. Mattock, Tottle, and Walters. Dahlias were numerous and fine, not a few blooms being of the first order of merit. Mr. W. P. Shaw was the leading exhibitor, and his winning stand of twenty-four blooms would not be easy to surpass, Messrs. Nobbs and Harris following rather closely. Messrs. Tottle, Humphries, and Horsell were awarded the prizes for twelve Show blooms, and Messrs. Shaw, Humphries, and Smith were successful with Fancies. Beautiful stands of single Dahlias were exhibited by Messrs. Walkers, Cooling, and Tuckle, who won the prizes. Mr. T. S. Ware show a fine assortment not for competition.

Many very good boxes of Roses were staged. In the class for twenty-four triplets S. H. Budd, Esq., was the premier exhibitor with beautifully fresh and full Teas and Hybrid Perpetuals. Mr. Cooling was a close second, and Mr. Ralph Crossling third. For twelve triplets the awards fell to Messrs. W. Smith, F. Harris, and J. S. Burges; and for twelve singles Messrs. S. P. Budd, A. R. Farmer, and T. Hobbs were successful. Mr. G. Cooling staged a box of Rosa rugosa, flowers and fruit being effectively associated; also a stand of William Allen Richardson, not for competition. Fine bunches of Zonal Pelargoniums were staged by Messrs. Mattock, Cooling, and Hall, who secured the prizes in the class; Messrs. Pearson & Son, Nottingham, exhibiting varieties of conspicuous merit not for competition. Messrs. James, W. B. Carter, Walters, and Pope were among the successful exhibitors of Asters, which were numerous and good. Hollyhocks, Phloxes, and Verbenas were also exhibited. Messrs. Pethrick, Tagart, and Drummond were awarded the prizes for twenty-four bunches of flowers, and Mr. Cypher closed with first prizes for a bouquet and table ornament—making eleven first prizes in the same number of classes, and in the Show to which he contributed so well.

FRUIT.

A fairly liberal amount in prize money was offered for all kinds of fruit in season, and, as was generally anticipated, the competition was remarkably close and good. One large tent was wholly devoted to the fruit classes, and this did not hold all that was brought, and culinary Apples had to be accommodated in another structure. Although all kinds of fruits in season, if we except Pine Apples, were well represented, Grapes were the principal attraction, and of these probably there were never previously such a fine lot shown at Bath. For a collection of eight dishes of fruit the first prize was the moderate sum of £3, and yet six really good lots were staged. One exhibitor, Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, unfortunately staged eight Nectarines instead of nine, and for this oversight he had to be disqualified, or otherwise would most probably have been either first or second. The first prize was awarded to Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, who had very fine Black Hamburg and Muscat of Alexandria Grapes, a good Longleat Per-

fection Melon, Brunswick Figs, Jefferson Plums, very poorly coloured Barrington Peaches, small Victoria Nectarines, and Windsor Pears. The second prize went to Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, who, if he had staged well coloured instead of nearly green Muscat of Alexandria Grapes, would have been easily first, so good were all his small fruits. His Black Alicante Grapes, Bellegarde Peaches, Elruge Nectarines, Jefferson Plums, Brown Turkey Figs, Blenheim Orange Melon were all very good, and the dish of Hemskirk Apricots were good for the time of year. Mr. S. Pullman, gardener to R. B. Sheridan, Esq., Frampton, was placed third for a generally creditable collection, his Hamburg Grapes, Early Admirable Peaches, and Pine Apple Nectarines being being particularly noticeable. A certificate of merit was awarded Mr. W. Rye, gardener to J. Derham, Esq., Sneyd Park, Bristol, who also had several good dishes. Mr. Matthews, gardener to Lady Cleasby, was first for a Pine Apple, and Mr. A. Miller second. There were seven competitors in the class for eight bunches of Grapes in four varieties, and for which the first prize was the sum of £5. Mr. Pratt was easily first, having immense well finished bunches of Black Hamburg, Muscat of Alexandria, and Alicante, and fairly large well coloured examples of Mrs. Pince—altogether an exceptionally fine collection. The second prize was awarded to Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, who had two large grandly finished bunches of Muscat of Alexandria, which weighed about 4 lbs. each, and were remarkably clean and well coloured. They were cut from a pot Vine, as were other good examples staged in another class. He also had medium-sized well finished bunches of Alnwick Seedling and Alicante, and fairly good Madresfield Court, all of which were cut from the renovated Vines alluded to on page 128. The third prize was well won by Mr. W. Nash, who was weak with Muscats, but had very fine Black Hamburgs, Alicante, and Madresfield Court. Mr. V. Down, Clifton, also had very poor Muscats, which spoilt his chance of winning a good prize, as his black sorts were very good indeed. Black Hamburgs were shown in great numbers, but Mr. Pratt was easily first with extra heavy well finished clusters. Mr. J. Ellicott, gardener to H. W. Tugwell, Esq., was second with medium-sized bunches bearing extra fine berries, and Mr. W. Iggulden was a creditable third. Mr. Pratt was also first with Muscat of Alexandria, having very large bunches and berries, but not so well coloured as were the second prize bunches staged by Mr. W. Taylor. Mr. Ellicott was a good third in this class. Mr. Taylor was the only exhibitor of Gros Colman, and took the first prize for very well finished examples. In the class for any other black variety Mr. Nash took the lead with medium-sized perfectly finished Black Alicante, Mr. Down following with good and fairly well finished Madresfield Court, and Mr. J. Carpenter was third with Alicante. Not many competed in the class for any other white variety, all the prizes going to fairly good examples of Foster's Seedling. Mr. E. C. Cheadzey, gardener to W. Duck, Esq., was first, Mr. A. Young second, and Mr. A. Miller third.

There were two classes provided for Melons and a great number of fruits were shown, but the greater portion of them as usual were poor in quality. The best green flesh was staged by Mr. C. Doons, Mr. J. Campbell following, both having unnamed varieties, and Mr. Pullman was third with Golden Perfection. In the class for scarlet flesh varieties Mr. R. Kerslake was first with Read's Hybrid, Mr. Prosser following with the same variety, and Mr. G. Marsh, gardener to J. Lysaght, Esq., was third. Peaches and Nectarines were both largely shown, and the Judges in making their awards adopted the unusual and bad practice of deciding by flavour, thus disfiguring handsome fruit without however arriving at a proper decision, more especially in the case of Nectarines. With nine Peaches Mr. Wallen, gardener to T. W. Moore, Esq., was first, staging a good dish of Violette Hâtive, Mr. Nash followed with Bellegarde, and Mr. F. Mogford was a good third with Royal George. With six Peaches Mr. Rye was first, having Ford's Seedling, a synonym probably of Bellegarde, in fine condition; Mr. Iggulden was second with good Barrington, and Mr. Pullman third. Mr. W. Shaw staged fairly good Victoria Nectarine, and was awarded the first prize; the poorest dish of Nectarines in the Show, also of Victoria, staged by Mr. J. Pearce, taking second prize, while a fine dish of Pine Apple shown by Mr. F. Cox, gardener to J. Carr, Esq., was placed third. A very poor dish of Rivers' Orange, staged by Mrs. Crouther, was yet placed first in the class for six Nectarines, Mr. Miller following with Hunt's Tawny well coloured, and Mr. F. Cox was third with fine Pine Apple. Thirty-three dishes of Plums were shown in the class for dessert varieties exclusive of Gages, the prizewinners being Mr. J. Southard first, James Tylee second, and B. Hall third, all having fine examples of Jefferson. Thirty-seven good dishes of Green Gages were shown, and with these Messrs. J. Durbin, J. Ricketts, and A. Fisher were successful. Culinary Plums were also well represented, Mr. J. Carpenter being first with Fonthill, very large, Mr. Wells second with the same variety, and Mr. Hall third with Goliath. There were twelve exhibitors of Figs, Mr. W. Scott being first with Brown Turkey, Mr. G. Garraway second, and Mr. J. Kingston third. A very fine dish of Morello gained Mr. Cox the first prize in the class for Cherries, Mr. W. Thomas being second, and Mr. E. Thomas third. Pears were largely shown, all the best early sorts being well represented. Out of thirty dishes the preference was given to a fine lot of Jargonelle exhibited by Mr. W. Bannister, Mr. E. Hall following with Beurré d'Amanlis, and Mr. T. Mogford was third. With three varieties of Pears Mr. W. J. Smith was first and E. Hall second. Twenty-nine single dishes of Apples were shown, Mr. E. Hall taking first prize for Kerry Pippin, second Mr. Mead with Irish Peach, and third Mr. W. Matthews with Kerry Pippin. Mr. E. Hall was also first in the class for three varieties, having good dishes of Beauty of Bath, Irish Peach, and Quarrenden; Mr. A. T. Hall was second and Mr. Biss third. Culinary Apples were very fine, notably such sorts as Lord Suffield, Stirling Castle, Hawthornden, Tower of Glamis, Emperor Alexander, Hanwell Souring, Cellini, and Ecklinville. Messrs. W. F. Smith, W. J. Smith, A. J. C. Biss, G. Blake, W. Britton, and Mrs. Home were the prizewinners.

VEGETABLES.—An extra fine lot of vegetables were staged, but coarseness was too prevalent, and this the Judges were disposed to encourage, no distinction being made in this respect between those produce shown by private gardeners and cotagers. No restrictions as to size of dish are contained in the schedule, and as a consequence immense piles were to be seen, especially in the case of those market growers, and greengrocers, and fruiterers who, strange to say, are allowed to compete, and unfairly compete, with private gardeners. With a collection of eight varieties Mr. Garraway was first,

having fine examples of Autumn Giant Cauliflowers, Queen of Bath Marrows, Sulham Prize Celery, Ward's Incomparable Peas, Telegraph Cucumbers, International Kidney Potatoes, Trophy Tomatoes, and Carters' Champion Runner Beans. Mr. W. Tylee was second, and Mr. T. Evry third. The best collection of six varieties was staged by Mr. E. J. Day; Mr. W. Evry being second, and Mr. Ricketts third. Mr. Ward, gardener to the Earl of Radnor, was first for a fine dish of Stamfordian Tomatoes; Mr. Ashman being a good second, and Mr. B. B. Cater third. There were also a fine lot of Potatoes, Carrots, Onions, Parsnips, Turnips, and other vegetables staged by cottagers and amateurs, none of which presented the appearance of having passed through a very trying season.

The pleasure of a visit to the Bath Show is enhanced by the pleasant and hospitable reception invariably accorded to visitors, and with a Committee so earnest and officials so zealous the exhibitions of the Society, fine as they are, can scarcely fail to increase in magnitude in future years.

NATIONAL GOOSEBERRY SHOW.

THE following is a list of the prizewinners and the varieties at the recent Show in Manchester:—

DISHES OF TWELVE BERRIES.

Exhibitor.	Colour.	Name of Berry.
James Salsbury	Red	Lord Derby.
Bradley Bradley	"	Blucher.
James Hervey	"	Speedwell.
Thomas Burrows	"	Bobby.
William Riley	"	Clayton.
Edmond Salsbury	Yellow	Ringer.
James Bower	"	Leveller.
Benjamin Cheadle	"	Lady Haughton.
Daniel Bower	"	High Sheriff.
James Walton	"	Hero of the Nile.
James Salsbury	Green	Stockwell.
Edmond Salsbury	"	Shiner.
John Torkington	"	Surprise.
James Walton	"	Plunder.
Alfred Tomkinson	"	British Oak.
James Salsbury	White	Transparent.
James Hervey	"	Careless.
James Warburton	"	Fascination.
Alfred Tomkinson	"	King of Trumps.
William Robinson	"	Faithful.

TWINS.

			dwt.	gr.
James Warburton	Red	Lord Derby	33	20
James Salsbury	Yellow	Ringer	39	20
John Torkington	Green	Surprise	22	5
James Bower	White	Fascination	30	8

PREMIER PRIZES.

James Salsbury	Red	Macaroni	22	0
Edmond Salsbury	Yellow	Ringer	22	10
Benjamin Cheadle	Green	Surprise	20	18
John Knowls	White	Transparent	20	12
James Hervey	Red	Companion	20	8
James Threlfall	Yellow	Leveller	19	13
John Clark	Green	Diadem	18	21
Samuel Burchenall	White	Princess Royal	20	0
John Boot	Red	Lord Derby	20	4
John Torkington	Yellow	Thatcher	19	12
Hamlet Foden	Green	Plunder	18	15
Alfred Tomkinson	White	King of Trumps	18	10
Bradley Bradley	Red	Blucher	19	18
Robert Downs	Yellow	Catherina	18	17
Daniel Bower	Green	Shiner	18	7
James Bower	White	Peto	17	3
Frank Cliff	"	Bobby	19	6
Robert Whitehurst	"	Garibaldi	18	0
William Riley	"	Stockwell	18	4
Samuel Dennerley	"	Careless	16	21

CLASS PRIZES.

RED.

James Salsbury	Bobby	21	19
Edmond Salsbury	Falstaff	21	16
Edmond Salsbury	London	20	19
James Salsbury	Governor	20	16
John Knowls	Lord Derby	20	9
Bradley Bradley	Blucher	19	14
James Hervey	Companion	19	3
Robert Whitehurst	Clayton	19	2
James Bower	Stockwell	19	0
Robert Downs	Seedling Firbob	18	5
Alfred Tomkinson	Ploughboy	17	2
James Hervey	Lion's Provider	17	16

YELLOW.

James Salsbury	Thatcher	22	20
James Salsbury	Mount Pleasant	22	16
James Hervey	Garibaldi	20	17
John Knowls	Leveller	19	18
Edmond Salsbury	Ringer	21	9
Alfred Tomkinson	Drill	18	15
James Hervey	Wakeful	18	14
Benjamin Cheadle	Lady Haughton	19	0
James Threlfall	High Sheriff	18	5
Robert Downs	Catherina	17	16
John Torkington	Favonius	17	4
William Riley	Oldham	16	6

GREEN.

James Salsbury	Stockwell	21	20
James Salsbury	Surprise	21	0
Edmond Salsbury	Hospool	20	18
Edmond Salsbury	Shiner	20	12
James Threlfall	Diadem	18	18
William Riley	Plunder	17	12
Robert Downs	British Oak	17	15
William Riley	Telegraph	16	19
Robert Whitehurst	Sir George Brown	17	17
John Knowls	Matchless	17	14
John Boot	Seedling	16	2
Benjamin Cheadle	Cheerful	15	10

WHITE.

Edmond Salsbury	Princess Royal	23	18
James Salsbury	Transparent	21	15
James Salsbury	Careless	21	10
John Knowls	Antagonist	18	22
Edmond Salsbury	Succeed	18	20
John Torkington	Fascination	17	21
Benjamin Cheadle	Overseer	17	15
Robert Downs	Hit or Miss	16	20
Alfred Tomkinson	King of Trumps	15	19
William Riley	Freedom	16	6
John Boot	Snowdrop	15	10
William Riley	Postman	15	2

HORTICULTURAL SHOWS.

BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.

SEPTEMBER 2ND AND 3RD.

THE above Society held its thirty-third Exhibition of plants, flowers, and fruit under most favourable auspices on Wednesday and Thursday last in the Pavilion and its grounds. Those who have had an opportunity of comparing the merits of the Show with those of previous years unhesitatingly pronounced it to be an advance on its predecessors, both in the quantity and quality of the exhibits. Much praise is due to the indefatigable efforts of the courteous Secretary, Mr. Councillor Carpenter, and the esteemed Treasurer, E. N. Hall, Esq., as well as the Hon. Superintendent, Mr. Chilman, and the Committee for the admirable way in which they had carried out the arrangements of the Show. The fruit and flowers were staged in a long suite of rooms in the Pavilion, which were in the evening lighted by electricity, and the plants in a large tent in the grounds, which was beautifully illuminated by Chinese lanterns. First-class bands discoursed excellent music to the multitudes of visitors who thronged the Pavilion and grounds from the opening until the close, 11 p.m. of the first day. It is to be hoped that these liberal attractions will tend to the financial success of the Society, which it appears has not latterly received the support it deserves. Plants were shown in good form, especially good being those shown by Mr. Gilbert of Hastings, and which gained the silver cup. There was a good show of fruit, the entries in the Apple and Grape classes being very numerous. Cut flowers were also shown in quantity. The stands of single and double Dahlias contained very fine blooms. Roses were fairly represented, some good examples of Teas being shown by that well-known exhibitor Mr. A. Slaughter. Some tastefully arranged groups of plants were contributed, not for competition, by Messrs. Balchin and Miles; a stand of fine blooms of Begonias by Messrs. Laing; and stands of herbaceous cut flowers by Messrs. Cheal & Sons. A great novelty in the cut flower department were some crosses and wreaths mounted with fish bones ingeniously formed to represent flowers and grasses. So well was this device carried out that it was only on a close inspection that its nature could be detected.

PLANTS.—In the classes for plants open to all England there were numerous exhibits. Mr. Rann, gardener to J. Warren, Esq., Handcross Park, won the first prize for a collection of twelve varieties, six fine-foliage and six Ferns, with splendid plants of *Dasylicron acrotrichum*, *Cyathea Smithii*, *Davallia Mooreana*, *Phcenix tenuis*, *Alocasia metallica*, *Gleichenia rupestris*, *G. glaucescens*, and others; and Mr. T. Gilbert, Springfield Nursery, Hastings, second with scarcely less beautiful examples of *Croton majesticus*, *Adiantum farleyense*, *Bihea filamentosa*, and *Dicksonia antarctica*; Mr. H. James, Castle Nursery, Lower Norwood, coming in third with much smaller plants. In the next class for eight stove and greenhouse plants in bloom, Mr. T. Gilbert was first, and consequently winner of the Ashbury cup, value ten guineas. Some grand specimens of *Statice Gilberti*, *Kalanthes coccinea superba*, *Erica æmula* and *E. cerinthoides coronata* were shown by the latter exhibitor in this class. Mr. Rann, gardener to J. Warren, Esq., came in second with large well-flowered examples of *Ericas Hartnelli virens* and *cerinthoides coronata*, *Allamanda nobilis*; and Mr. Meachen, gardener to E. Armstrong, Esq., was third with exceptionally large specimens of *Rondeletia speciosa major* and *Pimelea decussata*. For four varieties of stove and greenhouse plants in bloom, Mr. Gilbert was first with well-flowered examples of *Erica Eweriana superba*, *Allamanda nobilis*, &c.; second, Mr. Rann, with a good plant of *Lapageria alba* in his collection; and third, Mr. N. Tupp, gardener to G. Boulton, Esq., Eastbourne. In the second division, open to amateurs and gentlemen's gardeners of the county only, for four stove and greenhouse plants, four varieties, Mr. Jupp was placed first; Mr. Townshend, gardener to Capt. Thompson, Dyke Road, second; and Mr. Rann third. Mr. Meachen, gardener to C. Armstrong, Esq., Withdean, was first in the class for four variegated plants in variety, with admirably grown plants of *Croton Queen Victoria*, a well-coloured specimen, *Croton Andreanum*, *Anthurium crystallinum*, and *Yucca aloifolia*. Mr. Rann came in second, one of whose plants, *Croton Evansianus*, was particularly striking in size and brilliancy of colour. There were only two entries in this class. In the same division for a miscellaneous group of plants in or out of bloom, arranged for effect, Mr. J. Turner, gardener to Major Way, Wick Hall, was deservedly awarded first prize for a very pretty group, the arrangement being light and pleasing, and Mr. Meachen second. For a group of Ferns, arranged for effect, Mr. Jupp first with a choice and pleasing group, and Mr. Meachen second.

For a group of Fuchsias arranged for effect (open class) the first prize was awarded to Mr. C. Fluck, gardener to J. Smith, Esq., for a pretty group, and the second to Mr. Meachen. In the open and county classes devoted to Geraniums the exhibits were very good. Mr. Gilbert, Springfield Nursery, was first in the open class for six varieties of Zonal Pelargoniums (not scarlet); Mr. Meachen second, and Mr. Townshend third. For four scarlet Zonals in four varieties, Messrs. Gilbert first, Townshend second, and Meachen third. Six double distinct varieties, first Mr. Gilbert, second Mr. Meachen, and third Mr. Hugget. For four varieties of Zonals in the county class, Messrs. Townshend first, Meachen second; and four scarlets, Mr. Townshend first, and Mr. Meachen second. In the open class for a group of Coleus arranged for effect, Mr. Jupp was placed first for a showy group, and Mr. Fluck second. For a group of Begonias (open class) arranged for effect, first Mr. J. Spottiswood, gardener to E. Duddell, Esq.; second Mr. Meachen; and third Mr. Manu, gardener to C. Gilbert, Esq., Eastbourne. The table plants shown were very good, Messrs. Turner, James, and Meachen securing the prizes for twelve varieties; and Messrs. Miles, Turner, and Blake for six varieties.

CUT FLOWERS.—There was a good display in both the open and county classes devoted to cut flowers, the Dahlias, single and double, and Asters being very fine. In the open classes for forty-eight dissimilar blooms of show Dahlias Mrs. Seale, Vine Nurseries, Sevenoaks, was awarded first for really splendid blooms, of which the most conspicuous were Flag of Truce, Geo. Dickson, Julia Davis, James Cocker, Emily Edwards, &c.; Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, coming in second with scarcely inferior blooms. Mrs. Seale was first again in the class for twenty-four Fancies; and Messrs. Cheal & Sons second. In the class for twenty-four singles, in bunches of six blooms, a transposition took place in the positions of the two latter winners, Messrs. Cheal being first, and Mrs. Seale second. In the first-named winner's stand were charming blooms of Lady of the Lake and Formosa, two of their own new seedlings. Messrs. Cheal were also first for twelve varieties of Pompons. For twelve dissimilar blooms (Show) first Mr. Boothroyd, second Mr. Vincent, third Mr. Simmons. Twelve Fancy, first Mr. Boothroyd, second Mr. Vincent, and third Mr. Simmons. For twelve singles, Messrs. Maxted, Vincent, and Morgau. In the county classes for twelve varieties show Dahlias, Messrs. Vincent and Simmons were the prizewinners, as also in the class for six Fancies. For twelve varieties of singles in bunches of six, the prizes went to Messrs. Vincent, Simmons, and Hobden respectively.

Roses were shown in fairly good form for such a season as the present. In the open class for twenty-four varieties in bunches of three, the premier prize was won by Messrs. Woollard & Son, nurserymen, Cooksbridge, with fine blooms of Chesbunt Hybrid, Duke of Edinburgh, Marie Verdier, Ferdinand de Lesseps, &c.; the second going to Mr. W. Balchin, nurseryman, Brighton, who staged good blooms of Souvenir de la Malmaison and Capt. Christy, and the third to Mrs. Seale. Mr. A. Slaughter was first for twelve varieties in bunches of three, this exhibitor staging very fine blooms of Alfred Colomb, Baroness Rothschild, and Fisher Holmes; and Mr. W. Virgo, Guildford, second. For twelve varieties of Teas or Noisettes (single blooms) Mr. Slaughter was again placed first with Madame Lamhard, Innocente Pirola, Jean Pernet, and Catherine Mermet in capital condition; and Mr. W. Piper, Uckfield, second. In the county classes Mr. A. Slaughter secured a first place for twelve varieties of Tea or yellow (single blooms), and Mr. Vincent second. For twelve varieties single trusses Mr. A. Slaughter took the lead again with grand blooms of John Stuart Mill, Marie Baumann, and Chas. Lefebvre; and Mr. Simmons, gardener to the Rev. R. C. Hales, second.

Hardy herbaceous cut flowers were shown in quantity. In the open class for thirty-six varieties, Mr. W. Balchin first; Mr. J. Vander Rees, Tooting, second; and Messrs. Cheal third. In the county class Messrs. Vincent, Gore, and Rapley were the winners. Cut flowers in bunches, twenty-four varieties, open class, first Mr. W. Archer, second Mr. H. James. County class, Mr. Vincent first. Asters were shown in capital form, especially the French varieties. Mr. Morgan was first for a collection of twenty-four varieties of French quilled, second Mr. W. Archer, and Mr. W. H. Vincent third. For twenty-four varieties of German quilled, first Mr. H. Archer, and second Mr. Morgan. In the county classes Messrs. White, Blake, and Wickham were the winners with twelve varieties of French, and Messrs. Wickham and Hobden with twelve German Asters. For a very choice and artistically made wreath, first Mr. Webber, Tonbridge; Mr. Chard second, and Mr. Brown third.

The table decorations were very good, the arrangement of the flowers being very light and pleasing to the eye, especially the premier exhibit by Mr. R. Chard, Clapham Common; Mrs. Seale was second, and Miss Gould third. The bridal and ballroom bouquets were very good examples of artistic taste, Mr. J. R. Chard winning the first, and Mr. Brown, florist, Richmond, the second prize. Mr. Chard was first for a very tastefully arranged spray for a lady's dress, Mr. W. Brown second, and Mr. Chapman third. Messrs. Webber, Woollard, Seale, and Gadd were the winners for six buttonholes, and Messrs. J. R. Chard, J. W. Chard, and Wetton for baskets of cut flowers.

FRUIT.—The fruit classes were well represented both in the open and county divisions, Pears, Apples, Peaches, Cherries, and Grapes being of good quality. In the open classes for a collection of twelve dishes, Mr. Goldsmith, gardener to C. A. Hoare, Esq., Beckenham, was first with dishes of splendid fruit of Victoria Nectarine, Moorpark Apricot, Astrachan Apple, Ashton Park Melon, Muscat of Alexandria and Black Prince Grapes. Mr. Dixon, gardener to Sir S. Wilson, Bart., second with fine fruit of Brunswick Figs and Lord Napier Nectarine. For a Pine Apple, any variety, Mr. Bates was awarded a first prize. In the classes for Grapes the bunches were remarkable for size, but somewhat deficient in colour, especially the Muscats. Mr. Hotston, gardener to R. H. Penny, Esq., was first for three bunches of Black Hamburgh. Mr. Inglis, gardener to Cunliffe Lister, Esq., second, and Mr. Miles third. Mr. J. Miles, Bristol Nursery, Kemp Town, was first with three bunches of white Muscats, second C. J. Goldsmith, and third Mr. Spottiswood. For six bunches Black Hamburgh, first Mr. Hotston, second Mr. Warren, gardener to Mrs. Hankey; and third C. A. Goldsmith. For six bunches white Muscats, Mr. J. Miles first, C. A. Goldsmith second, and J. Spottiswood third. In the class for a single Melon for flavour, Mr. Ford, gardener to C. A. Halbund, Esq., first; Mr. H. Stringer,

second; and R. Spinks, third. For a dish of eight Peaches Mr. J. Miles was first with splendid fruit of Bellegarde, and Mr. W. Balchin second with Princess of Wales, and Mr. Walder third. Mr. Biggs was first for a dish of Nectarines, Mr. Maxted second, and Mr. Inglis third. For a dish of Plums, Mr. Maxted first, Inglis second, and F. Fuller, Esq., third. The latter was first for a dish of Green Gages, Mr. J. Holman second, and Mr. Booth third. For a dish of Morellos Mr. Booth first, Mr. O. Goldsmith second, and Mr. Ford third. Mr. Butler, Lancing, was first for Figs with a variety named Madagascar, and Mr. Miller second. Mr. C. Goldsmith was first for a dish of dessert Pears, Mr. Durrant second, and Mr. Carter third. For a dish of dessert Apples, Mr. Virgo first with Worcester Pearmain, Mr. Tupp second and Mr. Ford third. Messrs. Booth, Miller, and Goldsmith were the winners for a dish of culinary Apples. For a collection of six varieties of Grapes, Mr. Chatfield, gardener to T. Holman, Esq., was first; and Mr. Gore, gardener to Captain Taylor, Hastings, second.

In the county classes for a dish of culinary Apples the winners were Messrs. Gore, Wickham, and Hotston. For a dish of Figs Mr. Butler was awarded a first prize. For a dish of dessert Apples, Mr. Carter first, Booth second, and Gore third. Dish of Green Gages, Messrs. Holman, Booth, and Jupp. Dish of Plums, Messrs. Gore, Johnstone, and Hobden. Dish of Morellos, Messrs. Booth, Ford, and Hobden. Dish of Tomatoes, Messrs. Walter, Stringer, and Blake.

Six dishes of Apples, Messrs. Gore, Remuant, and Blake. Dish of Peaches, Messrs. White, Walder, and Inglis. Dish of Nectarines, Messrs. Biggs, Dixon, and White. For a Pine Apple, any sort, Mr. Brown first. For a Melon for flavour, Messrs. Stringer, Ford, and Langridge. Dish of Pears, Messrs. Remnant, Spottiswood, and Wicham. All of the foregoing were the winners in the order of their respective names. The Grapes shown in this division were very good, Messrs. Godfrey, Hotston, and Spottiswood taking the prizes for three bunches of Black Hamburghs, and Messrs. Spottiswood, Chatfield, and Ford for three bunches of white Muscats.

Specimens of the male and female cones of *Araucaria imbricata* were exhibited by Mr. W. Greenyer, gardener to Major Lyon, Goring Hall, Worthing.

GLASGOW AND WEST OF SCOTLAND.

THE general autumn flower Show of this Society was held in St. Andrew's Hall on Wednesday, September 2nd, and proved to be the finest exhibition that has taken place in Glasgow for about twenty years. The most notable collection of plants (exhibition only) was that contributed by Messrs. J. and R. Thyne, Great Western Nurseries, Kelvinside. The platform in the large hall was filled with choice plants, Palms, Pitcher Plants, rare Orchids, and highly coloured Crotons. First-class certificates were awarded to a fine group of Croton Thynei, also Croton Regina, the latter being shown for the first time. The whole arrangement of the platform was such as to command the highest admiration of both Judges and visitors. In another part of the Hall the same firm had also on exhibition a magnificent floral cross composed of Stephanotis, Orchids and Tuberoses. This was very much admired, as was also a fine large wreath and two bouquets, one of which was composed of Orchids, Stephanotis, and Tuberoses, most beautifully and tastefully arranged.

Councillor Campbell, fruiterer, 18, Gordon Street, filled a large table with fine specimens of home and foreign fruit, which collection was very highly commended for quality and tasteful arrangement. Messrs. W. Aitken and Sons, Lenzie, had fine stands of Carnations, Pentstemons, and Gladioli, which were deservedly admired. Messrs. Dobbie & Company, Rothesay, sent stands of their famous strains, comprising Sweet William, of extra quality; Pansies, Pentstemons, Antirrhinums, Spiral Candytuft, all seedlings raised by this firm, and highly commended. They also exhibited a box of their new (Model) white Turnip, a variety of much excellence. Mr. William Campbell, nurseryman, Auchinraith, had a very choice collection of Carnations and Picotees, a Carnation named Snowflake being awarded a first-class certificate. Mr. John Sutherland, Lenzie, had stands of seedling Pansies, many of which will occupy a prominent position at future shows, and to which were awarded several first-class certificates. Messrs. A. Patison and Son, Paisley, sent a stand of a seedling Pansy named Lord Rosebery, which was awarded a first-class certificate. Mr. Thos. Smith, nurseryman, Stranraer, showed a stand of Roses. Mr. Smith has earned a high reputation for the quality of his exhibits, and was very highly commended for this fine collection. Mr. Cuthbertson, Rothesay, showed some fine stands of the old Scotch Marigold, which has been very much improved by him. Mr. Lister of Rothesay had a very fine collection of Show and Fancy Pansies, very highly commended. Mr. J. Baxter, Daldowie, exhibited two seedling Violas, very distinct and beautiful. Mr. W. Kerr, Dargavil, Dumfries, sent a splendid collection of Potatoes, comprising seventy varieties, among which were some fine seedlings not yet in commerce, a fine specimen of which was named Frank Gibb Dougall, in compliment to our esteemed Secretary. A certificate of merit was awarded this collection.

Among the exhibits brought for competition first place must be given to the collection of plants arranged for effect, and filling tables 12 feet long by 6 feet wide; five collections were shown. The first prize was awarded to James Mitchell, gardener to Mr. Hunter, Newmains, for a beautifully arranged and well finished group, comprising a good specimen of *Cattleya crispa*; two fine Yuccas, a beautiful Palm, some Crotons, Ferns, and Grasses were the features of this group. The second prize was awarded to Mr. John Mathieson, gardener to J. L. Henderson, Esq., West Bank, Partick; this group was composed of Palms, Villetas, Nerines, a few Orchids, and a well-bloomed *Ixora*, a want of finish spoiling what was otherwise a fine group. Third prize was awarded to Mr. A. Millar, gardener to Mr. Ward, Ballreston, the plants in this collection being too large for the size of the table. These tables were a valuable contribution and an important feature of the Show.

In the class for four stove and greenhouse plants, Mr. Hogg, gardener, Aitkenhead, showed splendid specimens of *Statice profusa*, 3 feet in diameter, densely bloomed; a good *Erica Irbyana*, *Phonocoma prolifera* Barnesii, well grown; and *Anthurium Andreanum*. Mr. Hogg was also first for exotic Ferns; *Gleichenias Mendeli*, dichotoma, and *Speluncæ* being very large and fresh, and a splendid plant of *Microlepia hirta cristata* was also notable. The same exhibitor had the only three Orchids in the Exhibi-

tion; Mr. Combie, Greenock, having the prize for the single specimen Orchid. Mr. John Mathieson had first prize for foliage plants, his Croton Weismanni and Cycas circinalis being in splendid condition. The foliage plants filled a large table and made a splendid show.

The first prize for twenty-four Dahlias was gained by Mr. M. Campbell of Auchinraith. Prominent in his collection were finely finished examples of the following varieties:—Statesman, Hon. Mrs. Percy Wyndham, Gaiety, W. H. Williams, Earl of Ravensworth, Prince Bismarck, Mrs. Gladstone, Mrs. Langtry, Lottie Eckford, and a most perfect bloom of Harrison Weir. A silver medal was awarded for these blooms. Messrs. Jas. Cocker and Son, Aberdeen, had first place for twenty-four blooms of Roses. Some of the best in this collection were Merveille de Lyon, White Baroness, Duke of Teck, Pride of Waltham, Countess of Rosebery, John Stuart Mill, Marie Banmann, and A. K. Williams. Pansies were well represented, Mr. John Sutherland taking the lead with a stand of perfect blooms, remarkable for substance, size, and smoothness of texture. Single Dahlias were well shown by Messrs. John Lamont & Son, Musselburgh, some of the best being Beauty of Cambridge, White Queen, Zulu Improved, B. S. Williams (new), Warrior (new), White Paragon, Paragon, Robert Fleming, Walter Ware, the Clown, James Cocker, and Negress. Mr. E. Boyes, Uddington, had fine specimen Ericas, his E. Marnockiana gaining the prize for the most meritorious plant in the Exhibition. Mr. A. Niven, gardener, Loch Brae, showed a fine specimen Tree Fern, Cyathea dealbata, very handsome.

The vegetables formed a remarkable show, the chief prizetaker being Mr. D. McBean, gardener to A. Cunningham, Esq., Craigends, Johnstone. His vegetables were superb and easily gained the first position. Mr. McBean had also first for Leeks, Onions, Carrots, Cauliflowers, Savoys, Parsley, and Parsnips, his Onions and Leeks being marvels of high cultivation. Mr. Alexander Bogie, gardener, Auchans House, Kilmarnock, showed the best Potatoes, his Village Blacksmith being very fine.

Fruit was not largely shown. The bunches of Alicante and Black Hamburgh Grapes were particularly well done. White Grapes were not so well shown, a want of finish being apparent in some of the best bunches. The principal competitors for fruit were Messrs. Alexander Crosby, Buchanan Gardens; J. Procter, Glenfinnert, Greenock; and Wilson, Ayr; James Mitchell, Newmains; Donald McBean, Robert Strathdee, John Maul, and Henry Andrew.—G. R.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 8TH AND 9TH.

ALL available space in the conservatory at South Kensington was fully occupied with exhibits on Tuesday and Wednesday last, the Grapes, Plums, miscellaneous fruits, Dahlias, Gladioli, and other flowers together forming one of the largest and best shows held there this season. Throughout Tuesday afternoon and evening the building was crowded with visitors, and there was no part of the International Exhibition attracted so much attention as this. The important series of shows held there this year are now drawing to a close, as only two more are announced, which take place next month.

GRAPES.

The schedule provided no less than twenty-seven classes for Grapes, two bunches of each, and three prizes were offered in each class of 30s., 20s. and 10s., or a total of £81, probably the largest amount ever contributed for Grapes at one exhibition in London. Classes were specially devoted to twenty-six varieties, and with those not in competition there must have been over forty varieties represented, though some of these were only curiosities, and the relative popularity of the different sorts was well shown by the number of entries. The competition was not quite so keen as might have been expected, but in all the leading classes fruit of excellent quality was staged, and the weakest and least satisfactory samples were found in the classes for varieties that are not considered as standard Grapes, but rather as super-numeraries, to vary the supply. Black Grapes were decidedly superior to the white varieties if we except Muscat of Alexandria, which was admirably shown by several competitors, but especially by the successful exhibitor at the recent Crystal Palace Show, who was again victorious at Kensington.

Taking the classes in the order named in the schedule, the following were the awards:—

Alicante.—The seven competitors in this class all staged good bunches, and the three prizewinners' contributions were remarkable for their dense even bloom. Mr. Howe, gardener to H. Tate, Esq., Park Hill, Streatham, was awarded first honours for large well-developed bunches, one being particularly handsome, and all that could be desired in colour. Mr. J. J. Lowry, gardener to J. Macandrew, Esq., Belmont, Mill Hill, followed very closely, being but few points behind, and Mr. Hollingworth, gardener to J. T. Campbell, Esq., Woodseat, Utoxeter, was third with smaller bunches, but of handsome shape and colour.

Alwick Seedling.—This was a remarkable class, for although there were only five entries, the Judges deemed the Grapes so meritorious that a prize was awarded to each exhibitor—namely, a first, two seconds, and two thirds. The examples were all good, and in bloom and general finish there was very little difference between them, but the bunches varied slightly in size, and this seemed to be the chief guide to the awards. The premier honours were accorded to Mr. H. J. Clayton, Grimston Park, Tadcaster, for handsome bunches and berries superbly coloured. Mr. Wallis, gardener to the Rev. W. Sneyd, Keele Hall, Newcastle, was second with smaller but compact, even, and beautiful bunches. Mr. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, Acton, was equal second with finely coloured examples. Mr. J. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, and Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, were equal thirds, both showing highly creditable bunches.

Black Hamburgh.—Of the five exhibitors Mr. J. Roberts had decidedly the best specimens of this variety both in size of berries and colour. Mr. J. Vert, The Gardens, Andley End, was second with good bunches and berries, but slightly wanting in colour. Mr. J. Read, Moat Mount, Mill Hill, was third with bunches and berries of medium size, but slightly rubbed.

Black Prince.—Only two pairs of bunches of this variety were exhibited,

Mr. Baird, gardener to C. A. Daw, Esq., Homfield, Edling, taking the lead with the characteristic long bunches of good colour. Mr. C. J. Goldsmith, gardener to C. H. Hoare, Esq., Kelsey Manor, Beckenham, was placed second with smaller but good examples.

Buckland Sweetwater.—With large handsome bunches and berries, but not highly coloured, Mr. J. Roberts was the most successful amongst five exhibitors, Mr. S. Castle, West Lynn, Norfolk, being second with smaller bunches but equally fine berries; Mr. G. R. Allis, Old Warden Park Gardens, Biggleswade, following with well-ripened but smaller bunches.

Duke of Buccleuch.—None of the exhibits in this class could be considered perfectly satisfactory, though the premier bunches from Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, were large, the berries fine, and one of them very clean. Mr. G. Tucker, gardener to J. L. Lovibond, Esq., Starts Hill, Farnborough, was second with large but rather irregular bunches and fine berries; Mr. Baird being third with similar but smaller bunches.

Dutch Hamburgh.—Though a very handsome Grape when well grown this does not appear to be a favourite with exhibitors, for there was only one entry, Mr. J. Read gaining the first prize for bunches of medium size, the berries fine and colour excellent.

Dr. Hogg.—This fine-flavoured variety was also only represented by one exhibitor, Mr. E. Hill, gardener to Lord de Rothschild, Tring Park, Tring, who was awarded the first prize for a fine bunch of medium-sized berries and well coloured.

Foster's Seedling.—Seven pairs of good bunches of this variety were shown, Mr. Allan leading with particularly good samples, very notable for the size of the berries. Mr. G. T. Miles, gardener to Lord Carrington, Wycombe Abbey, was second with good-sized bunches well ripened; and Mr. J. Horsefield, gardener to Lord Heytesbury, Heytesbury, Wilts, was third with highly coloured examples, rather smaller in bunch and berry than the preceding.

Golden Queen.—There was nothing in the appearance of the two pairs of bunches staged to excite much admiration, for all the "golden" to be seen was in the name, and they both had a rather green, or what some might term a "dirty" appearance. Mr. H. Folkes, gardener to T. F. Halsey, Esq., M.P., Gaddesden Place, Hemel Hempstead, and Mr. Wallis were the prizetakers in that order.

Gros Colman.—With the exception of the first-prize bunches from Mr. R. Dawes, gardener to the Hon. Mrs. Meynell Ingram, Temple Newsome, the exhibits in this class were not so good as we sometimes see at later shows; those just named were, however, large in bunch and berry, and admirably coloured. Mr. A. Smith, gardener to W. H. Sewell, Esq., Warren Hill, Loughton, was second, very large bunches, medium size berries, and slightly wanting in colour; Mr. Tucker being third with small well-coloured bunches.

Gros Guillaume.—Under the general but erroneous name of Barbarossa two huge bunches of Gros Guillaume were staged by Mr. Dawes, and were adjudged the first prize. The bunches were not only large, but well proportioned and of good colour.

Gros Maroc.—As at the Crystal Palace, this very promising Grape was capitally represented, and it appeared to well deserve the opinion expressed by an experienced grower, that it is "a first-rate variety, and one which is fast gaining favour." Mr. J. Roberts had the best of the five pairs entered, the bunches being compact and well formed, the berries large and the colour beautiful. Mr. G. T. Miles and Mr. J. Wallis followed very closely, there being few points between them and the first.

Lady Downe's Seedling.—This thoroughly useful late Grape was shown by six competitors, Mr. Hollingworth leading with large handsome bunches of fine colour much ahead of the others. Mr. Wallis was second with smaller bunches, and Mr. Allis third with similar but well-coloured examples.

Madresfield Court.—All the bunches staged by the five exhibitors were even and well set, but two or three were slightly deficient in colour. Mr. Hudson won first honours with large bunches bearing a splendid bloom. Mr. Goodacre and Mr. Vert following closely.

Mrs. Pearson.—Two of the contributions in this class—namely, the first and second from Mr. Allan and Mr. Horsefield, were remarkable for their high colour, the second bunches differing only in being rather smaller. The third-prize bunches from Mr. Wallis were somewhat green, and the same remark applies to the two bunches that did not take a position amongst the prize-winners.

Mrs. Pince.—The competition was good in this class, there being seven entries, but except the first-prize bunches from Mr. Pratt, Longleat Gardens, Warminster, they were not so well coloured as this variety should be when at its best. Mr. Pratt's bunches were solid and handsome, and bore a fine dense bloom. Mr. Smith was second also with good bunches, and Mr. Wallis third, the last named samples being rather red.

Mill Hill Hamburgh.—Two good examples of this Grape were exhibited, but neither were quite up to the character of the variety as regards size of berries. J. McIntosh, Esq., Duneeven, Oatlands Park, secured the first place with good bunches and berries, Mr. J. Read being second with smaller berries but rather better colour, though this variety is rarely seen first-rate in this respect.

Muscat Hamburgh.—First honours were obtained by Mr. Goodacre with even well-proportioned bunches of satisfactory colour. Mr. Horsefield followed closely, and Mr. Allan was third with large bunches, but rather wanting in colour.

Muscat of Alexandria.—The keenest competition in all the classes was that for this favourite Muscat, nine pairs of fine bunches being staged; but, repeating his success at the Crystal Palace last week, Mr. J. J. Lowry was again accorded premier honours for the handsome bunches which are duly praised elsewhere. Mr. Pratt and Mr. Roberts followed in that order, the second having large bunches not so well coloured, and the third smaller but well ripened bunches.

Various.—In several classes there was little competition, and they can be disposed of in a few lines. Of Royal Muscadine Mr. Read had the only examples, and was awarded the third prize. With West's St. Peter's Mr. Baird was first. Many good bunches of capital colour, but there was no competition. Messrs. Hollingworth, Edmonds, and Vert were the prize-winners with Trebbiano, all showing large bunches. Messrs. Roberts and Hollingworth were first and second respectively with White Tokay, both

fairly good. For any other variety than those specially provided for in the preceding classes there were five entries; Mr. J. Wells, gardener to R. Ravenhill, Esq., Fernhill, Windsor Forest, being first with Cooper's Black, a variety with large oval berries, and bearing a dense blue bloom. Mr. Horsefield was second with Chatsworth Seedling in good condition, and Mr. Roberts was third with the finely flavoured Duchess of Buccleuch. Black Monnuka and Black Frontignan were also shown in this class, but did not gain prizes.

Messrs. Webber & Co.'s Prizes for Grapes.—Three prizes were offered by this well-known firm of fruiterers, Covent Garden, for the best box or basket of Grapes not less than 12 lbs., packed for market, so as to realise the highest prizes. These classes always attract much attention, and the seven contributions were closely examined by the Judges, with the result that Mr. S. Castle, West Lynn, was placed first with some good examples of Black Hamburgh, closely packed in a handle basket. The stalks were secured to the side of the basket with string, the bunches resting on a bed of wool covered with tissue paper, and over the basket sticks were arched to bear the necessary covering and keep it from the Grapes. Mr. Goodacre was second with the same variety, similarly packed and nearly as fine condition. Mr. T. Turton, gardener to John Hargreaves, Esq., Maiden Erlegh, Reading, was third also with Black Hamburgh, but packed in a box on moss covered with tissue paper.

Miscellaneous Fruits.—Amongst the numerous exhibits not in competition, one of the most meritorious were the Vines in pots from Messrs. H. Lane & Sons, Great Berkhamstead, for which a silver-gilt medal was awarded. There were seven Vines, each 5 to 6 feet high, trained round stakes, and bearing from twenty to thirty bunches each of the following varieties—Black Hamburgh (2), Foster's Seedling (2), Gros Colman, Alicante, and Gros Maroc. All these were finely ripened, and they formed a most interesting feature in the fruit display. Mr. W. Roupell, Harvey Lodge, Roupell Park, London, was awarded a silver medal for a collection of Grapes, comprising the following—White Frontignan, Grizzly Frontignan, Purple Constantia, Madresfield Court, very good; Muscat of Alexandria, Muscat Hamburgh, Mrs. Pearson, Dr. Hogg, and Chavousb, a white variety, described as a great favourite with the late Sultan of Turkey, but which has been found worthless in this country. Some Vines of the American and French Strawberry Grapes, with a variety named General della Marmora, were trained in the form of an arch, to show how ornamental they are in this way. Fourteen varieties of Grapes were sent from Chiswick, representing Royal Muscadine, Dutch Hamburgh, Black and White Frontignan, Chasselas Rose, Miller's Burgundy, Royal Ascot, Mill Hill Hamburgh, Ascot Citronelle, Golden Hamburgh, Chasselas Vibert, and the Currant Grape, all very interesting, and some rarely seen in cultivation.

An extensive and handsome collection of Apples was shown by Messrs. W. Paul & Son, Waltham Cross, which was honoured with the award of a silver medal. There were seventy dishes, and nearly all distinct varieties, some particularly handsome fruits of the following being shown:—Peasgood's Nonesuch, Alfriston, Cellini, Ribston Pippin, Tower of Glamis, Court-Pendù Plat, Blenheim Pippin, Hawthornden, Keswick, Bedfordshire Foundling, Winter Pearmain, Evagil, Lord Derby, Stirling Castle, Warner's King, and Dumelow's Seedling. A similar award was granted to Messrs. J. Cheal & Sons, Crawley, for a varied and interesting collection, comprising a large number of Apples, handsome fruits of the leading varieties, a good collection of Plums, Coe's Golden Drop, Pond's Seedling, White Magnum Bonum, Jefferson's, and the Myrobalan or the Cherry Plum being amongst the best. Fine clusters of the prolific, handsome, American cut-leaved Blackberry, which is becoming so great a favourite, were also shown, and a number of brightly coloured and curiously formed Gourds. Messrs. G. Bunyard & Co., Maidstone, contributed some very beautiful fruits of their fine new Apple, Lady Sudeley, which are distinctly streaked with bright crimson, giving them a handsome appearance. Samples of the Farleigh Damson were also shown from trees on their own roots and from budded trees, the latter being much larger than the others. A very ornamental rich crimson Crab, named the American Hyslop, was shown together with good fruits of Dr. Jules Guyot Pear.

Plums were shown by numerous exhibitors and mostly in excellent condition, bronze medals being awarded for the seven following collections:—Mr. Bates, gardener to Mrs. Meek, Poulett Lodge, Twickenham, showed twenty dishes of Plums, all fine fruits, and including some of the best in the Exhibition. The principal varieties were Coe's Golden Drop, Magnum Bonum, Prince Englebert, Victoria, Washington, Diamond, Pond's Seedling, Jefferson, Denbigh, Guthrie's Gage, Transparent Gage, and Early Gage. Mr. Ford, Leonardslee, Horsham, showed twenty-six dishes mostly Plums but a few fruits of William's Bon Chrétien from Pear and Quince stocks were included. The best Plums were Goliath, Diamond, Magnum Bonum, Pond's Seedling, Cox's Emperor, Victoria, The Czar, and Early Orleans. Mr. W. Divers, Wierton Place, Maidstone, had some large handsome Brunswick Figs, and the following Plums were excellent in size and appearance:—Prince Englebert, Pond's Seedling, Prince of Wales, Nectarine, Diamond, Coe's Golden Drop, Magnum Bonum, and Jefferson. Mr. J. Gore, The Gardens, Glenleigh, Hastings, had thirteen dishes of Plums, comprising Jefferson, Magnum Bonum, Deniston's Superb, Kirke's, Violette de Galopin, Green Gage, Coe's Golden Drop, Cox's Emperor, Victoria, and Diamond. Mr. Abel Phillips, Glaston, Uppingham, had eleven varieties of Plums, Mr. J. Rose, Lockinge Gardens, Wantage, fourteen dishes, and Mr. Walter Dance, Gosfield Hall, Halstead, had twenty-six dishes, the varieties being similar to those already noted.

A large collection of Plums was also sent from Chiswick, in which the following varieties were represented:—Victoria, Orange, Drap d'Or, d'Esperen, Reine Claude Rouge, Bryanston Gage, Winesour, Yellow Magnum Bonum, Double Altesse, Reine Claude d'Angoulême, La Delicieuse, Nelson's Victory, Pond's Seedling, Overall, Lawson's Golden Gage, and Dammas d'Espagne. Mr. B. N. Foster, Ewhurst, Guildford, had two dishes of Plums, and Messrs. W. Paul & Son had a dish of Angelina Burdett Plums in good condition. Messrs. Hooper & Co. showed a collection of twelve varieties of Tomatoes, all fine even fruits.

DAHLIAS.

The display of these was all that could be desired, the blooms of good substance, symmetrical and bright in colours, all the sections, Show, Fancy, Pompon, and single varieties, being largely and well represented. Full

lists of the varieties are given in our report of the National Dahlia Show last Friday and Saturday, and it is not therefore necessary to repeat them here, so we shall only give the prizewinners in the principal classes.

With forty-eight Show varieties Mr. C. Turner, Slough, was the most successful, taking premier honours with very handsome blooms, being followed closely by Mr. W. Boston, Bedale, Yorkshire, and Messrs. Keynes, Williams and Co., Salisbury. For twenty-four Show varieties Messrs. Rawlings Bros., Romford, were deservedly first; Messrs. Saltmarsh & Sons, Chelmsford, and Mr. J. Walker, Thame, being second and third. Messrs. Keynes, Williams, and Co. had the best twenty-four Fancy varieties, and Messrs. Saltmarsh the finest twelve Fancy varieties: Messrs. Turner, Boston, Rawlings, and Walker following in the two classes. In the amateurs' class for twenty-four Show varieties, Mr. J. Spoor, Prospect Cottage, Musgrave, Low Fell, Gateshead, was awarded premier honours, staging highly satisfactory blooms. Mr. H. Glasscock, Rye Street, Bishop's Stortford, and Mr. C. Hockney, Greenfield House, Stokesley, Yorkshire, were second and third respectively. For six Fancy varieties, W. Keith, Esq., Cornwall, Brentwood, Mr. Glasscock, and Mr. Prince were the prizetakers.

There was a beautiful display of Pompon and single varieties, the finest of the former being from Messrs. Keynes, Williams & Co., and of the others from Messrs. J. Cheal & Son, whose stand of singles was one of the best ever shown. Mr. Turner and Messrs. Keynes & Co. also exhibited in these classes. Mr. C. Turner's prizes for Dahlias brought good competition, Messrs. Keith, Glasscock, Walker, Garratt, and Henshaw securing the honours.

Miscellaneous Collections of Flowers.—Considerable space was occupied with the non-competing exhibits, and one of the most effective displays was that provided by Messrs. H. Cannell & Sons, Swanley, who had extensive collections of Dahlias, representing all the leading varieties, and including many novelties of great merit. Very noticeable was the large white Dahlia Mont Blanc, some blooms of which were 8 inches in diameter. Several pretty forms of the Juarezi type, shown as Cactus Dahlias, were also very good, one being bright yellow, another plum-coloured, together with the pale yellow Mrs. Hawkins, and the white Constance. As a decorative Dahlia, Fascination, rosy crimson with a white centre to each floret, was distinct and beautiful, and a magnificent bloom of Mrs. Gladstone attracted much attention. Tuberous Begonias, Asters, and many other specialties were comprised in this grand collection, for which a silver-gilt medal was awarded. A similar honour was adjudged to Messrs. Kelway & Son, Langport, for a magnificent collection of 120 Gladioli spikes of numerous varieties, several of which were certificated. Medals of equal value were also adjudged to Mr. T. S. Ware, Tottenham, for his superb group of hardy flowers, which also comprised numerous Dahlias of all sections; and to Messrs. J. Laing & Co., Forest Hill, for a brilliant group of Tuberous Begonias very tastefully arranged with Palms, Ferns, &c. Bronze Banksian medals were awarded to the New Plant and Bulb Company for a group of Lilium auratum varieties, and to Mr. Boothroyd, gardener to H. Coleman, Esq., Woodville, Dover, for a choice collection of stove and greenhouse flowers.

COMMITTEES.

FRUIT COMMITTEE.—Present, F. D. Godman, Esq., in the chair; Messrs. G. Buyard, J. Willard, J. Roberts, G. T. Miles, T. Francis Rivers, Jos. Eilam, C. Silverlock, C. Ross, G. Goldsmith, W. Paul, T. B. Haywood, R. D. Blackmore, Arthur W. Sutton, Harrison Weir, G. Paul, J. Woodbridge, and Dr. R. Hogg. Mr. S. Mortimer, Swiss Nursery, Farnham, sent a seedling Tomato, and also a seedling Melon, both of which were referred to Chiswick. W. Roupell, Esq., Harvey Lodge, Roupell Park, sent fifteen varieties of Grapes. These were all grown in pots, and had not produced large-sized bunches. A letter of thanks was awarded Mr. S. Cooper, Fern Cottage, Sunninghill; and Mr. Gough, The Gardens, Harefield Grove, sent seedling Tomatoes, which were referred to Chiswick.

Mr. Beckett, The Gardens, Aldenham Park, Elstree, sent six brace of a seedling Cucumber of excellent growth, to which a vote of thanks was awarded. Mr. Herrin, Gerard's Cross, sent branches in fruit of a seedling Raspberry called Late Prolific. It appears to be an early form of the autumn-bearing varieties, and before coming to a decision the Committee desired to see it at next meeting, with particulars of cultivation. Messrs. R. Veitch & Son, of Exeter, sent a seedling Peach, the produce of a cross between Belle de Vitry and Galande, which was not considered superior to varieties already in cultivation; also another raised from crossing Late Admirable and Belle de Vitry. A vote of thanks was awarded. They also sent a bunch of a Grape introduced from France, under the name of Garibaldi, which proved to be one of the American Fox Grapes.

Mr. Miles, The Gardens, Wyeombe Abbey, exhibited a splendid bunch of Gros Maroc Grape, beautifully finished, the berries being large and finely bloomed. It was probably one of the finest bunches of this variety that has ever been exhibited. Mr. George Bunyard of Maidstone exhibited a branch of the Crittenden Damson studded with fruit; he also had a dish of the fruit from budded trees, which is much larger than that grown upon those raised from suckers. Mr. R. Dean of Ealing also exhibited fruit of the Crittenden Damson. Mr. R. A. Bray of Bedford sent a dish of Williams' Bon Chrétien from standards. Messrs. Webb & Son of Stourbridge sent a seedling Melon called Beauty of Wordsley, which was over-ripe.

Mr. George Bunyard of Maidstone exhibited fine large fruit of Dr. Jules Guyot Pear, a handsome showy Pear, but the flesh was coarse and the flavour inferior. He also showed fine specimens of Williams' Bon Chrétien and Souvenir du Congrès Pears, for which a vote of thanks was awarded. Lady Sudeley Apple, which was certificated last year under the name of Jacob's Strawberry, maintained the high opinion of it expressed by the Committee. Mr. T. Laxton of Bedford exhibited a seedling Plum called Self-Help, a cooking Plum like a large Mussel. The flesh is yellow, firm, and rather adheres to the stone. It was not considered superior to Diamond.

FLORAL COMMITTEE.—Present: Shirley Hibberd, Esq., in the chair, and Messrs. James O'Brien, H. Williams, J. Dominy, Charles Noble, G. Duffield, Thomas Baines, J. Child, J. James, W. Bealby, W. Wilks, H. Bennett, W. B. Kellock, J. Fraser, H. Turner, J. Hudson, J. Walker, and M. T. Masters. Mr. Hugh Crichton, Belleaire Gardens, Greenock, showed some specimens of the Glasgow Prize Cockcombs, one of which had a head 2 feet across from tip to tip, and over 6 inches in diameter in the centre. The strain was commended. Mr. King, Rowsham, showed several seedling Coleuses, Capt. Wetherall, crimson and maroon; and Cloth of Gold, light yellow, being the

best. Messrs. J. Carter & Co., Holhorn, were adjudged a vote of thanks for a plant of *Fourcroya longeva* bearing numerous young plants upon the inflorescences, and a certificate for a *Lilium* described under that head. H. J. Buchan, Esq., Wilton House, Sonthampton, was accorded a cultural commendation for a well-grown plant of *Odontoglossum Krameri* with four spikes bearing about sixteen flowers. W. Soper, Esq., 307, Clapham Road, sent a plant of *Ananassa sativa variegata* neatly variegated. Messrs. J. Veitch & Sons, Chelsea, showed a plant of *Amasonia punicea* with abundant spikes of creamy flowers and bright scarlet bracts, very showy. Mr. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was awarded a cultural commendation for an excellent specimen of *Vanda Sanderiana* with two spikes of seven and eight flowers each. Mr. P. Ladds, Swanley, sent plants of the pure white Zonal *Pelargonium White Queen Improved*, which is very free and bears large trusses. Mr. Aslett, gardener to C. Butler, Esq., Warren Wood, Hertford, had a double pink Tuberous *Begonia* named Mrs. C. Butler, very free and large flowers. Messrs. R. Veitch & Son, Exeter, showed flowering branches of *Escallonia exoniensis*, a seedling of strong habit, with large tubular pinkish white flowers, for which a vote of thanks was accorded. Messrs. W. Paul & Son had plants of *Abies Douglasi* and a variety named *glauca*, with a distinct bluish tint. This firm also sent three varieties of climbing *Roses*, one of which was certificated.

CERTIFICATED PLANTS.

Lilium auratum rubro-vittatum (J. Carter & Co.).—A bold variety with large flowers, the petals white striped in the centre with dark red.

Dracena Norwoodensis (J. Veitch & Sons).—A graceful variety, with lance-shaped leaves about $1\frac{1}{2}$ inch broad in the widest part, and tapering to each end, elegantly streaked with green, red, and white, the latter chiefly on the margin.

Lomariopsis buxifolia (J. Veitch & Sons).—A very pretty and distinct Fern of semi-scandent habit, and shown growing over a large Tree Fern stem. The fronds are pinnate, 4 to 6 inches long, with small shining green oval pinnules closely placed.

Rose Waltham Climber No. 1 (W. Paul & Son).—A pretty variety of a bright lively rose tint, and likely to be a useful autumn Rose, as it is extremely free, and the cheerful tint renders it especially acceptable.

Cactus Dahlia Mrs. C. Hawkins (T. S. Ware).—After being shown several times, this really meritorious variety has received the recognition it deserved. It is a pale yellow or cream-tinted form of the Juarezi type, and approaches that very closely in the shape of the blooms.

Gladiolus J. L. Toole (Kelway & Son).—Very handsome, rich crimson, the lower petals white at the base, flowers large, and spike massive.

Gladiolus Prince Waldemar (Kelway & Son).—Bright clear rose in colour, with white lines in lower petals. A charming variety.

Gladiolus Lord Carnarvon (Kelway & Son).—A bold flower, bright scarlet, with a white centre, which shows up the brilliant tint well.

Dahlia Mrs. G. Rawlings (Rawlings Bros.).—A Show variety, well built symmetrical bloom, white tipped with crimson purple.

Dahlia Bird of Passage (Rawlings Bros.).—A charming Show variety, bloom of moderate size, but neat form, white tipped with pale rose, the centre of the bloom being of the latter shade.

Dahlia George Paul (Rawlings Bros.).—This was certificated as a Decorative variety, and though not of first-rate form it is attractive in colour, the florets being white tipped with deep rich crimson.

Dahlia Eclipse (H. Cannell & Sons).—A single variety, rich deep scarlet, yellowish at the base, the florets round, and general outline good.

Dahlia Faust (H. Cannell & Sons).—Another single variety of a peculiar bright red shade, the florets substantial, broad and round.



HARDY FRUIT GARDEN.

GATHERING FRUIT.—We were recently dining with a gentleman who has an extensive fruit garden, of which he is justly proud, for it contains a large collection of the best sorts of fruit, and his evident vexation at finding unripe fruit had been sent in for dessert was a reminder to us of the fact that due attention is often wanting on the part of fruit-growers in gathering the fruit, which they now bring to so high a degree of excellence. Certainly we ought not to rest satisfied with anything short of absolute perfection in fruit culture in garlens—a very different affair to fruit culture in the orchards and plantations of market gardens. In the garden of a private gentleman facilities generally exist for the culture of fruit in its highest form, and the gathering of it must certainly be regarded as no mean part of such culture. Take, for example, Green Gage Plum. For culinary purposes it is sufficient if the fruit is about half ripe, but for dessert we watch each fruit with anxious care, and not one should be picked for table that is not perfect in ripeness, bloom, and colour. A pale, glossy, greenish-yellow small fruit of this delicious old Plum is not a tempting object, but a really fine fruit, covered with delicate bloom, with a pink tinge upon the side most exposed to the sun, and not unfrequently having a slight crack or two in the skin, is both grateful to the palate and tempting to the eye; and it is precisely this happy combination in fruit of entire gratification of the two keen senses of sight and taste which marks perfection. We call timely attention to this important matter now in order to secure greater watchfulness and patience in Pear gathering. It has long been our habit at this season of the year to devote an hour or two on fine afternoons to a careful inspection of the fruit, and to gather it gradually, a few from each tree, as it becomes quit

ready. Depend upon it that such care, combined with delicate handling and careful storage in the fruit room, carries its own reward with it, for it enables one to have a supply of ripe fruit in succession for a long time, and to become intimately acquainted with the peculiarities of each sort. Knight's Monarch affords a remarkable example of the importance of such care, the fruit always ripening in batches, some being ready long before others, and if the forward fruit is not picked as it becomes ready it will fall and become hrnised. In looking over the fruit the eye soon becomes accustomed to the different changes of the fruit, and by lifting the fruit outwards it parts readily from the branch when ready for gathering. Do not forget that many Pears are good one year and inferior or decidedly bad another. A sort with a good character ought not, therefore, to be lightly discarded, and remember that the fruit can at the worst always be turned to account for stewing. After the fruit is picked, if the drought still continues, let every tree have enough water to thoroughly soak the soil, so as to promote a strong full flow of sap to render the buds full and plump for another season. Let us not also forget to apply the lesson of the drought once more. A dry hot season insures colour and flavour, but the fruit is always small if the trees are not watered and mulched. See, then, that the supply of water to the fruit garden is abundant enough to insure a full supply throughout the driest summer, and also that the means for its use among the trees is simple and efficient. At Chiswick the trees have had both watering and mulching this summer with the best results. Let us beg gentlemen having fruit gardens to send their gardeners to the Fruit Congress to be held there this autumn, and to impress upon gardeners the importance not only of seeing the display of fruit, but to go into the gardens among the fruit trees and to get a lesson from Mr. Barron's practice.

FRUIT FORCING.

FIGS.—*Early-forced Trees in Pots.*—The next two months may be considered the resting period of early Figs, during which they must be kept moderately dry and as cool as possible. If they persist in growing, the roots that have found their way into the fermenting bed should be cut through about a foot from the pots, and the plunging material taken out down to the bottom of the pots. All unripe fruit should be removed, and red spider kept from increasing by washing the trees occasionally with the syringe until the leaves fall, when not a day should be lost before the annual cleansing should be given. If the roof lights are moveable they may be taken off for a season if fine for painting or other repairs, but they must not be removed under any pretence unless the wood be thoroughly ripe. It is necessary, however, that any painting be done in time so as to allow of its thoroughly hardening before it becomes necessary to subject it to the trying influences of confined moisture.

Succession Houses.—The trees in these will still be ripening quantities of useful Figs, and will need a free circulation of dry warm air, the most important factor perhaps in the production of high-class fruit. When necessary to keep these trees in bearing a time longer a little fire heat with ventilation through the night will be necessary, and any watering must be given early when the day promises to be fine. Red spider will make headway with the dry heat, and brown scale is often very troublesome, and if undisturbed soon finds its way to the foliage and fruit, from which it cannot be dislodged without injury. As prevention is better than cure the parts infested should be well washed with an insecticide of approved strength with sponge or brush before these pests have time to spread. Thin out any spray that may have accumulated now, not waiting until pruning time, allowing the regular extension or succession shoots intended for next year's crop to grow up to the glass, where light and warmth will mature the points better than were they kept closely secured to the trellis.

Young Trees in Pots for Early Forcing.—Any young trees in pots still under glass and having rooted in the plunging material should have the roots cut off, as a means of inducing rest. Any that are not considered of a size fit for forcing, and will need growing on another season in heat preparatory for early work, should be shifted; and those which though large enough in head for forcing are not in the size of pot desirable should be shifted into larger pots without delay. All straggling roots should be cut off when potting, and the soil rammed very firm as the potting proceeds, otherwise the water when they are again started will pass away, the old balls become and remain dry, and the first crop of fruit will drop. Rich turfy loam with a sixth of lime rubbish and a sprinkling of bones is a proper compost. The culture of Figs in pots is a most interesting mode of culture, as many of the moderate growers can be accommodated in a small house, and, being very prolific, plenty of heat and moisture will result, along with good feeding, in the production of a full crop of delicious fruit of a highly wholesome and health-giving kind.

PINES.—Pine plants, especially Queens, which are intended to give a supply of fruit next May or June, should by this time have developed a sturdy growth, and have the pots well filled with roots. The utmost attention must be given the watering, so as to maintain the vigorous habit acquired, bearing in mind that the soil, being permeated with roots, will have parted with much of its feeding qualities, and to make up for this loss stimulants will be necessary to maintain the vigour of the plants, being careful not to give them too strong and always tepid, and every time the plants are watered. In order to secure the thorough maturation of the plants a liberal supply of air should be given whenever sunshine and heat prevail to an extent to allow of its being given, and the atmosphere must not be too closely charged with moisture; but syringing the plants should be continued two or three times a week during fine weather, or as shall be determined by an examination of the axils of the leaves of

the plants, which ought not to have the moisture there lodging exhausted. All suckers showing before the fruit makes its appearance should be removed, but when the fruit shows one should be left on for continuing the stock.

Successional Pine Plants.—Plants not so forward as the preceding, and yet required in subsequent order, should have every encouragement whilst sunshine and heat are effective, as may be expected during the present month. Fire heat should not be resorted to unless the temperature falls below 60° at night, and trap the sun heat by closing early in the afternoon, which should be done so as to enclose a temperature of 90° to 95°, when the needful moisture to insure an invigorating condition should be afforded.

Fruiting plants should have a night temperature of 70° to 75°; they will need a somewhat drier atmosphere than for those last mentioned; still, a genial condition of the atmosphere is essential where the fruit is swelling off, ventilating early and closing early. Shading should be discontinued except it be in the case of plants that have the fruits near the glass. Shading ought also to be discontinued over those plants with roots in other compartments, but suckers will, of course, need shade until rooted.

STRAWBERRIES IN POTS.—The pots of the earliest-potted plants will now be filled with roots and produce runners in quantity, requiring removal two or three times weekly, and in looking over the plants much time and labour will be saved by thinning out all plants with doubtful crowns and consigning them to the rubbish heap. It will also be necessary to determine whether the plants are to be grown with single or many crowns. The single crowns we consider the best, and those who intend to try it should remove the side ones as they appear. Give the plants plenty of room, and see that they never lack moisture. Autumn-fruited plants that have been kept in pots through the summer, and are now expanding their flowers, should be moved to cold frames, where they can be closed with a dry atmosphere at night; but avoid keeping close in damp weather, and from these they can be brought forward in warmer houses as desired. Plants that were planted out after forcing for lifting in autumn may have glass placed over them if convenient, or the plants need not be lifted until the fruit is set; but as this is not practicable in many places the plants had better be lifted just before the flowers open, and be potted into as small pots as will contain the roots. They should have shade from bright sun, and be dewed overhead occasionally to revive them, they being stood in a cold frame or pit and kept rather close; but air should be given, if only a little, the greater part of the day, and as soon as they will bear the sun they should be moved to the shelves of a house with a south aspect, where they will need the assistance of a moderate degree of warmth and a free circulation of air, as in a close moist atmosphere the pollen clogs or does not discharge freely, and badly shaped, ill-set fruit results.

PLANT HOUSES.

Crotons.—Plants that have become tall are useless for many forms of decoration, and as large heads can be rooted at this season of the year with as much ease as cuttings of a smaller size, they should be inserted at once. Large heads may be rooted without losing a single leaf if kept perfectly close under handlights or in the propagating frame in a close warm house where they can be shaded from the sun. The heads may be inserted in the centre of the pots in which they are to be used for decoration. A little sand should be placed in the centre for the base of the stem to rest upon; they will be found to root equally as well as if placed into small pots, and the labour of potting them afterwards is saved. The heads, if well coloured, should be large enough for the purpose for which they may be required without having to make fresh growth. If they start into growth after they are rooted it is questionable if they will colour sufficiently well after this date to be presentable for conspicuous positions. As soon as they are rooted they must be placed on a shelf close to the glass until well established in their pots, and then subjected to cooler treatment to prevent growth. Plants that have been prepared for this purpose in 5 or 6-inch pots, or even larger, and have completed growth, and have highly coloured foliage, must be prevented from making any further growth. Growth made after this date often spoils the beauty of the plants, for very rarely is the light and sunshine of autumn sufficient to colour them properly. Growth is easily prevented by a lower and more airy atmosphere without the slightest injury to the plants. On the contrary, this treatment hardens and prepares them wonderfully for room-decoration, where they will last double the length of time than would be the case if taken direct from a warm close structure. Plants that have not yet completed their growth should be pushed forward in brisk heat and given every ray of light possible to colour their foliage.

Stephanotis floribunda.—If these plants are to flower well another year every ray of light and sunshine possible should be admitted to them, for if the wood is not well and thoroughly matured they cannot be expected to do this. Those that have completed their growth should have, in addition to light, more air and a drier atmosphere to harden and solidify the wood they have made. Those still growing must be pushed forward in brisk heat to complete their growth as rapidly as possible, or it will not be sufficiently ripened to flower well. Many fail to flower profusely this plant because insufficient attention is paid to the ripening of the wood and preparation of the plant for the period of rest, which must follow if they are to grow luxuriantly and flower abundantly the following year.

Clerodendrons.—Every attention must be devoted to *C. Balfourianum*

and other varieties of similar growth to ripen the wood thoroughly of those required for early flowering. The whole of the stock of plants, whether growing or not, should be exposed to full sunshine, but those that have nearly completed the ripening of their wood should have more air and a drier atmosphere than those that are still growing. When the wood is ripe water may be gradually withheld in order to send the plants to rest, but this must be done gradually or the roots are liable to perish. Those still growing must be encouraged by abundant supplies of heat and weak stimulants to complete their growth as early as possible, for a much longer time will be required to thoroughly mature the wood of these plants than is the case with those started earlier into growth. Seedling plants of *C. fallax* that are well established in from 3 to 5-inch pots may be potted on, especially those in the smaller sizes. If any of them are showing signs of flowering it is useless to pot or pinch them now that the growing season has advanced so far. These and all that it is not necessary to place into larger pots should be liberally supplied with weak stimulants every time they require water. Pots 2 inches larger than those in which they are now growing will be plenty large enough. These plants do well in a compost of fibry loam, leaf mould, sand, and about one-seventh of decayed manure. Leaf mould should be used to the extent of about one-third. If any of these plants are in a backward state they should be pushed forward in brisk heat, while those already too forward may be retarded by a lower temperature; but care must be taken not to check them, or else their heads of bright scarlet flowers will only be small in comparison to what they should be when given liberal treatment. A good batch of *C. fragrans* should be rooted now in 4-inch pots, in which they should be allowed to grow and flower. This sweet double white variety flowers much more freely when confined in small pots than when given abundance of root room.

Gardenias.—The bright hot weather that we have been having has brought the earliest batch of these plants on rapidly, for flowers have already expanded with us, and well-developed buds are plentiful. The flower buds unfold quickly at this season, and if they are coming forward too fast a portion of the plants may be removed for a time to cooler quarters, which will considerably prolong the autumn supply of bloom. While in a somewhat lower temperature care should be taken to water them at their roots with tepid water, or else the roots may suffer and the late flower buds will become crippled. Stimulants must not be used too strong, for more flower buds are injured from this than any other cause. The second and later batches of plants should still remain in the heated structure in which they have been grown during the summer. A good batch of cuttings should now be rooted by inserting them singly in small pots and growing them on afterwards. These will take the place of old plants, which can be thrown away after they have done flowering. For the winter and spring supply of bloom young plants are preferable to old ones, they take up less room during a good period of the year, and are less liable to the attacks of mealy bug and scale. Cuttings rooted now and grown on through the following summer will make by autumn plants more than 2 feet through them.

Tydeas.—Such varieties as Madame Heine that are grown from cuttings for winter flowering should be placed at once into their flowering pots if not already done. Pots 4 and 5 inches in diameter are large enough for these plants. If they are in a backward state push them forward in brisk heat, or if too far advanced they will bear being retarded by cooler treatment without injury. These plants must not be syringed overhead, or else their foliage will be browned and injured. They do best while growing with moisture-holding material beneath them and the atmosphere moderately dry. These plants must still be lightly shaded from bright sunshine, but no more light than possible should be excluded from them.

THE BEE-KEEPER.

NOTES ON BEES.

OPEN VERSUS CLOSE DRIVING.

"A YORKSHIRE BEE-KEEPER" seems to have been unsuccessful in open driving, and desires information upon it and kindred subjects. Bees are always most easily driven when getting honey. Between 7 o'clock and 9.30 A.M. is not the best time to drive bees, but between the hours of 1 and 3 P.M. should be chosen. Open driving is not superior to close driving unless it be more favourable for catching the queen, a feat which should be performed only when the queen is to be deposed. The commotion observed about the hive after drumming was caused by robbers being attracted to the hive while inverted. When hives are being driven it should be performed indoors, unless when honey is plentiful. If bees show a disinclination to run, tie a cheesecloth over the mouth of the hive and set it in a warm place for a few minutes, they will then quickly leave the hive. The best sugar to feed with is either best loaf, granulated or crystal-

lised; if cane sugar, rather thin than thick at this season, without either salt or vinegar. Thirty pounds at least is necessary for a hive to stand the winter, and it is better to let a hive have the whole frames than contracting them too much. Cushions filled with chaff are not nearly so good for covering hives as long grass thoroughly dried, or even straw; either of the two are superior to cloths or chaff cushions.

REARING QUEENS.

"Basil" wishes for some information about raising queens. This is best and easiest done with moveable-combed hives. With straw hives a great deal of cutting comb and fitting into little frames is necessary, which cannot be carried to the same extent as with frame hives. The best hive for raising queens is the sectional hive, but it is best in the hands of an expert. To raise queens to supersede old and unfertilised ones, a good hive containing a prolific queen should be selected and pushed forward, so that swarming will take place some weeks earlier than is usual. After it has been swarmed artificially, or has done it naturally, leave it alone until the queens begin to pipe, or till about the tenth day after swarming; then have in readiness either little boxes to hold three frames or hives, having two to four entrances, with divisions between each lot of bees. In my own case I have hives which I keep for transferring frames and bees to from more bulky hives when taking to the Heather. These hives have two, and some four entrances, which open and close with a slide, and of course division boards are necessary for the number of nuclei, which is simply one frame with bees and queen cell dropped between other two frames filled with foundation. If there are not royal cells enough, two or more frames must go together. The centre combs have usually sufficient brood and bees, but the outside ones are commonly deficient of brood. These I place near the original site, thus equalising the strength of nuclei. With favourable weather the whole of the young queens in about a week or less after hatching will have commenced laying, so that plenty of young queens are now ready to take the place of queens in stocks that have swarmed, and from which a frame of brood with queen cell should be taken and given to nucleus deprived of its queen. A dozen of such nuclei will supply the wants of a large apiary during summer as well as providing young fertile queens for another season. Where purity of breed is wanted, removal to a distance from the influence of other drones is absolutely necessary.

SUPERS VERSUS SECTIONS.

At page 170 in the 20th August issue, your correspondent, "Co. Wicklow," says, "'A Lanarkshire Bee-keeper' takes great trouble to prove that bees prefer ordinary supers to sections." To that I reply that I have taken no trouble to do so. The greatest tyro in bee-keeping soon perceives that, unless it be those who do not exercise their own judgment in the matter. I am glad to see "Co. Wicklow" agrees with me that sections are a mistake, but he misses the mark entirely when he attempts to say that supers are unsaleable, while he must be very unwise who sells super honey at the same price as the contaminated honey from brood combs. All hive dealers do not sell more sections than supers; and as for the demand for supers in preference to sections, I simply gave the evidence and wants of some of the largest honey merchants in Scotland, and singular to say my inquiries were made in order to supply querists—many of them from Ireland—with the price likely to be obtained for honeycomb in sections, as it was a drug in the sister island. Your correspondent has, therefore, an opportunity of assisting his bee-keeping brethren in Ireland by making it public where merchants will give 1s. per lb. for section honey. As for myself, I have an open market for a large quantity of small supers, which I can supply, but for sections there is no demand. If "Co. Wicklow" will read my published articles he will see that I never recommended large supers unless they were divisible ones, while I have also shown that they

are cheaper and more easily prepared and sent to market than sections proper, while the fact that bees fill supers quicker is an important item in their favour.—A LANARKSHIRE BEE-KEEPER.

THE IDEAL HIVE.

"A CAMBRIDGESHIRE BEE-KEEPER" has, in an article somewhat too acrid to gain the earnest attention of men who desire to prove by argument and not by ugly innuendoes the value of the hive they champion, entirely missed the mark, and has not even touched the point at which the contest for superiority really begins. It is well perhaps that the case should be as clearly as possible put before the minds of those apiarians who are as yet undetermined in their verdict as to the value of the different systems for obtaining honey now in vogue amongst practical bee-masters.

There are, in reality, but two schools of beeists—the lovers of the moveable frame hive and the lovers of the straw skep. Now, before even entering upon the various merits and demerits of these respective systems, let us consider the real object we have in view. Is it to gain the greatest amount of honey from each stock? The answer, to my mind, is Most certainly not, and if this answer be the true one—and that it is so I shall endeavour to prove—the whole foundation upon which the article of "A Cambridgeshire Bee-keeper" is built at once collapses. What the object is may very briefly be stated, and a definition of the hive required may be concisely given as follows:—"A hive from which, with the least possible expenditure of time and money, the greatest nett profit can be obtained." What matters it if 150 lbs. can be taken from a hive if the trouble and expense is so great as at once to bring down the nett return to a sum easily realised by another hive of simpler construction, of easy management, and of a description needing a minimum of manipulation? At present, the question whether a larger amount of honey can be taken from the moveable-har hive than the skep may be left unconsidered.

Let me ask a question, and let someone answer it from the notes and accounts, which are doubtless carefully kept by all, of their expenditure and of the time taken up in the varied manipulations their system requires to gain a full measure of success. How long does fixing foundation take? How long does the periodical "spreading of brood," so strongly advocated, occupy the apiarian? How long does the operation of extracting from the bars, taking sections as they are individually finished and inserting new ones, take to perform? Probably the time-honoured "few minutes," which if at the end of the manipulating season were added together, would, in even a moderately sized apiary, amount, doubtless to the surprise of the owner, not to hours only but to days and sometimes weeks. Again, the outlay or purchase of an "extractor," the continued upsetting of the domesticity of the hive, and the interference with the industry of the bees at most important periods, trifling in themselves, are of no small moment, when added to them is the danger of losing the queen or injuring her, and giving an impetus, especially in the late summer, to robbing, which is so easily started that a whole apiary may be put into a state of frenzy by even the opening of a hive, not to speak of any of these delicious manipulations. Now for a very brief summary of the skep. The outlay is small to begin with, the swarm is hived into it at once and not transferred, the material is most conservative of bee life, most inimical to damp, the place of foundation can be taken by a little extra syrup, besides the amount the har-framists advise being given to the swarms supplied with expensive foundation. Why, for the price of foundation sufficient to give to a swarm, as generally advised, full sheets, syrup enough can be given not only to fill a paltry bar hive—ten or twelve standard frames, a size most generally in use—but to fill a large 20-inch by 12-inch Pettigrew skep, and in addition to filling it with comb give such an impetus to egg-laying as to make the hive ready to gather surplus with larger number of workers than the swarm to which foundation and a little syrup only was supplied.

"A Cambridgeshire Bee-keeper" admits the probability of swarms issuing from skeps. He means, I imagine, that the stocks are ready to swarm naturally or to be swarmed artificially at least seven days earlier than the stock in the more elaborate hive. Seven days earlier! time enough to gather, in good weather and in favourable localities, 20 lbs. of honey. He admits this I say, and yet has ejected these valuable early swarms from his apiary in favour of hives at least a week later. In some years a week is a most important time, not merely a paltry seven days of no special value. Again, is anything simpler than to swarm the Pettigrew skep? Is there any hive from which so magnificent a swarm can be taken? Does any hive lend itself more readily to supers, sections, or any other vehicles for obtaining surplus honey? Is there any hive from which more honey can be taken in addition to the surplus honey from the top? I have a fine swarm hived in an 18-inch Pettigrew from which a glass super has been taken, and the stock weighs 95 lbs., showing a prodigious amount of labour, considering that June was in my district a poor month, and that Clover was nearly over in the third week in July. But this result is but poor to what would probably have been obtained in a good season and with a May swarm. The swarm, I may say, came from a bar hive; for although a strong believer in the skep, I am not so bigoted as to eject from the apiary a hive whose merits are not perhaps sufficiently appreciated, as I have no time to spare in useless manipulation. If, then, it can be shown that after the time spent in manipulation, the extra expense incurred both on capital, outlay, and current account, a yield of honey is given by a stock managed by a bee-master of average intelligence, so great

as after paying for all these extra expenses to yield a larger nett profit is given than by the other system, then it will be time, and not till then, for these bar-frame eulogists to come and subvert the teachers of that other system by which any man, not entirely without intelligence, may help himself, by the addition of a few stocks of bees, to his garden or field. Men of genius, men who have the time and money, may possibly make a greater gross profit from these hives with all their charming adjuncts, but if they do it is of no practical use, for our object is to give to the public the idea of a hive of ideal simplicity both in construction and management, and thereby insure that success without which bee-keeping would be but a useless hobby and a pastime for the well-to-do.—FELIX.

FRAME HIVES v. SKEPS.

FOR some time I have endeavoured to assist and advise bee-keepers how best to act with whatever hive he possessed without running into expenses by discarding them and purchasing more expensive hives that would not give better returns. I have also shown how straw hives can be made as profitable as any frame hive, as well as the absurdity of those who published so prominently that no honey worth speaking of could be had from straw hives, or rather that "honey could be had only from frame hives." A greater mistake could not appear in print. There is an apiary near me containing all sorts of hives. The two that have given most honey this year were a straw hive and an old cheese box. I am not aware of having condemned any hive farther than pointing out those which possessed the most points favourable to bee-keeping and those that did not.

Many inexperienced bee-keepers besides your "Cambridgeshire Bee-keeper" have at first thought little of ventilating floors; none but he, however, termed them absurd, and the hundreds who now use them find them the key to successful bee-keeping, while my own experience proves them the same. Had your correspondent supplemented his sixty-four lines of condemnation with some information he would have done some good, but I observe he has had only four years' experience with frame hives, therefore cannot be expected to furnish reliable information, or had he but needed the advice to take nothing for granted, but test and prove everything, his language might have been less hostile.

I think it is quite safe for me to say that I have had more experience with frame hives than any living writer in Great Britain. My experience dates back to 1850 with these, and slightly as your correspondent speaks of what I say, there is not a frame hive made that does not possess some contrivance of my own; and, singular to say, your correspondent unwittingly pays me a high compliment when he says "It is the facility a frame hive gives for spreading brood which is one of its most valuable points." The author of that system is not Mr. Cowan, though he, like your correspondent, claimed it, but he retracted after I took him to task for what he said. The inventor of that was myself, and the second hive I made on that principle had it, but the ventilating floor is better. It has become quite fashionable of late for hive-makers to claim others' inventions. Both "A Dalbeattie" and "A Dumfriesshire Bee-keeper" claimed to be the inventor of my hive. The editor of the paper which published this suppressed my replies, but thanks to a contemporary it was exposed.

The introduction of the quilt was claimed by Abbott in the *British Bee Journal* a few years since, whereas it was fully explained in the pages of this Journal by "A Renfrewshire Bee-keeper," Mr. Langstroth, and myself more than a quarter of a century since. The Raynor queen cage, too, about the same time was explained by Mr. Alexander Ferguson, Stewarton, and "A Mauchline Bee-keeper," as well as "A Renfrewshire Bee-keeper." I was the successful introducer of comb foundation, using it largely, and urged others to it fifteen years before Abbott requested me to instruct him and speak to Mr. A. Neighbour to supply him with plates, which he did; yet, in a year after, told me they were of no use in the hands of cottagers. I put him right, and showed him the methods of fixing. Now a patent is taken out for one of my plans that was made and sold before I hit upon the better plan of grooving the bars and fixing with wax melted in a glue pot, and lifted out and poured into groove with a teaspoon. The splitting of the top bar was also my plan, claimed also by that patentee. Mr. Neighbour, too, had a plan almost similar. The objection I had to the block system was that, as it does yet, checked the foundation, making it liable to break away. Latterly I improved on it by putting in two screws, which held it firm without checking or having it liable to fall when the bar clung from the heat of the hive from the one side of the groove only being waxed. Had the patent been a better mode of fixing foundation than the groove I would have protested against the patent being granted.

"I have more crows to pluck" of a like nature, which I may take up again; but even the above I would not have mentioned had it not been to show your unprejudiced readers that what I have written carries more weight than some, including "Cambridgeshire Bee-keeper," represent. Now that I have given some information, and I am willing to give more. His one question as to which half of the hive I had the sections on. I gladly answer. It was the right half, but my bives have no wrong side. It is the sections that are wrong. If he follows my advice and arranges his supers as I explained he will get more honey, retaining the small pieces of comb; 126 lbs. of finished sections is not the maximum by nearly 100 lbs. that has been taken from a hive here. I stated why and where supers were more saleable in a recent article, and I do not wish to go over that again. So did I about the evils of spreading brood, which if attempted in many parts would be the total annihilation of bees, while no

part of Great Britain is free from low temperatures suddenly after great heat. The present year will be memorable for that; every month, so far as it has gone, having several frosty nights. Besides, my argument that bees spread themselves without any external aid, and that spreading brood does not hatch quicker, and that it is irrational to cram the bees into little space to-day then cool them down the next, has not been negated by anyone. On the contrary, I have proved myself to be correct, and my warning has been given accordingly.

Extracting honey from unsealed combs, all liquid gathered by the bees for food to their young from feculent matter, is thrown out by the extractor, mixed with the honey, and is swallowed by the unsuspecting consumer; yet this is what our modern sages teach bee-keepers to do.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., 237 & 238, High Holborn, London.—*Catalogue of Bulbs, Winter and Spring Flowers (illustrated).*

William Bull, King's Road, Chelsea.—*Catalogue of Bulbs.*

Smail & Co., 23, Lime Street, London, E.C.—*List of Dutch Flower Roots.*

E. G. Henderson & Son, Maida Vale, London.—*Catalogue of Dutch Bulbs.*

Hooper & Co., Covent Garden, London.—*Bulb Catalogue for 1885.*

Barr & Son, 12, King Street, Covent Garden.—*Catalogue of Bulbs and Plants.*

W. Dobbie, 62, Preston Street, Faversham.—*List of Pelargoniums and Fuchsias.*

H. Cannell & Sons, Swanley, Kent.—*Complete Book of the Best Plants to Flower all the Winter (illustrated).*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

National Auricula Society (R. C.).—There are two sections of this Society—the Northern and Southern sections. The Hon. Secretary of the latter is Mr. J. Douglas, The Gardens, Great Gearies, Ilford, Essex, from whom you can obtain all particulars.

Iberis coriacea (C. R.).—The above-named plant is a hybrid between *I. sempervirens* and *I. saxatilis*, as stated on page 176; but your confusion is probably caused by the fact that the last-named plant, *I. saxatilis*, is usually regarded as synonymous with *I. corifolia*, of which a figure was given on page 177. This, however, is quite distinct from *I. sempervirens*.

Fertilising Cereals (W. J.).—Grasses can be artificially fertilised in the same way as other plants—namely, by transferring the pollen from the flowers of one variety to those of another, and it is to experiments of this kind that the letter noted by you refers. In some Grasses and other plants the anthers are mature and discharge the pollen before the stigmas are ready, or in other cases the stigmas reach maturity first, and this necessitates a careful examination before fertilising is attempted.

Seedling Viola (E. C.).—The flowers were very much withered. We could see sufficient, however, of one of them to observe that it was attractive, but whether distinct from all others or not it is impossible for us to say. Send a flower to Mr. William Dean of Walsall, enclosing a stamped envelope for reply. He will perhaps compare it with others in his large collection and favour you with a reply.

Vines Infested with Thrips (P. S.).—You can eradicate the thrips from your vine by fumigating the house with tobacco smoke. Two, three, or even more applications will be necessary to accomplish this, for unless the house is well filled with smoke it will not destroy the eggs. The smokings should be done on successive evenings during calm weather, and in the space of a week, if you still find living insects, it must be repeated. Do not have the house too full of smoke, for it is always better to fumigate two or three times than to give one strong smoking, which is very liable to injure the foliage of the Vines. If you do the fumigating carefully you may destroy the thrips without injury to the Vines or the fruit.

Fungus on Vines (C. H. Contich).—Several of the leaves sent are in-

infested with the black fungus, the mycelium of which is spreading over the surface. Sponging them with a solution of soft soap, then while wet dusting with sulphur, allowing it to remain on for some days, is the only remedy we can suggest that can be safely applied. The Vines have not had good attention, for some of the leaves are withered and the others scorched. The house has been closed when it ought to have been open, and a genial buoyant atmosphere has not been maintained. This faulty management we consider the real cause of the fungus attack, there having been an extravasation of sap, on which the fungus has taken possession; also, if the leaves sent are a fair sample, the Vines are lacking in vigour, and much stouter and larger foliage is essential for the production of first-class Grapes.

A Sussex Plum (R. N.).—We have no doubt that the Plum to which you refer is the Victoria, an extremely prolific and useful variety. It is thus described in the "Fruit Manual":—"Victoria (Alderton; Denyer's Victoria; Sharp's Emperor).—Fruit large; roundish oval, marked with a shallow suture. Skin bright red on the side next the sun, but pale red on the shaded side, and covered with thin bloom. Stalk three-quarters of an inch long, stout. Flesh yellow, very juicy, sweet, and pleasantly flavoured, separating from the stone. A culinary Plum; ripe in the beginning and middle of September. The tree is an immense bearer, and ought to find a place in every garden, however small. Young shoots, downy. This is a Sussex Plum, and was discovered in a garden at Alderton in that county. It became known as Sharp's Emperor, and was ultimately sold by a nurseryman named Denyer, at Brixton, near London, at a high price as a new variety under the name of Denyer's Victoria, in the year 1844."

The Pear Tree Slug (W. W.).—The best remedy for this troublesome pest is to dust the trees frequently with quicklime; perhaps the cause of your non-success is not using sufficient at a dressing. You will find figures of the larvæ and perfect insect in the Journal, page 22, July 6th, 1882. In reference to this insect, Curtis—under the head of "Tentredo adumbrata"—says, "Arboriculturists are familiar with a slimy black larva like a little leech which appears as if glued to the leaves of Pear trees, and which is of very common occurrence in fruit gardens in September and October. From its form and appearance Réaumur called it the slug-worm. At the end of autumn, when it has attained its full size, it somewhat resembles a small tadpole. It has twenty feet, which, however, cannot be seen without dislodging it from the leaf. It does not begin at the edges of the Pear leaf, but gnaws away the parenchyma in the middle, leaving the smallest veins and the epidermis of the under side untouched, so that the leaves attacked are left like the finest lace. After four times casting its skin it changes to an orange-yellow colour, comes down from the tree, and forms a cocoon from particles of soil bound together by a few silken threads. The perfect insect, according to Hartig, is $2\frac{1}{4}$ lines long, smooth, black, and shining, with the horns almost as long as the abdomen; the legs are black, the joints and thighs reddish-brown, the wings obscure." The grub is frequently very destructive to wall trees. It appears on Pear trees when the fruit are from one-half to two-thirds of their full size, and by destroying the parenchyma of the leaves it prevents the elaboration of the sap, brings growth to a standstill, and the Pears, instead of swelling, drop. Some authors consider that the slug-worm of Réaumur produces the *Tentredo Cerasi* of Linnaeus; others consider it to belong to the *Tentredo Aetbiops* of Fabricius. The investigations of Gorsky, Westwood, and M. Delacour have set the question at rest. They have shown that there are several slug-like grubs which are developed into insects belonging to distinct species, and that the *T. Cerasi* of Linnaeus does not form its cocoon in the ground, but amongst the leaves of the Cherry.

Frames for Florists' Flowers (R. T.).—Brick pits about 6 feet wide, 1 foot high in front, and 2 feet high at the back, are valuable adjuncts to any garden, not only for preserving comparatively hardy plants in the winter, but for growing more tender plants in, also such crops as Cucumbers in the summer. Such plants as Carnations, Pansies, Pinks, Chrysanthemums, and various others, including Auriculas, may be safely wintered in such pits, the plants, except those last named, being grown in the open air during the summer. We should not have any concrete bottoms, but should have the foundations of the brickwork 18 inches or more below the ground level, and fill in with rubble to the requisite height, surfacing it with coal ashes. The water would then pass away freely, and the pots could, if necessary, be partially plunged in the ashes, and thus their roots would be protected. In the summer the pits should be deepened so as to accommodate taller plants or crops. The pits should face the south. For Auriculas movable frames should also be provided, as a southern aspect, except in winter, is unsuitable for these plants. In the summer Auriculas require a very cool position, such as the north side of a building, while in the spring an easterly or southerly aspect is preferable, except when the flowers commence expanding, when the plants must be placed in the shaded position. The plants, except in summer, are best placed on stages of wood, which can be readily formed in the frames, and the plants should be close to the glass. We should thus have both pits and frames, baving ashes in the former, placing a few boards on the ashes if any plants required a dry base at any time, and wood shelves in the frames for the Auriculas. We do not know of any special mode of obtaining plants. Private growers frequently exchange plants, but do not usually sell them below their current value.

Various (E. M. K.).—If the shoot of your Hydrangea that is layered is young, not more than half-ripened wood, it will not be long before it forms roots, and can be taken off and placed into a small pot. The best way to increase these plants is by half-ripened cuttings. If you insert some at once in sandy loam and place them under a handlight, keeping them airtight in your house or in a shady place outside, they will be well rooted in about three weeks. They will root the quickest in your house, but must be shaded from the sun. After they are rooted gradually harden them to cool treatment and keep them cool through the winter. In spring transfer them from the small pots into others 5 inches in diameter. You may grow them cool afterwards or gently force them into flower—that is, if flower buds are already formed in the shoots, which should be the case if your plants have been properly treated. Grow the old plants outside until the approach of frost, when they may be taken into your house. Give liberal supplies of water and weak stimulants if their pots are full of roots. Cytisuses are pro-

pagated by cuttings, which will root freely enough at this season of the year. Fill a well-drained 6 or 8-inch pot with equal portions of peat and sand to within half an inch of the rim. The remaining portion to the rim should be filled with clean silver sand. The cuttings should be about 3 inches in length, and the foliage should be removed from the lower half. After the cuttings are made they can be inserted thickly together, well watered, and then covered with a bellglass to keep them airtight. The pot containing the cuttings should either be placed in a cold frame or shaded from the sun in one corner of your house, where they should remain until they are rooted, only removing the glass when water is required. *Vallota purpurea* will do very well outside until the approach of frost, when they should be housed and kept cool through the winter. If your bulbs are strong they will show flower before long, if they are not already doing so. While flowering you may remove them indoors if you wish. During the winter keep them on the dry side at their roots, giving only sufficient water to keep the foliage and their bulbs healthy. The plant mentioned in your fourth question we do not know by the name you give. You can only prevent the Vines covering the roof by thinning them out liberally, reducing the spurs in number, and some of the canes if the former does not prove sufficient. Without you can insure plenty of light Roses will not do well with you. We fear you will not attain much success in growing the two together on the same roof. The Roses will require liberal and constant syringing to keep them clean, and this will not suit the Vines after the fruit is set if you allow them to carry any.

Names of Fruit (Pomo).—Calebasse of foreign growth. (*Jabez Jackson*).—We believe your Pear to be Williams' Bon Chrétien. (*G. Snow*).—The Pears are—No. 1, British Queen; 2, not known. Apple No. 3 is Yellow Ingestre; 4, not known. Plum Jefferson, Grape Black Hamburgh.

Names of Plants.—We only undertake to name species of plants, nor varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*X. Y. Z.*).—The fungus is *Pbyctospora fusca* of Corda, which some regard as a form of *Scleroderma* geaster, Fr. (*R. C. D.*).—*Neottia spiralis*, an Orchid found wild in many parts of England.

COVENT GARDEN MARKET.—SEPTEMBER 9TH.

TRADE heavy this week, with prices giving way.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	$\frac{1}{2}$ sieve	1 0 to 3 6	Melons	each	1 0 to 2 0
Cherries	$\frac{1}{2}$ sieve	0 0 0 0	Oranges	each 100	8 0 12 0
Filberts, Kent..	per 100 lbs.	25 0 0 0	Peaches	per doz.	1 6 8 0
Currants, Red ..	$\frac{1}{2}$ sieve	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0
Black	$\frac{1}{2}$ sieve	0 0 0 0	dessert	dozen	1 0 1 6
Figs	dozen	1 0 1 6	Pine Apples English	lb.	2 0 3 0
Gooseberries ..	$\frac{1}{2}$ sieve	0 0 0 0	Plums	$\frac{1}{2}$ sieve	1 3 3 6
Grapes	lb.	0 6 2 0	Strawberries ..	lb.	0 0 0 0
Lemons	Case	15 0 21 0	St. Michael Pines	each	3 0 7 0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes	.. ..	dozen	1 0 to 0 0	Lettuce	.. ..	dozen	1 0 to 1 0
Asparagus	.. ..	bundle	0 0 - 0 0	Mushrooms	.. ..	punnet	0 6 1 0
Beans, Kidney	.. ..	lb.	0 3 0 0	Mustard and Cress	.. ..	punnet	0 2 0 0
Beet, Red	.. ..	dozen	1 0 2 0	Onions	.. ..	bunch	0 3 0 0
Broccoli	.. ..	bundle	0 9 1 0	Parsley	.. ..	dozen bunches	2 0 3 0
Brussels Sprouts	.. ..	$\frac{1}{2}$ sieve	0 0 0 0	Parsnips	.. ..	dozen	1 0 2 0
Cabbage	.. ..	dozen	0 0 1 0	Potatoes	.. ..	cwt.	4 0 5 0
Capsicums	.. ..	100	1 6 2 0	„ Kidney	.. ..	cwt.	4 0 5 0
Carrots	.. ..	bunch	0 3 0 4	Rhubarb	.. ..	bundle	0 4 0 6
Cauliflowers	.. ..	dozen	2 0 3 0	Salsafy	.. ..	bundle	1 0 0 0
Celery	.. ..	bundle	1 6 2 0	Scorzenera	.. ..	bundle	1 6 0 0
Coleworts	dcz.	bunches	2 0 4 0	Seakale	.. ..	per basket	0 0 0 0
Cucumbers	.. ..	each	0 3 0 6	Shallots	.. ..	.. lb.	0 3 0 0
Endive	.. ..	dozen	1 0 2 0	Spinach	.. ..	hushel	2 0 4 0
Herbs	.. ..	hunch	0 2 0 0	Tomatoes	.. ..	.. lb.	0 4 0 0
Leeks	.. ..	hunch	0 3 0 4	Turnips	.. ..	bunch	0 4 0 0



THE CLERGYMAN'S FARM.

(Continued from page 218.)

In laying down land to permanent pasture, the selection of seed must be of even more importance than the careful preparation of the seed bed, for it is obvious that without good seed of the best sorts our efforts to obtain a really first-class pasture will be defeated, and we ought not to be satisfied with anything but the best. No special effort is requisite to obtain it, but it is highly important that a farmer should know which are the best sorts of Grasses and other plants for this purpose. A mere knowledge of names will not satisfy an earnest intelligent man. He will want to know

the plants individually, and to judge for himself of their comparative value. Nor is it difficult to do this if only we would devote a little space for trial plots, and we submit that if this were done on every farm to test not only forage plants, but cereals, roots, and all other plants of the farm, the knowledge gained would prove highly valuable to farmers individually and collectively. Without it a man may think he is doing well if he can maintain four or five sheep upon an acre of grass; with it he is not content unless he can keep well fully double the number of sheep upon an acre. Can anything show more clearly the difference between knowledge and ignorance than this fact? We are all wont to exclaim about hard times, to deplore the hardships of foreign competition; but do we do all that is possible to "meet the times?" Surely, if by superior cultivation of the soil and careful selection of plants we can double our profits, every sensible man will try and do so.

Let us now see what is known about plants for permanent pasture by those who have given full attention to the matter. Before all things we must have Grasses which are known to be nutritious as well as palatable. Of these the best are Cocksfoot (*Dactylis glomerata*), Timothy (*Phleum pratense*), Meadow Foxtail (*Alopecurus pratensis*), Meadow Fescue (*Festuca pratensis*), and Tall Fescue (*Festuca elatior*). These fine sorts of Grass are indispensable, and it has been said of them that sown in mixture they alone supply favourite and nutritious food throughout the year. Meadow Foxtail is of especial value for its early growth. Cocksfoot, however, takes the leading place, because it will grow in any soil, produces the greatest bulk of food, is so sturdy and robust that it suffers little from extremes of weather, is the most nutritious Grass, is eaten greedily by sheep and cattle in all stages of growth, and after the mowing for hay it makes quicker growth than any other Grass. Timothy follows Meadow Foxtail closely in spring, giving a free strong growth, and it continues to afford plenty of "keep" throughout summer. Both the Fescues mentioned are of strong growth, which is much liked by sheep; and the stronger growing of the two, Tall Fescue, answers well in wet heavy soils. Now, these five Grasses have been objected to on the score of coarseness, but it has been proved by chemical examination and by experiments in feeding, that they are as nutritious as they are productive. The finer Grasses used in mixture with them are Crested Dogtail (*Cynosurus cristatus*), Sheep's Fescue (*Festuca ovina*), Hard Fescue (*Festuca duriuscula*), Golden Oat Grass (*Avena flavescens*). Fiorin (*Agrostis stolonifera*) is also frequently recommended, but we never use it, owing to the fact of ergot being so frequently introduced into pastures among its seed, and it is beyond dispute that ergot is often the cause of abortion in cows. We are glad to find that general attention is being called to ergot in pastures as a source of abortion—many a so-called mysterious case being traceable to it.

A moderate proportion of Clovers is mixed with the Grasses. Perennial Red Clover, White Dutch Clover, Alsike Clover, Trefoil or Nonsuch, in some places indigenous to the soil, and it is one of our best fodder plants, Yarrow. Taking 41 lbs. as a sufficient quantity of seed for sowing an acre, we may safely apportion it in the following manner: Cocksfoot 10 lbs., Timothy 5 lbs., Foxtail 5 lbs., Meadow Fescue 5 lbs., Tall Fescue 5 lbs., Crested Dogtail 2 lbs., Sheep's Fescue 1 lb., Hard Fescue 1 lb., Golden Oat Grass 1 lb., Perennial Red Clover 1 lb., White Dutch Clover, 1½ lb., Alsike Clover 1 lb., Nonsuch 1½ lb., Yarrow 1 lb. As an example of the common ignorance which prevails about our best fodder plants we may mention the fact of having been asked to tell how to eradicate Nonsuch from pasture where it was regarded as a pest during the past summer.

Very earnestly do we beg our readers to give the attention to this matter which its importance demands, and of which it is undoubtedly worthy. The limited area of permanent pasture upon the clergyman's farm is all the more reason why it should be as good as possible. We do not advocate specula-

tive or ultra scientific farming, but we certainly do urge the importance of closer attention to the teaching of results obtained by the patient and costly experiments of such men as Mr. C. De Laune Faunce De Laune, who has so generously placed at our disposal the invaluable results of years of careful trials in laying down land in pasture, and close observation of Grasses. Experience has shown that in very many instances the seed mixtures brought into the market for permanent pastures are worthless, and the consulting botanist of the Royal Agricultural Society said long ago, "I am satisfied that the annual loss to the country (necessarily implying a loss to the farmer) is very great from sowing bad Grasses and worthless seed of good Grasses. It would effect a great improvement if cultivators were to discontinue using prepared mixtures and purchase the Grasses they propose to sow in the proper proportions, and mix them themselves."

(To be continued.)

WORK ON THE HOME FARM.

Now that harvest is almost finished we have seriously to take autumn work in hand, and in doing this let us keep practical utility well to the fore. The land is dry; the crops are cleared from the greater part of it; the weather is fine—ergo, if the land is foul, clean it. Leave no stubbles alone till spring if you can help it; but before all things get them clean, and any not required for winter corn or green crops or other special purposes may be sown with white Mustard, to be eaten off or ploughed in at any time. This course is sound practice, but the advice being given this autumn to leave stubbles alone and let them pass through winter foul with weeds, because the roots will retain nitrogen in the soil, is not. By all means let us apply science to farming, but do let us have common sense with it. We are giving particular attention now to arrangements for sowing green crops for sheep-feeding next spring. *Trifolium incarnatum* will be sown very soon upon clean unploughed stubbles and simply harrowed in. Rye comes next upon land that is ploughed and is well drained and fertile. Unfortunately we must sow some upon poor land, and shall have to give it a half dressing of artificial manure. This crop will be highly valuable for sheep as well as for horses, cows, and store cattle. Our primary object just now is to make ample provision for the large flock of sheep on the home farm, but we may remind every home farmer of the importance of an early cut of Rye for the dairy cows in any case, but especially if the drought has seriously affected the Cabbage crop. Next in order of sowing come winter Oats, for which the last week of the month will be soon enough; and remember, this corn crop may be of great service in spring as a green crop for the sheep. It is one of the farmer's safety valves, and he ought always to be able to use it for grazing if he wants it—if not, he has simply to leave it alone, with the pleasant assurance that he will have an early crop of corn ready for harvest by the middle of July. Let not beginners make a mistake and sow spring Oats. The tawny or winter Oat is very hardy, and is uninjured by cold, to which spring Oats frequently succumb. In October we sow winter Tares, our object being to get them well above the surface with a short sturdy growth before winter sets in, so as to have them ready for an early strong growth in spring. If sown too early they become so tall as to suffer from excessive cold, and the crop is either spoiled or lost outright. One sowing of winter Tares is obviously enough, and it is in spring and early summer that sowings of successional crops are made. Bearing in mind the great utility of winter Tares, especially in a late spring like we had this year, it will be well to make a careful calculation of our probable requirements, and let that be our guide as to the extent of land to be sown with this crop.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				Rain
	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min	In sun.	On grass	
1885.		Inches.	deg.	deg.		deg.	deg	deg.	deg	In.
Augst. and Sept.										
Sunday	30	30.024	57.8	49.4	N.E.	58.0	63.8	46.9	110.9	40.8
Monday	31	30.072	56.0	51.7	N.E.	57.8	59.3	48.9	69.7	42.9
Tuesday	1	30.135	58.0	51.9	N.E.	56.8	66.4	46.3	104.6	39.5
Wednesday ..	2	29.973	60.0	54.6	S.E.	56.6	65.8	43.3	86.4	36.6
Thursday	3	29.652	62.6	59.9	S.	57.3	71.8	59.0	111.4	55.8
Friday	4	29.626	58.4	57.5	W.	57.8	70.6	52.1	111.2	45.0
Saturday	5	29.589	60.8	56.3	S.W.	57.6	71.8	52.6	116.3	46.6
		29.867	59.1	54.5		57.1	67.1	49.9	101.5	43.9
										0.615

REMARKS.

30th.—Generally fine, but cloudy after noon.
 31st.—Foggy early, cloudy morning, rain 10.15 A.M., and at intervals during remainder of day.
 1st.—Fine, but not much bright sunshine.
 2nd.—Fair early; cloudy, with showers in morning; wet afternoon.
 3rd.—Fine bright day.
 4th.—Wet and thick till 10 A.M., then fine and bright, but two slight showers in afternoon.
 5th.—Fine and bright, with slight showers till 2.10 P.M., when heavy rain came on; fine after.
 Temperature again slightly below the average, the nights of August 31st, September 1st and September 1st and 2nd being cold, almost a frost on the grass.—G. J. SYMONS.



COMING EVENTS

17	TH	Sale of Bulbs at Protheroe's Rooms, Cheapside.
18	F	
19	S	
20	SUN	SIXTEENTH SUNDAY AFTER TRINITY.
21	M	
22	TU	
23	W	Sale of Bulbs at Stevens' Rooms, Covent Garden.

RENOVATING OLD FRUIT TREES.

THE interesting "Notes on Fruit and Fruit Trees" by "A Kentish Gardener," at page 198, reminded me that there must be thousands of fruit trees which are in an unfruitful condition, and which would be benefited by a timely and judicious manipulation of root and branch. Unfruitfulness and debility are brought about through various causes, which are generally under the control of a gardener. In many gardens there are numerous Apple and Pear trees in the same condition in having too many fruit buds as those described by "A Kentish Gardener." Young gardeners may think that I am not writing very seriously when I say this, but it only applies to those trees which make little or no wood growth; and in nine cases out of ten very few fruits set on those trees, although they may have flowered profusely, and climatic influences were in their favour. The cause of this is a want of vigour; and the best way to improve them is to thin the spurs and fruit buds where too thickly placed, also removing the surface soil from the roots, baring them as much as possible, substituting for the soil a thorough dressing of equal parts of farmyard manure, wood ashes, and good loam, with a moderate addition of old lime rubbish. This we have found by experience imparts vigour to such trees, and so causes them to perfect good crops of fruit.

Old trees, either bush-trained, pyramids, or those trained to walls, which have hitherto perfected fair crops of fruit, but are now becoming less satisfactory, may have fresh life imparted to them by being subjected to the same process. Old Pear trees horizontally trained to walls are often seen with very old spurs attached to them; and although a good number of fruits may be secured, they are invariably small and much deformed. The means generally resorted to to bring these old trees into a fruitful condition beyond giving a good dressing to the roots, is to reduce the number of spurs a few at a time, sawing or cutting them off about an inch from the main stem. When fresh shoots are produced they are managed so as to form fruiting spurs. One of the best methods for bringing these old trees into a fruitful condition is to remove every alternate branch, and train fresh shoots 15 inches apart in an oblique direction from the spurs of the remaining branches; or if the spurs have been cut back, train in the young shoots. These young shoots become studded with fruit buds, and eventually form healthy fruiting spurs. We have known very old trees produce large crops of fruit when treated in the above manner.

Old cordon-trained trees of Apples or Pears may be kept in good health for years if the roots receive proper attention, and are not overcropped or otherwise ill-managed. To keep them in continuous good health they should receive a dressing annually, removing as much of the surface soil as possible. If the trees ever show signs of exhaustion a trench should be dug 3 or 4 feet from the wall, and the old soil worked carefully from the roots without disturbing those

within 18 inches of the stem more than can be helped. Before the soil is returned it should receive the addition of some good loam, wood ashes, and old mortar rubbish. If good loam is not at command turf-parings may be added. The best time to carry out the above instructions is immediately after the fall of the leaf.

Well-managed orchards of standard trees on grass are very profitable, but too often they are sadly neglected. It is true that orchard standards do not require much pruning, but they should not be allowed to grow into a tangled mass, the centre of the tree being well thinned to admit light and air to the branches. Unless the trees are well protected and the lower branches out of reach of horses or cows should not be allowed in the orchard, but sheep could be admitted, as they would enrich the ground and keep the grass down. A good dressing of farmyard manure given annually just after the fruit is gathered will prove very beneficial.—A. YOUNG.

ROSES AT SHEFFIELD.

THOSE readers whose knowledge of Sheffield is confined to the glimpse obtained in passing through the town by rail will doubtless smile at the prospect of the queen of flowers reigning in the neighbourhood of such an uncongenial atmosphere of noxious gases and smoke. Rose-growing in and around Sheffield has often been deprecated, nevertheless hundreds of good Roses that would not disgrace the exhibition table are yearly grown, and the rosarians of Sheffield are as deeply interested in Rose culture as their brethren who are in most favoured districts. A brief description of the collection of Roses at Highbury, the residence of D. Gilmour, junr., Esq., of Sandgate, may be both interesting and instructive. It is situated in the western suburbs of Sheffield and about four miles from the centre of the town, and five miles from the forest of tall chimney shafts that indicate the manufacturing part of the town and fill the atmosphere with dense clouds of heavy smoke, from which falls an unceasing shower of sooty particles, or "blacks" as they are frequently called.

The collection contains more than 3000 plants, and is the largest in the district belonging to an amateur; 2000 plants are devoted to the growth of blooms suitable for exhibition purposes. The beds, many of which are on the lawn, are wide enough for two rows of plants, and contain from twelve to thirty in each bed. One variety only is planted in a bed; the effect of the masses of different shades and colours produced by this arrangement being very striking. Borders about 4 feet wide, in which the Roses are planted in rows, occupy other portions of the ground. The plants this season, with a few exceptions, have produced a large number of fine blooms, and being full of vigour will continue to furnish a supply of good flowers until cut down by frost or spoiled by rough weather. Some good varieties that do well in many localities are not suitable for this district; those that do not succeed are, after a fair trial, discarded for some more suitable variety. The Duke of Edinburgh is an example, being subject to mildew no matter what care and attention is bestowed upon it; another is the Comtesse de Serenye, which produces large trusses of fine firm buds, but they do not open properly, and this variety will doubtless after this season be discarded. Star of Waltham is also inferior when grown here. Baroness de Rothschild, Senateur Vaisse, Fisher Holmes, Charles Lefebvre, Marie Baumann, Francois Michelin, Sir Garnet Wolseley, Duchess of Bedford, Charles Darwin, Horace Vernet, and Etienne Levat are amongst the varieties that have done the best this season. A. K. Williams have also done well, but has not yet been tested as to hardiness sufficiently to be at present recommended for similar districts; but probably the best Rose this season is Madame Alphonse Lavallée, which has done very well, the blooms being good with strong petals, very enduring in a cut state—an excellent recommendation when required for exhibition purposes. La France is extensively grown, and its rich satiny rose-coloured blooms have been gathered in hundreds. A row of about 200 plants bordering the path in the shrubbery were planted four years ago by Mr. Gilmour, and have produced each season an abundance of fine flowers, and on the occasion of a recent visit were still in full bloom. This variety is, however, likely to give way to some extent to Baroness Rothschild, which produces blooms more adapted for exhibition purposes. Several standard trees of Gloire de Dijon also occupy a position in the shrubbery, and they bloom freely each year, although they are never manured and to a certain extent left to shift for themselves.

Mr. Gilmour is a most enthusiastic and thoroughly practical cultivator, who commenced Rose culture under many drawbacks and difficulties. The natural soil of his grounds was first submitted to a competent analyst, who pronounced it sterile. To grow Roses with any degree of success it was therefore necessary to alter its character, and by the addition of suitable materials to make it rich and fertile. To do this the soil in the beds was dug out 2 feet deep and the bottom filled up about 9 inches with clay, upon which a layer of good manure was placed, and then filled up with loam, decayed stable manure, and a little clay, well incorporated together. In due time the Roses were planted and have continued to grow and bloom successfully.

About the first week in April pruning is commenced; if done earlier the late spring frosts, which are sometimes very severe in this neighbourhood, would cut down the new growths. Well-decayed stable manure is freely applied, and in addition Beeson's bone manure, nitrate of soda and night soil (from an earth closet) are also judiciously used. When the flower buds are set liquid food is supplied, prepared from stable droppings and night soil, &c. When the season is over and the wood sufficiently matured, all weak growths and strong sappy shoots are cut out and the beds heavily mulched with stable litter as a protection from the frosts, which sometimes destroy all the exposed wood. The plants devoted to exhibition purposes have all growths but three of the strongest removed in September, and these are cut down in spring to three or four buds.

Briars are the best stocks for this locality. The Manetti has been tried, but is not so suitable as the briar. The Briar stocks are raised from seed and budded as soon as they are of sufficient strength. The grounds are sloping with a southerly aspect, but are exposed to the S.W. and N.E. winds that frequently sweep down from the moorlands a few miles distant with sufficient force to make Highbury (a strong well-built stone residence) rock perceptibly. The Roses have on such occasions a rough time of it and fare badly.

A "Rose Bazaar" was held in Sheffield last July in aid of the Children's Hospital, on which occasion Mr. Gilmour contributed 2000 blooms, many of exhibition quality—a large number to be cut from one collection in a single day, and furnishes an example of the abundant supply that is yearly produced. On the occasion of the visit (late in August) previously alluded to there was no lack of Roses, many very good specimens, but the litter made by the falling petals was not nearly so great as it had been earlier in the season.

Tea Roses in pots are also well grown, and in early spring the greenhouses are stocked with a choice collection in excellent health, bearing a profusion of delicately perfumed blooms. Mr. Gilmour's love of the Rose is shared by his gardener, Mr. E. Holland, who is equally desirous to excel in its culture, and ably carries out the wishes and instructions of his employer, and in four years he has carried off thirty-one first and nine second prizes for Roses, obtained chiefly in open class competition. At many of our local flower shows cut Roses, not for competition, from Mr. Gilmour's collection have been greatly admired for their size and beauty.

Although the Rose reigns supreme she does not (and never should) exclude all other plants. Lilioms occupy a position both in the greenhouse and the open border. A batch of the noble *L. auratum* is producing a number of fine blooms of varied tints and markings. A fine pot of *L. rubrum* has just bloomed, the colour of the petals being very dark and heavily marked. *L. longiflorum*, *L. Harrisii*, *L. tigrinum* (double and single), and others make up a good collection.

After a fair trial the following Roses have all done well and can be recommended for cultivation in similar localities and under similar conditions, and may serve as a guide to those who have neither the time nor convenience to experiment on so large a scale. No Rose should be hastily condemned because it does not succeed in a certain locality; what fails in one district may be very successful in another. In reading these notes it is therefore necessary that the circumstances and conditions under which the Roses are grown should be borne in mind. Baroness de Rothschild, Charles Darwin, Charles Lefebvre, Baron Nathaniel de Rothschild, Countess of Rosebery, Dr. Andry, Duchess of Bedford, Duke of Teck, Dupuy Jamain, Etienne Levet, Mons. E. Y. Teas, Fisher Holmes, François Levet, Harrison Weir, La France, Louis Van Houtte, Madame Eugène Verdier, Madame Noman, Mdlle. Annie Wood, Marquise de Castellane, Marie Baumann, Merveille de Lyon, Mrs. Jowitt, Princess Beatrice, Pierre Notting, Horace Vernet, Senateur Vaisse, Sir Garnet Wolseley, Xavier Olibo, and Madame Alphonse Lavallée. Those not fully acquainted with the above varieties may readily

obtain a full description by consulting the catalogue of any grower who advertises in the Journal.—J. H. S.

SOME THOUGHTS AND SUGGESTIONS ON FRUIT AND FRUIT-GROWING.

[A Lecture delivered at Wrexham, Friday, September 11th, 1885, before the North Wales and Border Counties Pomological Society, by Mr. E. J. Baillie, F.L.S.]

POMOLOGY is a wide subject—quite wide enough at any rate to afford ample scope for much more than an evening's talk, and yet I may ask to be permitted to travel even beyond the lines which might fairly be regarded as its limits. My excuse for this would be found in the fact that your society is young, and that before we go into matters of more minute detail which can be rightly introduced if we treated Pomology as a science, it is necessary to look at the question of fruits and fruit-growing in its aspects, varied and interesting, before cutting up our work into sections.

The word "fruit" deserves at least more than passing attention. It is a word often narrowed in its meaning and misunderstood in application. The very derivation of the word is most interesting and suggestive. It is from the word *fructus*, meaning "enjoyment." There is surely a text for moralising here. Rightly appreciated there is here a wide field for suggestiveness. There is in the occupation of fruit-growing all the elements for a life of enjoyment. It is not my intention to refer to poets or moralists to enforce the fact that gardening is among the purest of human pleasures and the most healthful of occupations. The voice of Scripture, of philosophy, of every form of literature in all periods of this earth's history, proclaims the praise of gardens. Fruit has been defined as "whatever is produced for the enjoyment of man or animals by the process of vegetable growth." It is that part of plants which contains the seed. Every seed vessel is a fruit in the language of science. But we have to consider to-night those products of the vegetable kingdom more popularly associated with the everyday idea of fruit, and yet I want to bring under your notice some items which have hitherto been neglected, and have as yet had no place assigned to them in the catalogue of cultivated produce.

From a purely commercial point of view the question of fruit cultivation is one of serious national importance. I need not remind you in what high quarters the subject has found favour. The Ex-Prime Minister, our neighbour, Mr. Gladstone, has more than once discoursed upon the toothsome compound, British jam, and the question is rapidly pressing to the immediate forefront of political, scientific, and commercial economy. In 1883, according to the statistical sheet of agricultural returns, 190,710 acres were under fruit cultivation in the United Kingdom. In 1884 the acreage had increased to 194,723 acres, or an increase, in a single year, or over 4000 acres. We may presume that the returns, when made up for the present year, may reveal the fact that we have about 200,000 acres covered with fruit trees and fruit-bearing plants. So much for its bearing upon the land and labour question. Let us see how the question of finance is affected. In 1882 we paid over two millions of money for the importation of foreign fruit. Just think for a moment what that means. What an enormous saving could be effected if much or most of this could be distributed amongst the home growers, to be expended in home industries. The absolute money value is enormous, but think what it represents in healthful occupation, in useful labour, and in happy life. Then if the habit of fruit-eating could be induced—that is, the habit of regarding fruit as a staple article of diet for the people, these figures would be enormously increased at the expense of the importation of foreign meats, and to the benefit of all concerned both in mind, body, and estate. Do not think there is any danger of the thing being overdone. There is practically unlimited room for development now, to say nothing of the ever-widening area which will open out as the dietetic errors of the people are exposed, and the rising generation are educated to the advantages secured by a life made very much worth living by regarding the rules of health, and by the cultivation of simplicity of tastes, frugality, and thrift.

Dr. Robertson of Errol in Perthshire read a paper some months ago before the Perthshire Society of Natural Science, in which he dealt with some facts presented in the fruit-growing district of the Carse of Gowrie. Dr. Robertson is an enthusiast in the matter, and it is not surprising that his neighbours have been fired by the force of his example. Enthusiasm is happily contagious, but it is seldom epidemic. The Doctor explains how the district was a noted one at one time, but its glory had departed, and it is only within comparatively recent times that a new era seems to show evidence of approach. One gentleman in the district netted £200 in one year from 7000 Gooseberry

bushes, whilst some few years ago 1700 bushes had, on an average yielded as much as 2s. worth of fruit upon each bush. According to Mr. Charles Whitehead, the crop of Gooseberries in 1883 produced something like £75 per acre, and in 1882 fully £100 per acre. I do not know what the produce would yield in Gooseberry-growing districts this year, but when I was in Cambridgeshire in the summer the trees of the fruit farms in that county were literally loaded, and the growers were making good prices.

To come nearer home to this western side of the island let us have some particulars of the Gloucester fruit farm of Lord Sudeley. His Lordship's home farm, near Toddington, was some few years ago an ordinary arable farm, for which nobody could be found willing to offer the previous rent of £1 per acre. His Lordship drained and levelled the ground, planted hedges for shelter, and Plum trees, 6 feet standards, three years old from a nursery, and which had been started in advance of the experiment, were planted in rows of 15 feet apart. Raspberries, Currants, and Gooseberries were interspersed in carefully arranged order, so that straight and uninterrupted vistas open in every direction. His Lordship had about 40,000 Plum trees, and these were all most carefully staked. Sometimes over 300 workers are employed in weeding, picking, and packing. The farm is surrounded by a fence of Canadian Poplars, planted a yard apart, and when the trunks meet and the tops are pollarded at 18 to 20 feet above the ground level, a remarkable natural wall will be formed. Mr. Beach's jam factory is established upon the premises, and some idea of the extent of the business carried on may be gathered from the fact that the bottles used in a year cost about £1000. The setting of the fruit is assisted by bees visiting the blossoms, and an apiary of 165 hives is maintained under the care of an experienced manager. That does not look like failure.

Added to this the land laws are now favourable, so that there should really be little or no hindrance to enterprise. Every place is fitted to grow fruit of some sort. That I believe is an established certainty, the doubts of the desponding being but groundless alarm. We must not be discouraged by adverse comments of the horticultural or the general press. Writers are influenced unduly by the appearances of the moment, but the experience of years shows that Nature is always mightier in repair than she is terrible in ravage. We have been repeatedly told, for instance, that Cheshire is not suitable for fruit-growing. That is only a half truth. I visited a few days ago a Cheshire fruit farm, a brief account of which appears in the *Journal of Horticulture*. Anyone filled with doubt or fear for fruit-farming in this district has but to pay a visit to this farm, he will there find abundant evidence to satisfy him that we can grow Apples, Pears, and Plums, as well as cheese.

THE STRAWBERRY.

But we must hurry on to the consideration of some more practical points connected with our subject. First, then, let us consider briefly some phases of the question bearing upon the cultivation and production of small fruits. The extent of Strawberry cultivation is something enormous. I read recently that Messrs. Vinson, who are large Strawberry growers in the county of Kent, are reckoned to grow 500 acres of Strawberries, and pick probably something like 1000 tons. It is not an uncommon sight, I believe, to see ten or a dozen railway vans loading fruits for the northern markets. Messrs. Vinson employ something like 300 pickers resident in their own district, whilst they employ about 1000 altogether. In gathering time the pickers live in tents set up round the sides of the fields, and the delights of the situation may be better imagined than described.

In the *Field* newspaper of August 15th last I observed a letter from Mr. Walter Kruse of Maidstone, giving some particulars of his system of "surface culture in fruit farming." In the course of that letter he remarks, "Since your reporter was here we have completed gathering our Strawberry crop, which has much exceeded our expectations, and has truly been an extraordinary one. Last year we had what we considered the very good crop, considering the very dry season, of over 5½ tons from about 2½ acres, or nearly 2 tons per acre. This year, after grubbing up half an acre of plants, we gathered over 9½ tons, or nearly 4 tons per acre." At market price you may readily find out what Mr. Kruse has realised. He remarks that he found the variety Sir Joseph Paxton the best adapted for market purposes. This, I have no doubt, is a correct judgment, as the fruit of this variety is shapely, firm, and solid, and if gathered dry it may be kept for a day or two, not only undamaged but improved in quality. The Strawberry is one of the most valuable of our British fruits; sub-acid, juicy, and cooling, its value medicinally can hardly be over-rated.

The cultivation is simple and the plant in every way productive. Plants should be placed out during August or September, the season being determined by the weather. This year, for instance, runners are only now available in consequence of the long-continued drought. The length of time a bed may be considered productive is variable, depending upon the constitution of the variety and the condition of the situation; but fresh plantations should be made every year for succession. British Queen, Duke of Edinburgh, Elton, James Veitch, Keens' Seedling, Loxford Hall, Oxonian, President, Sir Charles Napier, and Sir Joseph Paxton may be counted as the most popular and best varieties. They can be grown anywhere, always command a ready sale, and the demand is practically unlimited. I believe the proprietors of the preserve factories—sugar boilers as they are called in the Liverpool district—have this year received constant and considerable consignments from Kent and the southern counties. The cost of carriage added to the price of the fruit leads one to believe that there is a most eligible opportunity for the still further development of Strawberry farming in North Wales and the Border counties.

The succulent character of the Strawberry is such as to make it a necessity that it should receive most careful handling, and careless picking and packing may be the cause often of unsatisfactory returns. I may mention a fact which came under my notice this last season. In one of the Cheshire markets a careful grower, who invariably takes pains to have his fruits properly presented, was making 6d. and 7d. per quart for as much fruit as he could market, whilst his neighbours were glad to get 3d. and 4d., and oftentimes had to take large quantities to the Lancashire markets, simply because the fruit had been reduced to a pulp oozing through the baskets and was unsaleable except for boiling down. The packing which commends itself most is a system of which I have an example before me. The fruit is laid in clean chipwood punnets holding each a quart, leaves are placed carefully to protect and decorate, the punnets are then placed in a tray divided into compartments and boxed in tiers, so that the berries are not injured in the least, and are lifted from the case just as fresh and beautiful as when they were put in.

(To be continued.)

EXHIBITING CHRYSANTHEMUMS.

I NOTICE several Chrysanthemum societies are offering prizes as follows:—For twenty-four cut blooms incurred, not less than eighteen varieties or more than two of one sort. What I want to know is, would twenty-four distinct varieties stand before eighteen, provided all were good? I suppose you could put up a much heavier stand by staging duplicates of the Queens and Empresses which would throw out some of the smaller varieties, although they might be as well grown of the sort. Supposing A showed eighteen varieties all good, and B showed twenty-four varieties, eighteen of which were equally as good as A's and the other six were as good as the varieties could be, which ought to be first? An opinion expressed on this point in the *Journal* would perhaps assist some young exhibitors besides myself.

I am looking out very anxiously for Mr. Molyneux to fulfil the promise he made some time ago, which was to this effect: "There are many other details in Chrysanthemum culture that cannot be fully dealt with in a short article like this, but I hope at some future time to give exhaustive details of the mode practised in producing exhibition blooms."—CHRYSANTHEMUM.

[Provided eighteen varieties are staged the conditions are complied with. If a person could stage twenty-four varieties in the class he could, in all probability, select from them twenty-four better blooms in eighteen or twenty varieties, and we suspect he would act prudently in doing so. We are willing, however, to publish the opinions of growers and judges on this matter.]

AN OCTOGENARIAN HORTICULTURIST.

ON Monday, the 7th inst., the employés of Messrs. Wm. Barron and Son, of the Elvaston Nurseries, Borrowash, near Derby, to the number of sixty-five, were entertained at dinner by Mr. Wm. Barron, the senior partner of the firm, to celebrate his eightieth birthday. The employés took advantage of the occasion to show the high esteem in which they hold their host by presenting the octogenarian with an armchair, accompanied by an appropriate address. During the evening Mr. Barron gave his guests a very interesting sketch of his past career.

Mr. Barron has been a most enthusiastic horticulturist all his life, having commenced his career of gardening as an apprentice at Blackadder, the seat of Thos. Boswell, Esq., where he made rapid progress in his profession. Having finished his term of apprenticeship, he was appointed foreman in the houses under Mr. McNab at the Botanic Gardens, Edinburgh; from thence he went to Sion House. Having remained at Sion House for some considerable time he was selected to lay out the gardens at Elvaston Castle, the grounds of which are famed for the artistic manner in which they have been designed. Ultimately, Mr. Barron was per-

manently appointed head gardener and steward, in which position he remained for more than thirty years, during which time he enjoyed the entire confidence and respect of his noble employer, and was held in high esteem by all those with whom he came in contact. During the time he had charge of the Elvaston gardens he brought together one of the best collections of Coniferae in this country, some of which have attained the proportions of large timber trees.

Mr. Barron has made himself famous both as a landscape gardener, and for his successful mode of removing large trees, some of them being of great dimensions, amongst which may be mentioned a few of the largest. The first large trees that he attempted to remove were some Cedars of Lebanon at Elvaston. The largest of these measures at the present time 80 feet in height, 9 feet 9 inches circumference of stem, with a spread of branches 63 feet in diameter. This tree is in the most robust health. He also removed a Cedar of Lebanon from Hornsey to Acton, 60 feet high. This required thirteen horses to convey it to its destination. One of the largest trees removed was a Cedar of Lebanon for Sir John Hartop, Bart. This tree measured 50 feet high, 50 feet diameter of branches, and was moved with a ball 18 feet long by 16 feet in width by 3 feet 7 inches deep, the whole weight being computed at 50 tons.

The greatest feat of tree-lifting was, however, accomplished at Dover, when an old Yew, considered to be over a thousand years old, was moved with the greatest success, and is now to be seen in a thriving condition. Mr. Barron is still in the enjoyment of excellent health, thus showing the beneficial results of temperate habits and constant activity.

VINE GOSSIP.

Much has been said lately about Vine leaves being scorched or curled, and I wish to add a few observations on the subject. The last Saturday in July here was a scorching day, though with the wind being north-easterly the temperature was not excessive, but the sun was extremely bright with a very dry atmosphere. My Gros Colman Vines in a span-house running north and south did well up till about eleven in the morning, then the four end Vines in the south-east corner, together with a Madresfield Court, were very much burnt. I cannot understand how it should be so, as this house is well ventilated by five in the morning; in fact, this is always the first house attended to. Between noon and three o'clock I watched the south end very closely, and all was right until about four, then the Gros Colman on the west side was slightly burnt, and a few exposed bunches of Madresfield Court were burnt. As soon as the sun's rays were off the house I syringed all the injured Vines thoroughly, anxiously watching the result on Sunday, but no farther damage was done. On Monday to be safe I used a slight coat of Elliott's Summer Cloud outside the glass to slightly shade the four end, Vines on the east side, and also the south end. The mystery is that supposing the morning burning was caused by insufficient ventilation, it could not be so at four in the afternoon. The Grapes were at a standstill for at least ten days. In the meanwhile I gave these Vines a little liquid manure, and I am pleased to say the Grapes are swelling well. They will be later, but do not think any worse for the check. The foliage did not fall, but curled very much, though now even these have expanded. Last year the Vines were caught in the same way at the north-east corner, though the Grapes coloured and did as well as the rest, only being later. I expected this time to have seen them somewhat weaker, but it is not so; the crop and berries especially are the best in the house, which I attribute to the extra liberal treatment they received to counteract the burning. The foliage is good up to the height of 4 feet, when the rods turn up the roof, the leaves measuring 12 or 14 inches in diameter, and the laterals fairly strong about 18 inches apart on each side. The burning must be peculiar to the variety, as in the same house I have a fine Vine of Gros Guillaume in the north-east corner with foliage always good. It was not due to forcing, as these Vines were gently started on March 1st, and have only this last fortnight begun colouring. I have at least a dozen good rods of Gros Colman grafted on Muscat of Alexandria last year, which have a bunch or two of Grapes, and these are all that can be desired in colour. I measured a rod of a graft two years old, and find it over 3 inches in circumference with leaves 15 inches across the graft, carrying three bunches, and the stock Muscat of Alexandria four bunches, as it was grafted 4 feet up the stem. I have grown the Muscats on the cool system. Another year I shall try Gros Colman or Black Hamburg, as I am sure grafting Gros Colman is a step in the right direction. I remember a house of Lady Downe's at Garston in Meredith's time, which faced the north, and the Vines doing capitally, and I believe this would be the right treatment for Gros Colman if started early. Having the management of these houses in my own hands I have no one to blame, so I am enabled to speak with authority when I say it is not the fault of ventilation. I ought, however, to say that the wind being strong from the north-east we had to be careful in opening on that side. On the Friday, Saturday, and Sunday named the air was full of black midges like thrips; Dahlias, &c., outside were smothered with red spider. This must be a good year for red spider, for the supply of water being generally short with other favourable circumstances, gave the enemy a good chance. I see now my Gros Colmans are inclined to have a few on the leaves, and as the Grapes are colouring I cannot syringe.

We have a lean-to house facing east planted with Muscats. The wires are only 12 inches from the glass, and the foliage is a little affected, but the fruit is swelling freely. In this case I believe also they were perhaps rather dry at the roots, the border being shallow. I am more than ever of the opinion that the farther the foliage is from the glass the

better. I have another lean-to Muscat house facing south, the wires 15 inches from the glass, and the Vines are in perfect condition; position may have something to do with this, but the distance of the wires from the glass is also important. I inarched Madresfield Court on Gros Colman last summer and have one bunch of Grapes. I did this to see if it would crack. This bunch is finished and in good condition. I shall graft Gros Colman on Gros Guillaume next year. This should do well.—STEPHEN CASTLE, *West Lynn*.

EPILOBIUM OBCORDATUM.

As a rule Epilobiums are far from being popular, though for what reason I do not know, the majority being really desirable plants, and that



Fig. 40.—*Epilobium obcordatum*.

should be in all mixed borders. *E. angustifolium* and its var. *alba* cannot be surpassed for marshy ground. When planted in bold masses they have the advantage of being able to take care of themselves better than most plants in a similar situation, and during the flowering season are very attractive. This species has also been very effectively used on the margins of lakes and streams. *E. hirsutum*, though not so showy, may be advantageously used in the same way; it is, however, a coarser grower, and should be placed in the background. Then there are *E. montanum*, *E. roseum*, and *E. palustre*, all excellent border plants. The chief thing to be guarded against with Epilobiums is their seeding in the border, but this is easily remedied by cutting the tops before the seeds ripen.

The dwarfier-growing sorts are essentially rockwork plants, and especially *E. obcordatum*, shown in fig. 40. It is a native of the Rocky Mountains, where it is found at over 1000 feet above sea level. It is perfectly hardy in our gardens, standing any amount of drought, and the present season has been the best for this plant we have seen since its introduction, flowering as it has done incessantly from June until September. Dry sunny slopes are the places to be chosen on which to plant it, and as it has a trailing or procumbent habit it soon covers the place allotted to it. The flowers vary from three to five on each stem, over an inch in diameter, and of a lovely dark rose colour. It is easily injured by damp during the winter season, and should be protected by a "cloche" or

piece of glass raised above the plant, so as to allow free access of air. A difficulty is often experienced in propagating it, but in heat it strikes readily at this season, when the cuttings have been thoroughly ripened. Others suitable for rockery, and which are also very desirable, are *E. rosmarinifolium*, *E. sericeum*, *E. Fleischeri*, *E. alpinum*, and *E. glabellum*, the latter being a fine plant for edging, having pretty marbled foliage.—M. S.

[The woodcut represents a strong plant, but the shoots are usually more procumbent than is shown in the figure.]

BEDELL'S TELEGRAPH CUCUMBER.

In the "Notes on Vegetables," page 205, your correspondent speaks very highly of Cardiff Castle Cucumber, and as I have two hotels to supply with this vegetable, also a private establishment, I wish to say a few words in praise of Bedell's Telegraph. This and the old Telegraph I have grown side by side for three years, so I think I have given it a fair trial both in houses and frames, and when a garden is worked on the market system the greatest care is needed in getting those varieties which will pay for the trouble and give employers satisfaction. This Cucumber only needs a fair trial to become a general favourite.—W.

[Accompanying this note were two fine even fruits of the variety named, which appeared to well justify our correspondent's commendation. They are much like the Telegraph, except, perhaps, the fruits are rather stouter with more bloom than is usually seen on this variety. Nearly every market gardener has a selection of his own that he has proved reliable, but some of the largest growers are now depending almost exclusively upon Cardiff Castle.]

THE LATE DROUGHT.

THE weather during the past few months has proved a great drawback to gardeners where a plentiful supply of water was not at command. Although the hoe and rake have had an easy time, the plumbers will most likely find plenty of work next winter in repairing watercans, water-barrows, &c. During the present season, in many cases crops have suffered severely through an insufficient supply of water, which perhaps, if obtainable, had to be carted a long distance, so that it would be impossible to give all crops requiring it a sufficient supply. Every lady and gentleman possessing a garden, and especially those who are making, or are intending to make, new gardens, would do well to consider the present season in this respect. Money spent in the construction of tanks, laying in pipes, and having taps at intervals throughout the garden, would be well invested. In all cases it would not be possible to do as I have suggested, but in laying out new gardens this should rank among the first considerations in its construction. In the case of a short supply of water much could be done in retaining the moisture in the soil by giving a mulching of lawn mowings or manure (the latter cannot always be spared for that purpose), to such crops as Peas, Scarlet Runners, French Beans, Cauliflowers, &c., and then to give a thorough soaking of water; they will not suffer for some time. Some object to lawn mowings for mulching, as they say the seed of the grass is brought into the garden and cause a trouble afterwards, but where a lawn is kept in proper condition there will be no fear in this respect, but I would recommend litter from the stables, if it could be obtained, as a mulching.

Now I come to another most important point to be observed as regards the water supply, and that is the rainfall. In places that I have visited, and others in which I have acted as gardener, I have noticed that provision has not been made to economise the water that falls on the roofs of the houses. I have frequently seen water running into drains from the glass structures that would possibly have given a supply of soft water through a season like the present, and, moreover, prove more beneficial to plants and vegetables watered with it. I have pointed out this to gentlemen under whom I have served, and have asked to have good tanks built for the reception of soft water, but the expenses of the same appear to be the great drawback; at the same time, if this is studied, the proprietor would be the gainer in the long run. If tanks were built and cased with cement, and a pump attached to each, sufficient water would be obtained through the winter months to meet the supply required for a long time.

Where tanks are constructed in the garden it is advisable that these should be filled every evening (and this would not be a difficult task where a tap is attached), as the action of the air would greatly soften the water and bring it to nearly the same temperature as that of the ground.—ROBT. D. LONG.

LILIUM CANDIDUM.

ANY bulbs of this useful Lily required for potting should be seen to at once, as there is no better time for doing this than immediately after the flower stems show signs of decay. The roots have, however, had so little to encourage them that they are much later than usual in starting into growth, which is only now commencing. It is now well recognised by many that this is the best time for potting. Three bulbs according to their size may be placed in 6 or 7-inch pots, using a compost of fairly rich loam. These pots will be sufficiently large the first season, after which the plants may be shifted into larger pots as they may seem to require. If potted at once the majority of the young roots may be secured, and as these fill the pots they may be introduced into the greenhouse, and from

this to a warmer structure if early blooms are required. It is not easy to over-estimate the value of this, one of the most useful of all Lilies, and which is one of the oldest inhabitants of the herbaceous border.—J.

INSECTS AND CANKER ON FRUIT TREES.

Your correspondent Mr. Hiam must indeed be satisfied with the experiments he has made to decide so clearly, in his own opinion, that insects, and insects alone, are the cause of canker in fruit trees. I have had for some years to battle with canker on gravelly subsoil, and having succeeded in bringing the trees, both Apples and Pears, into sound and healthy condition, I must express a slightly different opinion from Mr. Hiam, as both treatments appear to have resulted the same.

I am of opinion that, like many other instances of insect attack on plants and trees, they suffer chiefly in consequence of debility through deficient root-action. Our trees, now shining with health and burdened with fruit, have had no attention paid to the wood, with the exception of very careful pruning. What has been done is to carefully transplant each, having them removed from the home kitchen garden outside the walls, although well sheltered. Holes were made about 5 feet in diameter and 10 to 12 inches deep, and in planting great pains was taken to preserve uninjured every root, pruning the ends with a very sharp knife, and every rather strong root was notched at some 6 inches or so. Too much importance cannot be attached to using a very well sharpened knife, for the ends of these roots produce an abundance of new and healthy roots the first season. It is my rule to have two or three good knives at hand and kept sharpened in turn as needed by most reliable hands, as only such are to be trusted with the work. Soil is the next important matter. A couple of barrowloads of turfy sods are placed grass side downwards quite level, next a barrowful of well-decayed manure, then one of loose compost. The tree is then firmly seated, and this latter point of firmness is of the utmost importance, stretching out every root which is sound. In planting we use old Cucumber or Melon beds, and the roots speedily take hold of this; then fill in with the best of that thrown out, fresh soil, bones, manure, lime rubbish, or what may be at disposal, not treading too firmly. We then put on a good covering of half-decayed manure, or, better still, spent hark, and stake securely from three points. Nothing further is needed, except an annual dressing with manure or other good compost over the roots. Marl is very good in helping to make a firm surface, which is never disturbed. Planting is done in October.

I may here give a hint upon an old practice of great value to fruit trees, or almost any trees—namely, that of giving liquid manure during winter. Nothing, we find, assists more than this, and we are preparing to extend the practice. Perhaps our good friend Mr. "Thinker" is busy with some scheme of this kind, but I am sorry to notice we have had none of his humorous and instructive paragraphs of late.—LATHYRUS.

HYDRANGEAS.

It would be difficult to name any hardy flowering shrubs more suitable for growing in pots for the many forms of decoration for which flowering plants are required than these plants. They are comparatively easy to grow, and amateurs with a frame or a few handlights and a greenhouse may grow them to the same excellence as the professional gardener with more glass structures and greater accommodation. The latter, by a judicious system of treatment and forcing, can produce them in succession over a period of several months, but with the former this can only be accomplished in a very small degree, and the amateur can succeed in bringing two or three batches into flower at different times so as to form a succession.

In order to grow these plants well in small pots it is necessary to have a few good plants of two or three varieties placed out in fertile garden soil in an open sunny position. This is the best system for the amateur, while those who want to force the plants into flower early in the season should keep a few stock plants in pots. Those should have the protection of a cold frame until the weather is sufficiently genial to turn them outside without injury to the foliage made; in fact, prior to turning them out they must be carefully hardened so that they are not checked in their growth. Those grown in pots will yield cuttings in suitable condition for striking before those are sufficiently ripe on plants growing outside, which can be rooted a few weeks later, and thus form capital successions to those taken from plants in pots.

Cuttings from plants that have been grown in pots should be taken without farther delay, for growth has ceased and flower buds are formed. If left too long the shoots become woody and too hard to strike freely, in fact they are a long time striking in that condition, and many may fail to form roots; but when taken as soon as growth ceases and the formation of the flower buds has commenced, the wood is moderately soft and will root quickly and freely. The cuttings should be 2 or 3 inches in length, and cut clean below a pair of leaves with a sharp knife. The two lower leaves need not be removed, but inserted with the cutting into the soil. The cuttings strike root equally as well without the leaves as when retained, but they assist in the development of the flower bud already formed. They should be inserted into 2-inch pots in a compost of good loam and a little sand; a little of the latter should be used for the base of the cuttings to rest upon. After insertion a good watering should be given, and the cuttings placed under handlights where a temperature of 60° to 70° is maintained. The handlights should be made air-tight and kept perfectly close and shaded from the sun until the cuttings are rooted.

It is possible to root the cuttings by this method without exciting them into fresh growth. I have tried various ways of rooting them without pushing them into growth, and the system devised has answered as well as any. If the plants are left in heat after they are rooted they frequently start into growth, but this must be avoided by gradually hardening them to the conditions of a cold frame. If this is carefully done, and the young plants are given cool treatment as early as possible after they are rooted, they will not fail to perfect and ripen their buds and stems.

The amateur who only possesses handlights and cold frames in addition to his small greenhouse may also root the cuttings very well, which will this season be ready for insertion from outside plants.

The warm dry weather which has prevailed has brought the growth forward very quickly, but it has been found necessary on several occasions to thoroughly water the plants intended to supply cuttings. The cuttings from these will root freely enough under a handlight in the greenhouse if kept perfectly close and treated the same as advised for those placed in a heated structure. They will also root in a cold frame that can be kept close, but better in a handlight where air can be excluded from them.

The young plants when rooted should be grown in a cool place until the approach of frost, when they can be placed in a frame where frost can be excluded. Our earliest plants usually occupy a position in ainery at rest until the commencement of the year, the later plants being kept in cold frames, and protected with mats if occasion requires. These plants are hardy enough and will bear frost, but it does them no good, and therefore should be avoided, for it frequently ends in the destruction of their foliage, which we endeavour to preserve.

Another, and a very reliable system of preparation for early forcing, is accomplished by striking a good number of cuttings in spring. The cuttings are perfectly soft, and thinned out from the plants in cold frames after they have made sufficient growth for the purpose, that are intended to supply cuttings in late summer. These are rooted in brisk heat, either in the propagating frame or under handlights in the Cucumber and Melon houses. Each cutting is inserted singly in a small pot, and directly they are rooted they are gradually hardened and placed in cold frames, giving them abundance of air until the weather is sufficiently genial for turning them outside. When the small pots are well crammed with roots, which is generally the case by the time the plants are placed outside, they are transferred into others 4 inches in diameter. The soil, which consists of good fibry loam, sand, and one-seventh of decayed manure, is pressed as firmly as possible into the pots to insure a dwarf sturdy growth.

After potting, the plants are arranged in an open sunny position. Sometimes they are plunged to save labour in watering, but when this is done care is taken not to allow them to root outside their pots. The plants remain in this position until autumn, when they are placed under cover and treated the same as those rooted at this season of the year. These are only potted once during the season, and the result is plants with large foliage and stout thick stems not more than 6 inches high by the time they are housed. Plants prepared by this method are certain to produce early in the season enormous heads of their beautiful flowers.

Their after treatment will be referred to in another article.—B.

THE GRAND DUKE PLUM.

At the Royal Horticultural Society on the 8th instant, a seedling Plum was exhibited by Mr. Laxton, and with it for "comparison," as stated on the card, some specimens of a small Plum labelled "Grand Duke." If this was the correct name, the specimens were mis-shapen, undersized, and prematurely ripened if from out of doors. As I am responsible for the introduction of the "Grand Duke," which was raised here some years since from the Autumn Compôte, and I have stated that it ripens in October and is very large, those who saw and believed the Plum exhibited on this occasion to be true would have just cause to feel aggrieved if they had purchased the sort on my representation. Amongst the number who visited the Show there were many whose good opinion I value extremely, and I should be sorry indeed if the fruit exhibited would cause them to think that I had attached an untrue description to the Grand Duke. For your satisfaction I send you some fruit of the Plum as it is grown here, which I hope will reach you in good condition, that you may be able to judge of its character.

If the precedent set on this occasion by Mr. Laxton be allowed, horticultural exhibitions would present a lively scene, as contending exhibitors would not choose the best productions of their rivals as "foils" or "comparisons" to their own exhibits.—T. FRANCIS RIVERS, *Sawbridge-worth, Herts.*

[We have received specimens of Grand Duke from Mr. Rivers, some from trees in the open ground, which are of course quite unripe, as the sort is not in season till October, and others from trees in an orchard house. The latter are large handsome Plums, and of excellent quality.]

ROYAL CALEDONIAN SOCIETY'S SHOW.

THE autumn Show of the above Society was held in the Waverley Market, Edinburgh, on the 9th and 10th inst., under the most auspicious circumstances. The weather was good, the number of exhibitors was large, and the attendance of the public most satisfactory. There were about 1500 entries, vegetables being perhaps most largely represented, and plants the worst. Fruit was a large show, of Grapes alone about 400 bunches being set up. Apples were also staged in very large numbers, but flowers were hardly up to the average. For the first time bees and their products formed an attractive and appropriate addition to the Exhibition.

FRUIT.—For the collection of twelve sorts, the prizes being £6, £4, and

£2, three exhibitors staged, and of these Mr. Murray, gardener to the Marquis of Ailsa, Culzean Castle, Ayrshire, was successful in obtaining the first place with a Cayenne and Prince Albert Pine Apple, Black Hamburg and splendid Muscat of Alexandria Grapes, good Noblesse and Stirling Castle Peaches, Elruge and Pitmaston Orange Nectarines, Brown Turkey Figs, a brace of Melons, fine Worcester Pearmain Apples, and Kirke's Plums. Mr. Morrison, gardener to Miss Nisbet Hamilton, Archerfield, Drem, second with good Pine Apples, four kinds of Grapes, Muscat of Alexandria, good Gros Colman, Gros Guillaume, and Trebbiano, fine Castle Kennedy Figs, &c. Mr. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, Guisborough, third. The Grapes in this collection were the weak point, other fruit being generally fine. Three collections were set up for the prizes offered for a collection of eight sorts of fruit. Mr. McIndoe was first here with good Gros Colman and fair Black Hamburg Grapes, a Melon, Princess of Wales Peach, Durondeau Pears, &c. Mr. McKelvie, gardener to the Dowager Duchess of Roxburgh, Broxmouth Park, second, good Muscat of Alexandria and Noblesse Peaches being the most notable examples in this collection.

Prizes of £6, £4, and £2 were offered by the Corporation of Edinburgh for twelve bunches of Grapes, six to be black and six white. Mr. Hammond, gardener to Sir Wilfrid Lawson, Bart., Brayton, Carlisle; Mr. McKelvie, Mr. Murray, and McIndoe entered the list for three prizes, the first three being successful and taking the prizes in the order named. Mr. Hammond's bunches were not large, but very well finished. The sorts were three bunches each of Gros Maroc, very fine; grand Alicante, finely finished Raisin de Calabre, and Muscat of Alexandria, which would have been extra fine a month previous, but as staged a little too old. Mr. McKelvie's were less equal, some of the bunches being much smaller than others. Alnwick Seedling was grand, so also Muscat of Alexandria, Alicante fine, Raisin de Calabre good, and fine Gros Colman, Gros Guillaume, and Buckland Sweetwater. Mr. Murray's fruits ran these rather close, his Golden Queen being wonderfully fine, as also Alnwick Seedling; Mrs. Pince fine, though showing its general lack of colour, very good Muscat of Alexandria, and Foster's Seedling. Mr. Hammond was again first with eight bunches of Grapes with good Golden Queen, Gros Maroc, Alicante, and Raisin de Calabre. Mr. Jenkins, gardener to Brodie Cochrane, Esq., Aldin Grange, Durham, second. Alnwick Seedling and Alicante were fine in this lot. Mr. McKinnon, gardener to the Viscount Melville, Melville Castle, Lasswade, third. For four bunches there were twelve entries. Mr. Boyd, gardener to Mr. Forbes, Callander Park, Falkirk, leading with very good Lady Downe's, fine Muscat Hamburg, Black Alicante, and Black Hamburg. Mr. Hammond second, Golden Queen, Gros Maroc, and Alicante being fine. Mr. McKelvie third. Mr. Kirk, gardener to Mr. Palin, Norwood Park, Alloa, staged examples of the following, the berries being of extraordinary size:—Gros Colman, Duke of Buccleuch, Cooper's Black, and Madresfield Court. Mr. Boyd was first for two finely finished medium-sized bunches of Black Hamburg. Mr. Smith, Speddock, Dumfries, second, and Mr. Day, Gartleston, for two bunches Muscat of Alexandria was first with really fine examples. Mr. McKelvie staged two fine clusters for the second place. For one bunch of the above Mr. J. King, Middleton House, was first, and Mr. Boyd second. Mr. Murray, Polmont, was first for one Black Hamburg, Mr. McKinnon being second. Messrs. Hammond and Boyd took prizes for the Alicante, both with grand examples. Mr. J. Cocker, gardener to Mr. Ure, Bonnybridge, had the best example of Alnwick Seedling, Mr. Boyd being second. Mr. W. Murray, Polmont, had first place for Gros Colman and Lady Downe's, Mr. McIndoe being second with the former and Mr. Boyd with the latter, the Lady Downe's being specially fine. Mr. Boyd, with Waltham Cross, took the prize for any white Grape other than those named. Duchess of Buccleuch was the finest flavoured white; Mr. Machattie, gardener to the Marquis of Lothian, Newbottle, being first, and Mr. McIndoe second. Mr. J. King had the finest bloomed bunch, and for two pot Vines Mr. J. Lamont was first.

Pine Apples were not numerous, but good. Mr. Morris had honours for two, staging good Smooth Cayenne; Mr. McIntyre, gardener to Sir C. Teunant, Bart., M.P., The Glen, Innerleithen, second; Mr. Boyd had the best Queen, and Mr. McIndoe the best Smooth Cayenne. Mr. Henderson, Parkhill, Polmont, had first, and Mr. Niel Black, Darlington, second, for a bunch of fine Bananas. To Mr. Hammond the award went for the best green-flesh Melon, Mr. McKelvie having the best scarlet-flesh variety. Mr. Hammond with good Barrington took first for twelve Peaches, Mr. Low Viewforth House, Stirling, being second. Mr. Brown with Pitmaston Orange Nectarine was first, and Mr. D. Murray second.

For a collection of six sorts Pears, Mr. Hunter, gardener to Earl of Durham, Lambton Castle, Durham, was first with grand examples of Bellissime d'Hiver, Bon Chrétien, Beurré de l'Assomption, Beurré d'Amanlis, Souvenir du Congrès. The same exhibitor also took first for six Pears with Grogoire Bourdillon. Apples were quite a show in themselves, all the classes being well filled and keenly contested, the orchard house fruit from Hutton Hall and Lambton, however, handicapping rather heavily those who could only stage out-of-door fruit. Mr. Hunter had first for twelve sorts, staging fine examples of Flower of Kent, Ribston Pippin, Lord Suffield, Worcester Pearmain, Ecklinville, Peasgood's Nonesuch, Cox's Pomona, and Cellini. Mr. McIndoe second, and also first for six sorts kitchen. Gascoigne Seedling, Washington, and Dutch Codlin were very finely shown. Mr. Brotherston, gardener to Earl of Haddington, Tynninghame, was second. Warner's King, Kentish Fillbasket, and Mère de Ménage being the best. Mr. Hunter had first for two sorts dessert Apples with Jefferson and Worcester Pearmain, Mr. Murray second with the latter and Early Julien. Of single dishes the finest were Ecklinville Seedling, from Mr. Duncan, Haddington; Lord Suffield, from Mr. Blackie, Leith; Peasgood's Nonesuch and Lord Derby from Mr. McIndoe; Warner's King from Mr. Brotherston. An exhibitor who staged Old English Codlin received the first prize for Keswick Codlin.

For a collection of ten sorts of hardy fruits Mr. Fairgrieve, gardener to the Dowager Duchess of Athol, Dunkeld, was easily first, Shipley Apicots being really grand. Peaches and Nectarines were also fine, as also Plums. Mr. McIndoe second, and Mr. Dow, gardener to Sir D. Baird, Bart., Newbyth, third.

Among the plant classes the best prizes were offered for a table arranged for effect. Messrs. Ireland & Thomson were easily first among nurserymen,

their arrangement being a thick groundwork of various Ferns, among which a few graceful Palms, Crotons, Pitcher Plants, and Tuberous Begonias were dotted, the edging being a drooping line of *Ficus repens*, with a few *Isolepis gracilis* and variegated *Panicum*, backed with a line of Maidenhair and graceful Crotons. Messrs. R. B. Laird & Sons were second. In the gardeners' class, Mr. Grossart, gardener to Mr. Buchanan, Oswald Road, was easily first, though we have seen much better tables set up at former shows by the same gentleman. Mr. R. Cockburn was second. Pot plants were generally inferior, though, as a rule, the winning collections were good. Mr. Patterson, Millbank, had the best six stove and greenhouse flowering plants, staging *Ixoras* *Pilgrimi* and *Williamsi*, *Ericas* *Marnockiana*, *Irbyana*, and *Turnbulli*, and *Statice profnsa*. With a good Heath Mr. Patterson also took first for the best single greenhouse plant, also first for three Cape Heaths. Mr. Scott, gardener to Lord Elphinstone, Carberry Towers, was first with a *Dasyllion*, *Phormium*, *Asparagus plumosus*, and *Yucca aloifolia*; Mr. Grossart being a close second. Of Orchids, Mr. Grossart was the only exhibitor of four and one, the best plant being a fine *Laelia elegans*. Ferns were numerous shown, *Adiantums* themselves being a good show, and although the specimens were not large they were very fresh. Of the latter, Mr. Grossart staged a fine example of *A. Flemingi* in his winning four. Mr. Kerr, Sunlaws, Kelso, and Mr. J. Canning had respectively first and second prizes for three Tuberous Begonias, each with well-grown little plants. Some good Geraniums were set up, Mr. D. Plenderleith having the best.

Of cut flowers, those which attracted most attention were the Roses, Messrs. Cocker & Son, Aberdeen, taking first prizes for thirty-six and eighteen blooms with very fine fresh buds; Mr. H. Dickson, Belfast, being second for thirty-six, and Mr. Smith, Stranraer, for eighteen. Messrs. Ireland & Thomson and R. B. Laird & Sons set up fine collections of stove and greenhouse plants, the prizes going in the order of the names. Mr. Campbell, The Cove Gardens, Gourrock, was the only exhibitor who staged presentable *Gladioli*, and these were not up to this exhibitor's usual style. Messrs. R. B. Laird & Sons, Messrs. J. Lamont & Son, and Mr. D. Pearson, Beechwood, were the chief winners for the various kinds of Dahlias; Mr. Kerr of Sunlaws and Mr. G. Dingwall, Braes House, Perth, showing fine *Hollyhocks*. Mr. A. Gray, Dunkeld, took the chief prize among the amateurs with some beautiful Rose buds; and Mr. G. McClure and Mr. J. Wynter, Linlithgow, had the best bouquets. Messrs. Dickson & Co. showed fine collections of Carnations, Picotees, French and African Marigolds, and Verbenas; Mr. R. Munro, Portobello, herbaceous blooms; Mr. Sutherland, Lenzie, extra fine Pansies, and Carnations and Picotees; Mr. Forbes, Hawick, *Hollyhocks* and other florist flowers; and Mr. T. S. Ware, fine collection of bouquet, single and Cactus Dahlias.

The vegetables were a very large show. Mr. J. Murie, Craigmillar Gardens, and Mr. Logan, Castlelaw, Coldstream, getting the first and second prizes for a collection of twelve sorts grown by market gardeners. The first prize in gardeners' class went to Mr. Wm. Low, gardener to Mr. Paton, Viewforth House, Stirling, who had a grand lot. In this collection were grand white Celery, Cranston's Excelsior Onions, Musselburgh Leeks, Veitch's Autumn Giant Cauliflowers, Stratagem Peas, Mammoth Negro Beans, James' Intermediate Carrot, &c. Mr. Potter, gardener to J. W. Laidley, Esq., Seacliffe, North Berwick, second with a good lot. Of the single dishes, the most prominent for good culture were Leeks from Mr. Broom, Abercainey, and Mr. N. Glass, Carbrook; Celery from Mr. Cairns, gardener to the Earl of Home, The Hirsell, Coldstream; extra fine Onions from Mr. Murray, Cnlzean; and Tomatoes from Mr. Scott, Carberry Tower, and Mr. McIndoe, the latter, though only second, to all appearance being the better sample. For twelve sorts Potatoes, Mr. O. Bigham, gardener to W. O. Rutherford, Esq., Edgerton, Jedburgh, was first with a clean fine lot, *Cosmopolitan*, *Reading Russet*, and *Ashtop Fluke* being the best. For six sorts, Mr. McPherson, Elgin, was first, *Village Blacksmith* being the most notable sort in this lot. Mr. Deverill, Corn Hill, Banbury, exhibited a collection of twenty-seven sorts of Onions, which contained notable specimens of *Rousham Park Hero*, *Anglo-Spanish*, *Main Crop*, *The Wroxtton*, &c. Some fine Runner Beans, *Ne Plus Ultra*, were also exhibited by the same gentleman.

Among miscellaneous exhibitions a table of curious plants was shown by Mr. Lindsay from the Botanic Gardens; Messrs. Methven & Sons set up a table of decorative plants; Mr. Inglis, Kelso, collections of Dutch bulbs.

It may be added that the financial result was in every way a success, the number of visitors who went through the Show being above the average.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE APRICOT.

THOSE English fruit and forest trees which are the earliest to open their leaf or flower buds, are by no means the gainers in many seasons for having thus taken the lead when Nature is rousing from the gloom and inaction of winter. Such trees are liable to suffer from the ungenial weather of the average English spring; they are sure to be more or less infested by the first feeders of the caterpillar race, whether these may be insects that have awakened after the period of hibernation, or be broods newly hatched from the egg. Hence it is that the Apricot, budding out as it does ere winter has finally departed, attracts and serves to feed hosts of small caterpillars, whose habits enable them oftentimes to work damage and spoil the trees for one season before the gardener is aware they are about; under glass, however, there is less to apprehend from them. The Peach and Nectarine are also infested, but perhaps less so than the Apricot. The red bud caterpillar, common on the Apple, Pear, and Plum, is quite as partial to the Apricot, attacking either the blossoms or the leaf buds, preferring the former it would seem, and some young trees have the greater part of the buds destroyed by this

tiny caterpillar, which cannot be washed or syringed out of its snug retreat. Kollar recommends a patient examination of the Apricots when the buds are swelling, and should it be noticed that the edge of the calyx is slightly sticky, this caterpillar may be suspected, and if present lifted out without injuring the fruit by using the point of a penknife. The perfect insect of this *Spilonota ocellana*, a species which, unfortunately, like others in its tribe, has a somewhat confusing number of Latin names, lays eggs singly towards the end of summer. It is a narrow-winged moth of a grey colour, having a whitish band dotted with grey. As its appellation implies, the caterpillar is fleshy red, a solitary dark line running from the head, which is black, to the tail. When full fed it spins a white cocoon upon some twig.

Allied to this species is another I have observed on the buds of the Apricot, and which has been reported as occurring in several places. The young caterpillars are dark, almost black, when older of a dull white tinted with purple; the head is black, and there are numerous black spots on the body, some scattered irregularly, some arranged in pairs. My specimens failed to appear as moths, hence their identification cannot be a positive one, but this insect is probably the species called the brown cloak (*Spilonota aquana*) from a conspicuous band of brown upon the fore wings; it is known also as an occasional enemy to the flowers of the Rose. Then the stouter, though also small, caterpillar of *Ditula angustiorana*, which is of varying shades of green, feeds sometimes upon the buds of the Peach and the Apricot, concealing itself dexterously, until it becomes almost of full size. And there cannot be a doubt that the winter moth (*Cheimatobia brumata*) will visit the Apricot when this is cultivated near other fruit trees, or if Hawthorn hedges happen to be adjacent. As the females cannot fly, after they have emerged from the chrysalis they crawl up the stems of such trees as they can reach, which instinct tells them will afford suitable food for their progeny, and lay patches of green eggs, from which caterpillars hatch early. At first, while they distribute themselves over the budding branches, they are hardly to be seen, being no thicker than a horsehair and transparent, nor do they eat much, and they may then be readily washed off the branches. When the weather becomes warmer the caterpillars, should they have been unmolested, devour the edges of buds and blossoms, securing themselves by silken threads. A not uncommon British moth, called *Hybernia rupicaprararia*, is said to attack the Apricot in spring; this is, however, as I believe, a very rare occurrence. The purplish-brown yellow-spotted caterpillar of the beautiful moth styled the large thorn (*Ennomos alniaria*), which feeds commonly upon fruit trees in France, the Apricot included, has not been noticed on this side the Channel. That promiscuous feeder, the caterpillar of the vapourer moth (*Orgyia antiqua*), an object familiar to the gardener, with its pink spots and black pencils of hair, visits the Apricot, but as only stragglers are to be seen, and at a time when the tree is in full leaf, it is not a species to be regarded as harmful. And an eccentric caterpillar of that large moth, the eyed hawk (*Smerinthus ocellatus*) in the course of his wanderings may tarry upon a wall covered with Apricots and Peaches in August, but he is likely to fall a victim to some hungry bird disregarding of his elegant markings.

The Apricot weevil (*Otiorhynchus tenebrius*) though popularly named from the fruit tree now under consideration, and to which it is a special pest, does also occur on other trees, chiefly those upon walls, standards being seldom troubled by its visits. Vines in houses have sometimes been badly injured owing to the insects barking the branches. It is the habit of this beetle to hide through the day, either just below the surface or in those cracks and crannies which are found on most walls, hence while the mischief done by it is often noticed the transgressor may escape scotfree. When a wall is properly attended to, and all holes, large or small, effectually filled up, a lurking place for this foe is disposed of, and it can then only descend to the soil at the base. Thousands have been killed by the application of the petroleum solution to their haunts, and strong tobacco water or the decoction of quassia have been stated to kill them. A layer of salt upon the soil will also end the career of any that may be beneath, and the removal of a few inches of earth round fruit trees about October would carry away both the beetles and their eggs. Many gardeners are accustomed to hunt for the Apricot weevil at night, sheets being laid under the trees beforehand, and then by the aid of a bright lantern the boughs are judiciously shaken and the contents of the sheet thrown into boiling water. Not only this species, but a variety of insects will thus be captured; some, however, are sure to escape. It is rather larger than the abundant grooved or black weevil (*O. picipes*), and at its emergence from the chrysalis has downy spots upon the wing cases; these, however, soon lose their down and appear of a uniform glossy black, the legs are light brown, and it is unable to fly,

fortunately. The larva or maggot from which this weevil is developed is an obese, legless, greyish white creature, clothed with short hairs; it feeds at the roots of the trees to which the mature insect resorts, but also occurs elsewhere, as at the roots of Currants and Strawberries, or even amongst succulent vegetables.

That annoying little beetle, the stem borer (*Rhyncites Ollariæ*), so partial to the shoots of young fruit trees, does not exempt the Apricot from its attack. Its steely-blue tint renders it more visible than if it were of a dull colour, and many of these may be picked off the shoots by examining them in the spring. A cut is made in the side of a twig near its tip by the female beetle, and in the piece so detached which drops off an egg is deposited. Thus she proceeds from twig to twig until all her eggs are deposited. The copper weevil (*R. cupreus*) which visits the Apricot at times, though more frequent upon the Plum, pursues a similar plan to its relative, only it makes choice of the immature fruit, biting through the skin so as to raise a tiny flap. Under this an egg is placed and the pulp closes up, but the fruit is spoiled.

Peaches, Apricots, and Nectarines while the fruit is ripening are sure to attract earwigs. These insects have also been seen devouring the blossoms of the Peach in spring. They must be trapped should there be a suspicion that they are numerous (for they hide during the day) by placing amongst the trees the smallest flower pots, into which a little dry moss is put or small tubes hollowed out of the Elder branches, which will secure many of them. And the slender-bodied electric centipede (*Arthronomalis longicornis*) creeps up at night to conceal itself in the fruit, not to be detected until it has been sent to table.—ENTOMOLOGIST.



THE VIOLENT STORM OF WIND AND RAIN last week caused considerable damage to the fruit crops in many districts, but especially in Kent, where also the Hops have suffered severely. In the neighbourhood of London, particularly in the west beyond Chiswick, where there are numerous orchards of Apples and Pears, the fruits have nearly all been blown from the trees, and the ground on Saturday was thickly strewn with more or less injured fruits. In some districts ornamental trees have suffered greatly, and glass houses have not escaped damage in the more exposed positions. The rainfall was very heavy, and some correspondents record as much as 1 inch in the twenty-four hours from Friday noon to the same time on Saturday.

SOME alteration was made in the awards for FOSTER'S SEEDLING GRAPES at the recent Show at South Kensington, after our notes were taken, and the prizes were ultimately adjudged as follows:—Equal first prizes to Mr. G. T. Miles, Wycombe Abbey Gardens, and to Mr. Allan, Gunton Park Gardens; Mr. J. Horsefield, gardener to Lord Heytesbury, Heytesbury, Wilts, was second, and Mr. T. Taylor, gardener to J. McIntosh, Esq., Weybridge, third.

MESSRS. BARR & SON, King Street, Covent Garden, sent us a handsome specimen of *LILIUM AURATUM PLATYPHYLLUM*, with fifteen large flowers and buds near the upper part of the stem. This variety is a very beautiful one, with well-formed flowers, the petals broad and rounded; the leaves also are very broad, and the general habit is extremely vigorous.

"AN Entomologist" observes:—"Your correspondent who writes upon INSECTS AND CANCER AS AFFECTING FRUIT TREES (page 222) assumes, I suppose, that because he succeeded in working out a cure by the means indicated, therefore the mischief arose primarily from insects. To me this fact is not so apparent, though it would not be wise to pronounce either way unless one had carefully examined the branches affected. From his description I infer the insect must be a mite or *Acarus*, possibly a beetle mite of the genus *Damasus*. It is certainly the case that some of the mite tribe are designed by Nature for the destruction and removal of vegetable matter that is losing its vitality, and therefore in a state of incipient decay."

TURNER MEMORIAL PRIZES.—A meeting of the promoters

was held at South Kensington on Tuesday, the 8th inst., Shirley Hibberd, Esq., in the chair, the object being to organise the fund. Subscriptions were announced amounting to upwards of £100, and resolutions were adopted, without dissent, authorising an appeal to the horticultural public, and appointing an executive Committee. The members of the executive are: Dr. Masters, Messrs. H. Veitch, H. Glasscock, George Paul, J. James, H. Cannell, G. T. Miles, with (ex-officio) the Treasurer, H. M. Pollett, Esq., the Secretary, Mr. James Douglas, and the Chairman of the meeting.

"THERE are few hardy perennials," writes a correspondent, "capable of producing such a number of pure white double flowers for an extended period as *LYCHNIS VESPERTINA PLENA*, which though much dwarfer than usual consequently upon the long-continued drought, still produces abundantly its fragrant blossoms. Were it not so difficult to increase I am sure it would find favour among bouquetists generally, its flowers individually being of such a useful size. These are produced from late in June till arrested by autumn frosts, and in average seasons grow about 3 feet high and makes a large bush."

THOUGH much dwarfer than usual, HARDY PERENNIALS have recovered wonderfully since the recent rains, and now the garden is gay with Tritomas, with their compact columnar spikes of flowers, very effective in large clumps in isolated positions, or in company with single white Dahlias they form quite an agreeable change. Then we have Rudbeckias in variety, very telling border flowers, together with the Japan Anemones, *A. japonica*, *japonica alba*, and the very pleasing variety elegans. All are useful and much admired, though the white especially at this season is of the greatest value. We must not omit a useful group of autumn-flowering Lilliums, *L. speciosum* and its numerous forms, which in northern counties are only just beginning to expand. Michaelmas Daisies or perennial Asters are abundant, of varying shades of blue, lilac, and purple, and averaging from 1 foot to 6 feet high. These produce an amazing number of very useful flowers. Dahlias and Gladiolus are numerous, and with other plants in variety assist in making up an effective display for the middle of September.

"W. D." sends the two following notes:—"TWELVE HUNDRED MELON PLANTS have recently been planted at Harefield Grove for an early winter crop, 1000 of the plants being the new 'Harefield Grove Yellow,' having a very beautiful smooth skin of a bright yellow colour, with fruit of an average weight of from 3 lbs. to 4 lbs. This variety has a good constitution, short-jointed habit, and stout robust foliage; is a free setter, and is a great favourite in the market. The flesh is white and firm, of most delicious flavour, possessing a piquant and pleasing aroma, and eatable and highly flavoured to the skin, which is very thin indeed. It is in every respect a first-rate variety, and its excellent cropping qualities, combined with its high flavour, should make this variety popular. We hear that the stock of seed of this new variety will pass into the hands of Mr. B. S. Williams. The other varieties just planted here are High Cross Hybrid, white flesh and pale lemon-coloured skin; average weight, 4 lbs. to 5 lbs.; and Eastnor Castle, a green-fleshed variety.

"A BEAUTIFUL bedding plant is *SPERGULA PILIFERA AUREA* as seen at Harefield Grove, where the heat and drought of 1885 will ever be remembered, for that district was without rain from Whitsuntide until the early part of September, with the exception of one hour's rainfall, and ordinary bedding plants suffered severely. In some pretty carpet beds at Harefield the *Spergula* is growing freely, and is of a bright yellow colour, much brighter than the Golden Pyrethrum, and it must be regarded as a valuable acquisition to our spring and summer decorative plants. Mr. Gough has used it with *Sedum glaucum*, *Antennaria tomentosa*, *Alternanthera amabilis* and *amœna*, *Iresine Lindenii*, and other kindred plants, and regards it with so much favour that he intends using it largely another season."

A CORRESPONDENT writes:—"I find that an erroneous impression prevails as to who has the MANAGEMENT AND SUPERINTENDENCE OF THE PARKS, COMMONS, AND OPEN SPACES under the control of the Metropolitan Board of Works. I would therefore mention that all duties connected with horticulture, forestry, and management, except constables in uniform, upon commons and open spaces, not parks and gardens, devolves entirely upon Mr. Cochrane for Finsbury Park, Victoria Embankment Gardens, and all commons and open spaces north of the Thames; and upon Mr. Coppin for Southwark Park and all such places south of the Thames. The Parks, &c., Committee holds them as superintendents directly responsible, and issues instructions direct through the Clerk of the Board. The

sniveyor of open spaces attends on behalf of the superintending architect to works of a structural kind only, and the superintendent of constables attends on behalf of the Clerk of the Board."

— WE learn from "Meehan's Gardeners' Monthly" that at a recent meeting of AMERICAN FLORISTS in Cincinnati there were 400 delegates present, twenty-one being from Philadelphia and sixteen from New York, those two cities sending the largest numbers. The President, Mr. John Thorpe, delivered an address, in which he stated that 24,000,000 cut Roses were sold last year, and of Carnation flowers about 125,000,000. During the last year 200,000 dollars, or nearly £40,000, had been paid for imported bulbs, chiefly Hyacinths and Tulips. It is supposed that there are 700 persons "engaged in selling florists' supplies, and there are 2000 cut-flower sellers. Florists have increased fourfold in ten years; catalogues have increased fivefold. These make trade for those who do not catalogue. There are 2000 first-class gardeners in the United States, and thousands of amateurs without professional help."

— A PACKET of MESSRS. CASSELL'S MONTHLY WORKS is just to hand, and contains the following:—Part 79 of "Familiar Garden Flowers," with coloured plates and interesting descriptions of the common Barberry and the Hepatica; Part 2 of "Familiar Trees" gives a plate and history of the Cherry; Part 17 of "Popular Gardening" contains continuations of chapters on Rose Culture, Glass Structures, Window Gardening, Orchids, Life History of Plants, Bulbous Plants, and Ferns, freely illustrated; Part 20 of the "Encyclopædic Dictionary" continues this thoroughly useful work from Contagions to "Cost," page 512; Parts 17 of the "Book of Health," and 41 of the "Illustrated Book of Canaries and Cage Birds," being also continued in the same satisfactory style which distinguished the earlier numbers.

JUDGING GRAPES.

I HAVE frequently read the articles in this valuable paper from the pen of Mr. Iggulden, but to none do I give my full support, with the exception of the article of September 3rd, "Remarks on Judging Grapes." I most fully endorse what he there states. It appears to me that judges of black Grapes allow colour to take the precedence over all other points, while they have no regard whatever to flavour, size of berry, or difficulty in culture. I am also a successful exhibitor, and have therefore frequently heard remarks from experienced gardeners which lead me to the conclusion I have arrived at and now state. My opinion thus gathered is that all Grapes shown out of season, however good in colour, ought to be disqualified. If Alicante were judged for flavour in August they would at once be placed out of the prize list, but now they are frequently found filling first and second place from their colouring before Grapes that are well grown and well ripened, full of flavour, and appearing at their proper season.

My favourite Grape among the black varieties is Madresfield Court. I hold it to be the best Grape for July, August, and September, and I am sure it is worthy of greater encouragement than it at present enjoys. It is difficult to finish well at the footstalk, but this would be overcome were it patronised more, and did it take what I believe to be its proper place. A short time ago I was exhibiting at a large show in the midlands, and there I found Alnwick Seedling preferred to many other good black Grapes, and my surprise was increased when I saw how judges, competent to form a reliable opinion, would place Alicante and Alnwick Seedling before good, well-finished Madresfield Court, and this, too, in August, when both Alicante and Alnwick Seedling are known to be sour. It seems useless to expend much labour on the production of Madresfield Court in a high state of finish, when Alicante and Alnwick Seedling, both known to be most easily grown for colour, should supersede it on every hand. It appears to me there should be a revision of schedules, the earliest shows having a class for Black Hamburgs, also a class for any other variety in season, when, I believe, Madresfield Court would hold its own. Then a little later on, when Black Hamburg is past perfection, the first class should be for varieties then at their best, and Black Hamburg should take its place among the second class, while Alicante and Alnwick Seedling would come to the front at the later fruit shows, and deservedly receive appreciation. I feel sure that were growers to devote their attention less to the good old well-established Black Hamburg at all seasons, and more to the varieties that follow it, they will not be disappointed in the result. Madresfield Court is a splendid Grape, fine in berry, good in weight, noble in appearance, and exquisite in flavour. Why should it, then, be passed for Grapes less fine in berry, less in weight, less noble in appearance, and lacking in flavour?

I trust others may fully endorse Mr. Iggulden's and my opinion that Alicante and Alnwick Seedling ought not to appear before the judges' inspection till September has nearly past into October, and that other good varieties of Grapes ought to prevent Black Hamburg always standing in the first place during July, August, and September. I emphatically support Mr. Iggulden in his opinion that Foster's Seedling among white Grapes deserves better treatment at the judges' hands. It is certainly possessed of better flavour than either Golden Champion or Buckland Sweet-water, and yet how seldom we see it placed in an honourable position!—A YOUNG EXHIBITOR.

I AM perfectly aware, and stated as much, that it would be an impossibility for the framers of schedules to meet the wishes of all classes of exhibitors, as the funds would not permit it, even if the committees were disposed to take any proffered well-meant advice, as it happens in too many instances gardeners' advice is not solicited or accepted, and not a few of those responsible for the wording of a schedule know next to nothing about it. One secretary of an important show in this county actually prides himself in the fact that he knows no distinction between Onions and Turnips, Peaches and Plums, and in an off-handed, careless fashion, states so when the numerous complaints are brought before him. In this case it usually happens that it is not the wording of the schedule that is to blame, but the fault lays rather in the selection of incompetent judges. One rule is to the effect that "Judges have the discretionary power to cut and taste all fruits, Pine Apples excluded, also to withhold any prize or prizes where specimens are not deserving of an award," and it is further added that "all fruit must be perfectly ripe and well coloured." If the judges enforced this rule we should hear fewer complaints about unripe and inferior, if well-grown, late varieties being placed before equally well-grown examples of superior and quite ripe sorts. The former may have an advantage in point of colour or "finish," and yet be perfectly sour, therefore unripe and ought to be disqualified.

It appears, however, that "S." (page 223) thinks differently, and he would support the judges in their preference for colour rather than ripeness; but if he extends this doctrine to Grapes he cannot consistently object to unripe examples of any other kind of fruit, say of Peaches, Nectarines, Plums, and even Melons, being awarded prizes. All may be beautifully coloured, and yet quite hard and unripe, but because the show is held (to borrow somewhat of "S.") in August and September, or before these particularly fine examples of showy sorts are fit to eat, the grower is to have "no reward for them." It is quite certain he would get no reward for them if he exhibited them, and exhibitors of unripe Grapes ought also to be made to feel that it is a very unwise proceeding to cut them. How often we see the practice of exhibiting green Grapes strongly condemned, yet in many cases these are nearer ripe than such sorts as Alicante, Alnwick Seedling, Gros Colman, Lady Downe's, and Gros Maroc are when shown during August or early in September. Are they fit to send to an employer's table after the show is over? and if not ought they to be sacrificed? That is the point which I wished to convey in my original remarks, and which "S." evidently misses. If his advice is taken, and the preference is generally given to showy sorts, these will be much more extensively grown and cut for early exhibitions, with the inevitable result of disgusting employers, a result, which I, for one, should be glad to see avoided.

I have always been an admirer of the Alicante Grape, and in my time have tasted some really good examples of it, this being principally in December, when it is at its best, and during the same month I have tasted some that were perfect in every respect as far as appearance was concerned, and yet were quite sour, consequently the fact of a fine appearance is no proof of superior quality. I have before admitted that I am of opinion that extra well-grown Alicante may sometimes be placed before Madresfield Court when the latter is not shown in good condition, but when we see really good Madresfield Court placed third with two lots of only fairly good Alicante first and second the time has arrived for fault-finding. This happened at Taunton last August, and the season before Alicante was placed first in preference to Madresfield Court with this rather amusing difference; the grower, who staged Alicante in 1884 had the Madresfield Court in 1885, and was naturally aggrieved at the consistency of the judges. This man will "try his luck" with Alicante again next year, and several others will have the same variety. To make matters worse, Alicante is now becoming the favourite variety for collections of fruit in August, thus displacing the less easily coloured but good old Black Hamburg. The Chrysanthemum and fruits shows are the proper places to stage Alicante and other late sorts, and for these they may safely be cut, and either sent in to the employer's table shortly after or they may be bottled and kept.

Since writing the above I have read the remarks on judging at exhibitions by Mr. W. Williamson, page 220, and am glad to find this evidently very practical and experienced gardener is of the same opinion as myself as to the relative value of late sorts on the summer and early autumn exhibition tables. For instance, he remarks that "Grapes valuable for their late-keeping properties should be discouraged for early autumn shows, because they are seldom ripe though well coloured, and it is injudicious to try to ripen them." Unless I am much mistaken many more readers of the *Journal of Horticulture* will fully endorse this opinion, and if some of them will give expression to their ideas on the subject much good may eventually result.—W. IGGULDEN.

EXHIBITING DAHLIAS.

WHEN I read in the *Journal* of September 11th, 1884, the qualities which constitute a good Dahlia, I considered that anyone who judged at the different shows should take them as a standard, and the defects stated also were so clear that even an inexperienced person could not err therein. I have always considered the greatest faults in a show Dahlia are green and sunken centres, with high shoulder, and old blooms with open centres or the back florets fallen. If this view is right, were the Judges at Kensington correct in awarding prizes for overgrown, open-eyed, exhausted blooms in preference to equally as well grown blooms for quality without those defects, but smaller and younger? A young bloom has the general preference over an old exhausted bloom, even if not so large. The *Standard* newspaper of the 10th inst. has an article upon the Show,

and states that anything formerly which was not a monstrosity in double Dahlias was not worthy of notice, but now single flowers are coming forward and taking their place. Whatever may be the opinion of the writer in the *Standard*, the double Dahlias will, I believe, still hold their position if quality is to be considered in preference to size. Rules should be laid down like you have given in page 242, September, 1884. In size 4 inches, but from 4 to 4½ or 5 inches should not be exceeded, but with a close centre no less than one-fifth of the size of the flower, and an open eye with back fallen petals should be a disqualification. Exhibitors as well as judges would have a standard by which they could judge the merits of these flowers.—THOMAS GARRATT, *Bishops Stortford, Herts.*

HELIANTHUS MULTIFLORUS FLORE PLENO.

THIS is one of the best plants of the extensive family of Sunflowers. When planted in quantity in large mixed beds, or in shrubbery or herbaceous borders I know no plant that can surpass it in beauty at this season. It was introduced from North America in 1597, and yet it does not seem to be well known nor cultivated so extensively as it deserves. It is a hardy perennial of compact growth and of easy culture. It grows to the height of from 3 to 4 feet, and flowers profusely from the top to within a foot of the ground. The flowers are double, of a rich yellow, and when cut they stand in water for a long time in good condition. The plant is readily propagated by cuttings and division of the root, and will grow in almost any kind of soil, but like its near relative, the Jerusalem Artichoke, it succeeds better under liberal treatment.—A. PETTIGREW, *Cardiff.*

THE ST. JOHN'S NURSERIES, WORCESTER.

WORCESTER is famed for several remarkable manufactories, one of the most important of which is the wonderful Royal Porcelain Works, where so many beautiful examples of the potter's art have been and still are produced to delight the admirers of such choice wares. The preparation of a world-renowned sauce also gives employment to a large number of persons, and there are several other establishments of nearly equal note. Horticulturally, Worcester is also important, for in its immediate neighbourhood—the pretty suburb of St. John's—is one of the most extensive nurseries in the kingdom, the productions of which have rendered the title of the firm—Messrs. Richard Smith & Co.—familiar to thousands of horticulturists in Great Britain and America. The district is a very interesting and beautiful one for some miles around Worcester, and many excellent gardens well worthy of a visit are readily reached from the town—such as Madresfield Court, Hindlip Hall, Impney, Davenham Bank, Eastnor Castle, Witley Court, and others, while a short run by rail conveys the visitor to the celebrated fruit district, the Vale of Evesham. A gardener could indeed spend a very agreeable holiday in the neighbourhood of Worcester, and find much to interest him; and now that the generosity of employers renders "gardening tours" a part of the year's routine, a hint as to a suitable district may prove serviceable.

St. John's is very conveniently reached from the Shrub Hill station, Worcester, for trams now run at frequent intervals to Messrs. Smith's nursery gates—a considerable advantage, for though the distance is only two miles many persons prefer riding to walking in this degenerate age. The visitor recognises his destination by several ranges of glass houses which abut on the main road, but there is nothing to indicate the surprising character of the establishment. There is no outside display, and a stranger might pass without the slightest idea that it contained so marvellous a collection of plants, shrubs, and trees. Immediately on entering we are reminded of one of the specialties of the firm by a grand bed of Clematis Jackmanni some 20 or 30 feet in diameter, and "a mass" of its lovely purple flowers. This mode of growing Clematises has been frequently recommended, but, unfortunately, everyone does not succeed with them, and in some cases failure is due to want of attention to a simple but important matter—namely, providing a suitable soil. These plants like a rich and rather heavy soil, with a good supply of water, and the less they are disturbed after being planted the better. A trellis is raised a foot or two above the soil, and over this the growths are trained, which is an advantage in several ways, the flowers being seen better, and are less liable to be spattered with soil in stormy weather. For prominent positions on lawns these beds are very suitable, and they might be employed in many gardens with excellent results if care be given to the items named. We shall have something more to say about the general stock of Clematises presently, but in making a tour of the nurseries we first inspected the collections of

INDOOR PLANTS.

Numerous convenient span-roof houses are devoted to the miscellaneous stove and greenhouse plants, which are grown in large quantities to meet the extensive annual demand. Lapagerias, for instance, will give an idea what stocks are required: 10,000 plants of *Lapageria rosea* is an astonishing total, yet that number has been in stock at one time, though now being greatly reduced by the heavy demands; while of the beautiful companion to the species, *L. rosea alba*, there is also one of the finest stocks in the country. Of Ferns all the most useful species and varieties are grown by thousands, and the indispensable *Adiantum cuneatum* is represented by at least 20,000 plants in all stages, from sporelings to good-sized specimens. The very compact-growing *Adiantum Pacotti* is also grown in good numbers. Of the charming *A. farleyense* there is a good proportion of strong young plants; *Pterises*, *Lomarias*, *Lygodium*, and other genera being in similar force. *Bouvardias* are now such popular plants that in most nurseries they are largely grown, but at St. John's they constitute

one of the numerous specialties, and accordingly are represented in thousands of the best varieties. Those that are very largely grown are Dazzler, deep rich scarlet; longiflora *Oriflamme*, also bright red; and *jasminoides*, white. *Gardenias*, *Stephanotis*, *Ixoras*, *Caladiums*, *Crotons*, *Dracenas*, and *Aralias* occupy several houses, all the plants being robust handsome little specimens, such as cultivators like to see. Hardwooded plants and other greenhouse occupants form an enormous stock, the *Ericas* being particularly fine healthy examples of the most effective varieties, the winter and early spring flowering sorts of the *hyemalis* and *gracilis* types having much space devoted to them. *Camellias*, *Pimeleas*, *Boronias*, *Grevilleas*, *Genetyllis*, and *Azaleas* each receive a considerable share of attention, and the whole collection of these and countless other plants accommodated under glass are in the most satisfactory condition as regards health. In connection with the indoor plant department it may be mentioned that there is a span-roof propagating house 230 feet long, with a bed in the centre extending the whole length, covered with frames, which is employed in maintaining the respective stocks of plants, and the number of cuttings annually struck in this house could scarcely be estimated; it must certainly run into hundreds of thousands of choice and valuable plants that are every season widely distributed before operations are again commenced.

VINES AND FRUIT TREES IN POTS.

Several span-roofed houses from 100 to 200 feet long and 22 feet wide are occupied with Vines in pots, which at the time of our visit were very promising. The canes were stout, but ripening well, and the general appearance of foliage and growth proving that there was a robustness of constitution which would produce good results in the future. Of the 6000 grown every year in pots nearly three-fourths are Black Hamburgh—good evidence of the popularity of that indispensable variety. Next to that comes Muscat of Alexandria, and then there is a considerable falling off in relative numbers; but that fine variety Gros Maroc is rapidly gaining ground, and Madresfield Court is also advancing in favour, for orders increase, and it is evident that growers are beginning to overcome the difficulties that have hitherto somewhat checked the popularity of so handsome a Grape. Foster's Seedling, Buckland Sweetwater, and a few others are well represented; and then there are smaller numbers of many other varieties which find favour with a few, but cannot be termed "Grapes for the million." Peaches, Nectarines, and Apricots, with other trees for orchard houses are also grown in pots in considerable numbers, and generally deserve equal praise to the Vines for their condition.

CLEMATISES.

Scarcely any firm has done so much to popularise these useful and handsome plants as Messrs. R. Smith & Co., and the well-merited result of their efforts to bring them into prominent notice has been the development of an enormous trade which taxes the skill of the propagator to keep pace with. All are familiar with the announcement "70,000 Clematises," but those who have seen the enormous stock annually dispersed from this nursery would be inclined to think the number under-estimated rather than otherwise. Houses, frames, and beds outside are devoted to this formidable army early in the year, and then as the season advances we find them rapidly disappear, until their places are again filled from the propagating house. Numerous varieties are grown, comprising all the finest varieties hitherto obtained, several handsome novelties having originated in the home nursery.

FRUIT TREES.

The nursery comprises 200 acres, and a large portion of this is devoted to hardy fruit trees, which form so considerable a portion of the trade of the firm. Apples, Pears, Peaches, Plums, Cherries are grown in enormous numbers, together with all other fruits ordinarily in demand. As an example, we may remark that 60,000 Apple stocks were just being budded at the time of our visit, while the trees for sale in all stages, standards or trained, are in proportionate numbers, fine sturdy specimens, vigorous without being excessively luxuriant. Strawberries form another specialty, and occupy a large space, while Currants, Raspberries, and Gooseberries fill some acres. Amongst the last mentioned is a variety named Whinham's Industry, which is rapidly coming to the front as an extremely prolific and thoroughly useful sort, and so meritorious is it that we give an illustration (fig. 41), which faithfully portrays its general characters. Nothing very definite is known of its origin beyond the fact that it was raised in Lancashire by a man after whom it is named, and by whose son it was some time afterwards distributed. Messrs. Smith and Co. first brought it prominently in notice, and it is now rapidly becoming a great favourite with market growers both here and in America. It is of quick robust growth, exceedingly prolific and early, qualities which can be fully appreciated by all who have to supply the markets. We are informed that one local grower intends planting 10,000 of this Gooseberry, as he has conclusively proved its value, having gathered this year a local pot (84 lbs.) from every ten, three-year-old plants on his ground. The berries are large and heavy, at first green, but ripening to a deep red. It is, however, especially recommended for early gathering.

TREES, SHRUBS, AND HARDY PLANTS.

To barely enumerate the most notable of the trees and shrubs in this nursery would fill a volume, and in this hurried glance a few general notes must suffice. The Conifers and evergreens form one department, and comprise a host of handsome plants, such as can scarcely be surpassed. Especially noticeable are the superb gold and silver standard Hollies, which in health and clearness of variegation are all that could be desired, such specimens being invaluable either as single plants in

prominent positions or in the shrubbery. The Golden Thuis and Cypresses, with the elegant *C. erecta viridis*, the silver-like *Picea Engelmanni glauca*, together with grand beds of Pinuses, all deserve more attention than we can give them now, and some more detailed notes

nursery in itself, for 200,000 plants occupy much space, even when closely placed. In the hardy plant department similar enormous numbers are repeated, and the collection, both as regards extent and choiceness of the species or varieties, is one of the best in England.



Fig. 41.—WHINHAM'S INDUSTRY GOOSEBERRY.

must be reserved for another issue. The deciduous trees and shrubs occupy several acres of land, Oaks, Planes, Limes, Maples, and ornamental Thorns forming the bulk of the stock, all the best of the flowering shrubs being included. Roses form another department, a

Everything is on a most extensive scale in the St. John's Nursery, as the foregoing notes to some extent will indicate; but one additional fact may be stated that well shows the kind of business carried on—namely, that an average of 200,000 flower pots are required every year,

and the name of this firm must be a welcome one in Weston-super-Mare. So wonderful a business could only have been established on the soundest principles, and it is only by a strict observance of these that it has been advanced to its present position.

PELARGONIUMS IN THE FLOWER GARDEN.

As the time for propagating and increasing these is at hand it may be well to consider if we have any more useful plants in the flower garden and for the summer decoration of flower beds and borders generally, than these. In my opinion we have not, and a few extra hundred cuttings inserted at this season are always acceptable in spring and at hedding-out time, when it may be decided to plant a few more Pelargoniums than usual. Coleuses have been largely used in some gardens. They look fairly well for a short time in August or during the hottest part of the summer, but they are a long time in coming to perfection after planting; indeed, in a cold wet season they never do, and they decay very early in autumn.

These are the reasons we gave up Coleuses in our flower garden. *Alternantheras* merit the same character. *Iresines* are a little better, but too brief in duration. The variegated *Mesembryanthemum* is satisfactory while it lasts, but it goes off too soon in a cold autumn. Other plants might be named which are showy for a time, but they are too short-lived, and do not compensate for the labour and expense devoted to their propagation and culture previous to the time they are turned into the flower beds, and, after many years' experience in both dry and wet localities I have no hesitation in asserting that the most satisfactory class of flower garden plants we possess are the Pelargoniums. Any number of cuttings of them can be secured at this time. They may be rooted in the open air, packed in very closely in either pots or boxes. They do not require much fire heat or expense to keep them in good condition through ordinary winters, and they always turn out healthy in spring. A little extra attention then will convert them into good plants, and they will prove very effective immediately after being bedded out in May. The weather must be bad indeed if they do not make a good show from then until the end of October, and if the blooms are disfigured for a time with rain or rough weather they soon bloom anew when the weather improves. If the flowers are temporarily destroyed the foliage remains good, and this is a great consideration. We frequently manage to keep our Pelargoniums gay until the middle of November, but the majority of the other plants are over long before that time. I wonder if anyone could name a hedding plant which has remained so long in fashion, and is still used largely, than the old Tom Thumb Pelargonium? I grow it in quantity, and although there are many newer ones with showier flowers, I have found none with greener leaves, brighter blooms, and so lasting as this old favourite. Perhaps I ought to explain that I am not placing Pelargoniums against "hardy flowers," but amongst half-hardy summer flower garden plants the Pelargoniums are undoubtedly the most satisfactory.—M. M.

GLADIOLI AT THE CRYSTAL PALACE.

I wish that I could consider the large display of this grand autumn flower at the Crystal Palace as indicative of a revival of its culture in and around the metropolis; but I fear it is not so, for my own stand was the only one shown within 108 miles of London, the nearest exhibitor being Mr. Catley of Bath; and when we consider the natural habitat of the flower, and the fact of its successful culture at Fontainebleau, so much farther to the south, it does seem a remarkable fact that the only exhibitor for competition in the open class came from far-off Scotland, and that two of the exhibitors in the amateurs' class hailed from Yorkshire. It shows what I have always maintained, that the taste for florists' flowers is more fully developed in the north, and that although laudable attempts have been made to galvanise such a taste in the south, they have as yet effected no very great results.

I do not think that the arrangement of the schedule by the Crystal Palace Company was such as to attract growers either amateur or professional. When prizes are offered for collections it is pretty well understood that only large growers can compete. I met there two nurserymen who are very keen in their culture, but who justly said it is not easy unless one has a large collection to cut thirty-six distinct varieties, and that was the lowest number for which a prize was offered to nurserymen, while the sole prize for amateurs was for twelve varieties, and the amount for that no more than was offered for *Asters*, which could be grown for a few shilling packets of seed, and no more than was offered at a small provincial show. Growers are not attracted by the amount of prize money, but they do look to repay their expenses or partly so. This was utterly out of the question with such paltry prizes as were offered.

There were two large collections of 100 or 120 spikes set up, one by Mr. Campbell of Gourrock in Scotland, who was enterprising enough to bring them and set them up, which he did in very good style. I had been anxious to see them, and as I missed doing so last year, when I heard so much of them, but both he and other friends who had seen them both years said that they were not equal to his last year's exhibit. They were very noticeable for several reasons; one was the great length of the spikes. This had been to some extent, I have no doubt, attained by judicious shading, but with all that spikes with twelve or fourteen expanded blooms on them were not easily obtained, and this was no unusual thing in his collection. Another noticeable feature was the successful manner in which some old flowers, whose days I had thought were past, were shown. Take for example *Amalthea*, which indeed I never thought

much of; *Tour du Monde*, *Belladonna*, *Dumont's Dirville*. These and many others were shown in this collection in a manner which fully entitled them to be considered first-rate exhibition flowers. In this collection, too, were *Horace Vernet*, *Romulus*, a very old but very light flower; *Marquis of Lothian*, a scarlet seedling; *Franklin B. Hankey*, raised by my friend Mr. Dobree of Wellington; *Sylvie*, *Anna*, *Le Perle*, *Ondine*. The one fault that I found with the collection was that it wanted brilliancy; there were too many white and light-coloured flowers. Mr. Kelway's collection consisted almost altogether of his own seedlings, which he has named and distributed, and a few which were put up for certificates. It was a collection of the most vivid and various colouring. The length of the spikes was not equal to those in the Scotch collection, but in brightness of colouring and variety were much superior. There were several new varieties put up for certificates, of which four were awarded—*Lord Randolph Churchill*, scarlet flushed with violet; *Princess Maude*, brilliant purple, white throat, and with white lines in the petals; *Dora Thorne*, yellow, veined with purple, a novel and striking flower; and *Lord Ashbourne*, light vermillion, of good shape and substance.

Turning now to the amateurs' class, of which there was but one—viz., for a stand of twelve, I fear I must be guilty of a little egotism, for my own stand stood first, and I can, I think, without flattery, say it contained the best Gladioli in the whole Show. I have never put up so good a stand, and never hope to excel them. I suppose the season has been a specially good one for me, for I believe the Gladiolus likes a dry hot summer, but some of my friends said theirs had been very much injured by thrip, of which I had not a vestige. I never once used any shading, and, in fact, they had no more than the most ordinary care. I did not mulch, and am perfectly satisfied now that this is unnecessary, as it was impossible to have larger flowers than mine were. The stand contained the following flowers:—*Meyerbeer*, with twelve expanded pips on it; *Leandre*, a most beautifully soft-coloured flower; *Hesperide*, a very bright flower, white ground, but very largely flaked with rosy salmon, somewhat loose; *Daphnus*, a variety of the present year, tall spike of rosy salmon, flamed with slaty violet, and white centre; *Delila*, a lovely flower, bright rose, flamed carmine, large pure white blotch, the lower blooms measured 5½ inches across; *Flamboyant*, a splendid spike of brilliant scarlet flowers; *Murillo*, rosy cerise, white lines, and white throat, a lovely flower, measuring 5 inches across; *Seduction*, salmon, white blotches, carmine stripes; *Tamerlane*, a remarkable flower, brownish crimson suffused with slate colour on the edges, creamy yellow marks on the under petals; *Feather Gem*, a seedling of Mr. Dobree's, rosy salmon, flamed with rose; *Archduchess Marie Christine*, white, tinted with lilac; and *Rahaut*, a seedling of my own, to which a first-class certificate was awarded. It had a long spike with twelve expanded flowers of a soft French white, veined at the edges, and very distinct. The second-prize stand contained some very fine flowers, especially *Meyerbeer* and *Ondine*. They were spoiled, I think, in the setting up, too much foliage having been added, and there was a lack of quality in some of the blooms.

One cannot cease to regret the difficulty experienced in cultivating this glorious autumn flower, but there is much comfort in recollecting that the price of bulbs is now so much reduced that it does not require a great deal to replenish one's stock, and that some of the finest flowers are no higher in price than *Hyacinths*, which one only calculates to grow in perfection for one season. It is unquestionably the queen of autumn flowers. Not so gigantic as the *Hollyhock*, it is yet stately; while the *Dahlia*, although so symmetrical in form and varied in colouring, can never be compared to it for elegance and variety of tints and shading. Is it utterly hopeless to see more encouragement given to it, and hence, as an inevitable result, more growers cultivating it?—D., Deal.

HENSOL CASTLE,

THE seat of Miss Fothergill in Glamorganshire, is a handsome building beautifully situated in a valley, finely sheltered on the north by a hill, from which a charming view of the surrounding country can be seen to advantage for miles on all sides. The view obtained from this spot stands almost unrivalled for picturesque beauty. To the west of the Castle is a beautiful lake covering 60 acres, which adds greatly to the appearance of the place. It is well stocked with fish, and several fishing boxes have been erected along the banks. There is also a handsome boathouse. Returning from the lake towards the Castle, on the north side I observed some good Conifers, notably *Araucaria imbricata*, *Wellingtonia gigantea*, *Cedrus deodara* and *atlantica*, also some of the largest Tulip Trees I have ever seen, and grand old Beeches, Limes, and Oaks. Curiosity led me to measure the spread of an Oak, which was fully 100 feet from tip to tip of the branches, and little more than 30 feet high. This tree was clothed to the ground with branches borne on strong limbs projecting from a proportionate bole. It seemed somewhat singular to see strong branches projecting 20 or 30 feet straight, and then drooping to the ground. This tree in all other respects resembled the common Oak.

There are few features connected with a garden which add more to the beauty and enjoyment than well-kept lawns. Hensol Castle may well be famed for its lawns, which, though extensive, are kept in first-rate condition, and are seen from the principal windows on all sides. The Castle walls are covered with Ivy, neatly trimmed. On leaving the Castle for the kitchen garden, turning to the left we passed along an 8-feet walk with ribbon borders on each side, which were gay (at the time of my visit, August 5th) with a miscellaneous collection of herbaceous and bedding plants. At the back of these borders were some fine Rose beds. Though most of the varieties are old they were blooming profusely, and I was informed they were the "real cut-and-come-again

sorts." The kitchen garden is 2 acres in extent, and surrounded by a wall 10 feet high, well covered principally with Apple and Pear trees trained horizontally. Many of them were carrying heavy crops. The south wall is covered with select Peach, Plum, and Cherry trees, all of which were young, clean, and vigorous. A small brook passes through the garden running from east to west, with a neat rustic bridge in the centre. The ground has a gentle slope towards the brook on each side. The garden is divided into proportionate quarters by 6-foot walks, with Box edgings, and it was well stocked with excellent vegetables, very notably being some fine Asparagus plants in 4 feet beds. Root crops were looking uncommonly well, especially Carrots and Parsnips. A quarter devoted to small fruits was well stocked with fine old Gooseberry, and the Currant bushes were bearing an immense crop. In short, the kitchen garden was in the same high state of keeping as the place throughout. The garden is small, and there are few fruit trees planted in the borders; but immediately to the back of it is a fine old orchard, well stocked with established trees, which were scarcely carrying an average crop. Apple and Pear crops (generally) in this locality are under the average.

Glass structures are rather wanting in this old establishment; but doubtless many of the readers of the Journal have heard or read of the Hensol Old Vine. I think I may safely say it is the largest and the oldest Vine in the principality. The vinery is 80 feet long by 18 feet wide, and the whole ground surface is covered with flagstone, sloping from the walk at the back of the house to the front wall. The Vine (a cutting from the Hampton Court Vine) was planted eighty years since by the late Mr. Crawshaw in a prepared border outside, and introduced through a hole in the wall at the centre of the house. The stem of the old Vine before entering the house is nearly 3 feet in circumference. On entering it branches horizontally off right and left in two leading shoots, which have grown to each end of the house. Rods are trained up the rafters at 4 feet apart to the top, and they fill the house. The border is 80 feet in length and 45 feet broad with a fall to the south. This grand old Vine until a few years ago bore heavy crops of well-finished Grapes, but as there is no artificial heat in the house they did not keep well in damp autumns. More than 900 bunches have been cut from it in a season. The gardener in charge two years ago thought to renovate the old Vine by lifting all the roots and adding a fresh compost. This he did, but I need hardly say at the expense of the Vine, for a season or two at least. Last year it was nearly nude of foliage, and the little it had was weak and sickly. Mr. Dorward, Miss Fothergill's present gardener, informed me that when he took charge of the gardens fully twelve months since he did not know whether it would live or die with no artificial heat at command. The first steps taken were to shade the house with whitening and open the ventilators as little as possible, giving plenty of moisture when the temperature rose high enough to admit of it. The Vine kept the little foliage it had well on in the season, which showed that the roots were laying hold of the new compost. And this season, when the Vine commenced to break, the house was again shaded, and kept close and moist. It must have been a pleasure to the owner, who prizes it very much, to see it break fairly well, and I am glad to say (at the time of my visit) it seemed to be gaining strength and vigour—in fact, it bore a few small bunches. If I mistake not Miss Fothergill will in another season have the pleasure of seeing her old favourite in good condition, under the fostering care of her intelligent gardener, who is deserving of much credit for the clean and orderly manner in which the place is kept.—A. SMITH.

SALPIGLOSSIS SINUATA COCCINEA.

THE singular variety of colour afforded by the different forms of *Salpiglossis sinuata*, a variety hardly equalled by any other genus in cultivation, has enabled this plant to retain its place in popular estimation, notwithstanding the very considerable number of more recent introductions in the class of annual plants. But for one rather serious defect the *Salpiglots* would unquestionably take even higher rank: we allude to their height, which renders them less fitted for small masses or beds than many dwarfier but less showy plants. It is true that so-called dwarf varieties have been raised, and are annually offered in the seedsmen's lists, but the difference between these and the older varieties is less marked than could be wished, and much remains to be accomplished in perpetuating a strain of these elegant annuals of decidedly dwarf habit.

Of the numerous distinct shades of colour in which *Salpiglossis sinuata* occurs, none are more pleasing than coccinea. In its general habit and characters it resembles the other varieties; like them attaining a height of 1½ to 2 feet, with erect branching stems clothed with clammy hairs. Its colour is "a clear vivid tender scarlet," relieved by darker veins of the same tint.

Its cultivation is precisely that of the other varieties. The seeds require the aid of a hotbed, and are best sown in March in pots of light sandy loam: they should be thinly distributed, and as soon as the seedlings are an inch or two high abundance of air should be admitted if the weather is sufficiently mild to allow of it, for the *Salpiglots* are by no means tender, and will not bear "coddling." When the young plants are large enough to handle without injury they may be transferred in

small patches to larger pots of light, rich, but well-drained soil. If, however, the seedlings have come up thickly, they will need transplanting separately, or thinning-out. In either case they should, when repotted, be returned to the hotbed, and be kept closed for a few days; after which, about the end of April, they may be placed in a cold frame, and gradually hardened off before planting out in May. A light rich soil, composed of a little leaf mould and thoroughly decayed manure mixed with sandy loam, suits them best. They form a very beautiful bed where the massing system is adopted, but are equally valuable for planting in clumps in the mixed borders, and will flower through the summer.

In favourable localities the *Salpiglossis* may be treated as a hardy annual, the seed being sown in the open border in April, and sturdier



Fig. 42.

plants will be thus obtained, which will, however, bloom somewhat later than those raised under glass.

The *Salpiglots* are all natives of Chili.—W. T.

JUDGING AT EXHIBITIONS.

[A paper read before the Dundee Horticultural Society by Mr. W. Williamson Tarvit House Gardens, Cupar, Fifeshire.]

(Continued from page 221.)

FRUIT.

I WILL now briefly point out the characteristics of other kinds of fruit as bearing on their exhibition qualities. The first to be noticed is the Melon, the point of most importance being flavour with size. If we have a fruit of fine quality we wish plenty of it. Thinness of rind and depth of flesh are to be considered when the fruit is cut; if uncut, the eye, the nose, and a knowledge of the different varieties will have to guide to possibly an unsatisfactory conclusion. I am not an advocate for tasting fruit when judging, especially amongst Grapes, unless to prove their ripeness, or when a variety is unknown, otherwise they should be judged for flavour by their appearance; if the points which indicate good quality are all present it may not be the fault of the cultivator if the flavour is wanting. The next in order are Peaches and Nectarines, both to be judged alike as to size and quality, not to sacrifice the latter for the former, as is too often done, awarding the prize to well-known coarse varieties because they are large, ignoring the claim of finer more inviting fruits. Judges often have great difficulty in deciding when they have two varieties, one coarse but well-grown, the other an excellent variety, but small beside a well-grown fruit of the same sort. The prize should be awarded to the larger fruit, because cultural merit must weigh to a certain extent against quality only. Coloured Peaches should be preferred to light or yellow ones if equal in size and quality. The Fig shows well in dessert, and should be fully ripe, but with a dry skin free from splitting, which comes with over-ripeness, should be solid and sweet. Apricots, Pears, and Plums are much the same value in competition. Some judges would be inclined to give Apricots a point more than Plums, but the one is as easily grown as the other, and as much valued for dessert. Pears may be shown on equal terms with either of the two, some of the late sorts a point better, but the early autumn varieties, of which Jai-

gonelle is the best, should receive the same value. The principal feature which distinguishes these fruits for high quality is the colour produced by the influence of the direct rays of the sun. These fruits never attain the same degree of perfection where too much shaded when ripening. If we look at a Jefferson or Green Gage Plum shaded by leaves, and others from the same tree fully exposed, we are led to suppose they are different varieties, especially when tasted. The rose tint on the amber ground speckled with crimson against the dull yellowish green of the shaded Jefferson indicate the difference between the good and inferior fruits. The Apple, certain varieties of which are highly appreciated for dessert and look well in a collection of fruits. The highly coloured sorts are especially attractive, but lacking in flavour compared with some of the paler varieties. Ribston Pippin is the best of all dessert Apples when properly ripened. Oslin is also much superior to either Irish Peach, Devonshire Quarrenden, Astrachan, or Worcester Pearmain, although they stand unrivalled in appearance. The Apple, when cut, should be firm, with small core, juicy, and aromatic. The judging of small fruits is rather an easy matter. Size and colour are the two principal characters in deciding the prominence each should obtain in the prize list. In regard to Red and White Currants a mistake is sometimes made by exhibitors in cutting the bunches and selecting the parts with the largest berries on them to make them look well as a dish. As these fruits are always pulled with the stalks they should be left intact and judged according to the number and size of the berries on each stalk.

Before leaving the fruit I would like to say something about staging it, which does not receive the attention necessary for the convenience of the public. Let there be a systematic arrangement, a well-defined outline separating the different lots, and cards with bold letters placed over the exhibits in each class with the number and name upon it, so that everyone could see at once the number of competitors in each class, with the respective productions, when the judging is finished. Where practicable, the prize dishes should be placed together to allow of easy comparison.

VEGETABLES.

Vegetables are invariably judged in competition according to their size, that being the chief point of importance, and justly so, if the quality is good also, but any approach to coarseness should reduce their value. Meanwhile size has much to do with quality. If small, they are liable to be tough. To have them in excellent condition they must be tender and succulent, but firm, these qualities resulting from quick growth without check from dryness or want of food. That the good or bad qualities may be discovered they should be cut, the finest to look at being often of inferior quality, and others, again, with nothing in appearance to recommend them, are much superior. Even the same varieties, by different modes of cultivation, are changed in quality yet similar in appearance. Baskets of vegetables are, as a rule, judged without applying the knife. The reason, I presume, is because of the mutilated appearance they would present to the public, but I do not see why the same rule should not be carried out. There are generally sufficient of one variety shown, that a single one from each would not detract in the least from the appearance of the collection. After being cut they could be placed beside the basket for inspection. In judging vegetables the same lines may be followed as explained before in the collection of fruit, except that three marks would be quite sufficient. The difference in value of say twelve varieties or sorts of high-class vegetables, or the expense and skill required for production, varies so little that the three marks or twelve points should be found sufficient. I will point out what sorts are entitled to the different marks, and the qualities which constitute first-class vegetables. We will consider the following twelve sorts—Cucumbers, Tomatoes, Vegetable Marrow, Celery, Leeks, Onions, Cauliflowers, Cabbages, Carrots, Turnips, Peas, and Potatoes. Perfect specimens of the first six should be assigned three marks, or the full number; these require more labour and skill in production than most kinds, and are equal to, if not superior, to any others grown for table use. Someone might be apt to say it is not as difficult to grow good Carrots and Turnips as Leeks or Celery. I would say, No. Give the former the proper soil, sow the right seed, and comparatively little more trouble is wanted. It is not so with the others; they require careful treatment in the young state, with constant attention and manipulation as they grow. If supposed to be out of season at an autumn show we have to say they are used by some people at that time, and if not, will keep till wanted, and please all the better from the extra attention secured. The last six mentioned should have two marks, or eight points for the finest examples, being all about the same order of merit for domestic purposes, and equal as regards the trouble and expense in cultivation.

I will now refer to the points to be observed in judging the kinds already named. The Cucumber should be fresh, straight, smooth-skinned, free from ribs, dark green; spines black, equally divided over the rind, with bloom undisturbed. If two are shown should be as near equal in all their points as possible. The Tomato should be of a bright red colour, clear skin, uniform in shape, firm and free from blemishes. Vegetable Marrow, if cut, should be judged according to their condition for present use, with these three points as to quality—thickness of flesh, thinness of skin, and smallness of core; if uncut, then the outward appearance and pressure of the thumb will be the guide. Celery is a very useful and highly valued vegetable, requiring much labour to have it in good condition in the month of August. The head should be round, compact, free from split stalks, which should be solid and smooth. When cut the centre should be white, solid, without indications of bolting, and well blanched.

The Leek, to have it large and well blanched in autumn, requires as

much attention as Celery. Very little difficulty is experienced in judging Leeks. The only point to notice is the length and thickness of the blanched part, which should be firm, round, and clear. Onions should be large, well ripened, with small neck and clear skin. The properties of Cauliflowers are size, closeness of "curd," colour pure white, a vertical section representing half a circle. The good or bad qualities of Cabbage can only be ascertained on cutting. Often the best looking are worthless when examined in this way. The inside should be yellowish, inclining darker to the outside, which should be green. The Carrot succeeds only in certain localities, and baffles all attempts to grow it well in many places. The points of quality are colour dark red, clean skin, free from fibre, smooth, brittle, tender, and sweet to taste. The Turnip has its peculiarities of growth like the Carrot, and requires a certain kind of soil to grow it well. Some people prefer the white to the yellow. The former is more a summer vegetable than the latter. The form should be round, with small tap root, clean skin, no green around the top, which should be small; inside solid, free from stain; skin thin, flesh tender and sweet.

The Potato has also to be cut to find out its quality. It is said a rough skin indicates and may decide that point; but such is not always the case; and then the same sorts are different in quality at different places. Two or three years ago I was judging at a show on the Fife coast. When we came to the Potatoes—I think it was the best twelve that was wanted—my partner at once selected Grampian. I offered no objection, seeing he was so enthusiastic. We next came to find the best six. He again selected the Grampian. I then asked him why he was so partial to it. He said it was the best Potato he had. I rejoined it was the worst I had, and put it away altogether, but I had to give in. We next came to the best round, the best coloured, and several others, all which had to go to Grampian. We learned after that they all belonged to one man. The following year the competitors were nearly all showing Grampian, but the judges being changed it found no favour, to the dismay and disappointment of many exhibitors. We should not judge varieties simply as we find them in our own locality, but as they are presented to us at the exhibition table by a thorough examination. When cut, we ought to find in the Potato a close texture and clear colour, all of one shade; the skin may be rough or smooth, but thin, and free from specks or blemishes, should be ripe and sound.

PLANTS.

Tables of plants are now becoming common at our shows, taking the place of the large overgrown specimens we used to see. There seems to be amongst judges and exhibitors different views, different interpretations upon the wording in schedules regarding tables. It is generally thus—"For the best table of plants so many feet long and wide." A competitor may take this view of the announcement, and suppose whatever sort of plants he uses the chief aim should be to have the table look well as a whole. The judges may take a different view, and award the prize to the table where the object has been to have the individual plants look well, and form a more meritorious group from a cultural standpoint; or they might look to the display of flower and foliage produced by plants, the majority of which are very small and without any indications of high culture. It would be of great advantage to competitors if they were certain of the lines on which the tables were to be judged, so that any regret or dissatisfaction might be avoided. Where effect has no part in determining the result of any competition the wording may be changed in this way: "For a table so many feet long and wide of the best plants." There would be no mistake on the part of any exhibitor. He would see at once what was required of him. In classes where quality and effect are combined, a very difficult task is given to the judges. Tastes are so different, and the difficulty of balancing the two properties to be dealt with so great, that the desirability of separating them, "thus forming a clear issue for decision," might be considered as advantageous to all. In judging tables of plants two or three matters require special consideration. First, the general appearance and healthy condition of the plants. Second, the quality as measured by the commercial value, and the labour and skill expended in the cultivation. Third, the diversity or variety in the collection, both of flowering and foliage plants. These can be judged in the same way as fruit and vegetables, by allowing so many marks for each of these three conditions, or by grouping all the plants of equal value together, and allowing the number to each group according to their merit. It would be impossible to lay down rules for judging tables unless the numbers and varieties were specified, the subjects are so numerous, and the standard of perfection undefined, consequently that part would have to be performed by the judges as a prelude to their labours.

Judging tables of plants for effective arrangement is a very simple proceeding, as it resolves itself into a matter of taste; but then a decision is not easily arrived at, as I have said before, tastes differ so much. What is pleasing to one is offensive to another. However, people generally appreciate what is natural and graceful, and have a dislike for what is stiff or artificial. In consequence, the former arrangement should be kept in view by competitors. The selection of plants bears a very important part in the success of any arrangement. Slender, elegant-foliage plants should form the principal portion, chiefly green, with colour enough to take away the sombre appearance, then the whole should be interspersed with flowering plants to give a cheerful sprightly aspect. There is no class of plants so well adapted for this purpose as those from the stove. A few common or greenhouse plants may be used to good purpose, but as a rule the denizens of the tropical forest are the best, consequently the richest tables do, with ordinary taste and skill in arranging them, prove the most effective.

A design in miniature of the natural habitats of those plants, with graceful Palms and Tree Ferns shooting out from an undulating bed of Moss and Fern, with clumps or single plants as a representation of under-wood, a few Orchids peeping out from the foliage or hanging from the stems of the taller plants, the graceful arching spikes form an exhibition unique and pleasing. Tables in this style should be encouraged by the judges.

Specimen plants are generally well understood by judges and exhibitors, the only doubtful point being size. Extra large plants should not have favour merely in virtue of size, most allowance should be given to those of medium growth in the best condition. The same unanimity does not prevail with regard to table plants; different men judging the same would often reverse each other's decisions, and chiefly in connection with the height. There ought to be a recognised standard as a guide in the matter, and the height I gave when reading a paper on these plants some years ago—viz., 20 inches from the table, I see no reason to alter. This does not imply that every frond or tip of leaf should be confined to this height, but that the main body of the plant be confined as near as possible to it.

I will refer to stands of cut flowers simply to show how they can be judged correctly by the same system advocated for the other collections. In selecting the Rose for this purpose I do so because it receives an extra share of public patronage, and the majority of people know the properties of the Rose better than many other florists' flowers. The combination of qualities which constitute a first-rate Hybrid Perpetual Rose are thick broad petals, smooth at the edges, glossy and fragrant, high and full in the centre, describing a circle round the edge, the petals thickly set and regular, so full as not to be loose. They should not be shown in the bud, as some inferior Roses look well when about half open, and would be considered worthless if fully expanded.

A few weeks ago I met a nurseryman belonging to this district, on his way home from officiating as judge at a Rose show. He commenced to speak of that show and judging. I asked him how he proceeded with the judging of two stands of Roses if, on inspection, they seemed to be nearly equal. He said they began at one end of the stands, took Rose for Rose, putting them against each other. If the one was better than the other that told as a point in favour of the stand to which it belonged. This is a very common system of judging cut flowers, but one that is wrong, in so far as it only supplies the number of best blooms in the stands, and not the real value in the aggregate. One bloom in either stand may possibly be as good and ought to count as much as two in the other; then if it should happen that this extra good bloom be taken against an inferior one, the balance of merit is lost sight of. A better way, if that plan is carried out, is to select the best in each stand, and put them against each other, when a true estimate of their value can be formed.

In accordance with the plan of judging I have proposed, I may conclude by showing how it is equally applicable to cut flowers. In taking the merits of two stands, the best bloom or blooms, if there are several equally good, should be allowed the maximum number, or three marks, equal to twelve points, the next to receive two marks, with the number of points added, which would represent their true value in relation to the highest standard, and so on deducting points, as the remainder recede in quality from each other, sum up the whole and find the difference for the prizewinners.

I may not have made my system of judging plain enough to be understood by all; but any subsequent discussion may tend to clear away any misunderstanding, and place on a favourable footing a system which, if adopted, would secure for the judges a means whereby they would be able to administer equal justice to all shades of difference in quantity, quality, or appearance.

TREE PÆONIES.

Is it not surprising that while the herbaceous Pæonies, *P. edulis* and others, are well known as among the most showy of garden plants, the tree *P. Moutan* and its varieties are practically strangers to our gardens? This is, however, an undeniable fact, especially so of English gardens, and how to account for their absence I know not, for we have no greater ornaments than these in the hardy garden during May and June, and it must be from their being insufficiently known and their requirements not being well understood that their absence is so noticeable. It is, therefore, with a view of awakening the older and more experienced of our gardening friends, who must know something of this valuable group of plants, that I am for a short time directing the attention of your readers; and while imparting the little I know respecting them, in the hope that some may be benefited and others induced to record their experience, I trust that the subject of these remarks may yet meet with the appreciation and more general use that they deserve at our hands.

Though among the grandest of our shrubby flowering plants in spring time, the present is a most important one in their propagation, which is the main reason for my now referring to them. In consequence of their flowering early in the year, it not unfrequently happens that both foliage and flower buds are disfigured, and the latter often materially injured, by our late spring frosts. This is especially the case after having passed through a winter of extreme mildness, and in consequence excited into growth much earlier than usual, only to be arrested by harsh biting winds and nipping frosts. This particular combined with their slow growth may have done much to mar their progress; still there are places and positions sufficiently sheltered and well drained to give them the little protection they require, together with the variety of other uses to which

they may be put, that the above-named drawbacks are as nothing compared with the grandeur and usefulness of these uncommon plants.

These shrubby Pæonies are natives of China, and belong to the natural order Ranunculaceæ, the genus taking its name from the physician Pæon, who, it appears, first used the roots for medicinal purposes. In that fine old work, "Hill's British Herbal," published in 1756, only three kinds are quoted; great stress, however, is laid upon their great and varied properties as a medicine. In common with the majority of strong-growing plants belonging to this order, they delight in a deep, rich, well-drained loam, such, for example, as a loam of fair depth overlying a gravelly subsoil. They delight in abundance of moisture during the growing season, and a good and perfect drainage. Anything approaching stagnation, or a position in which they are flooded in wet seasons, is sure to end with unsatisfactory results, if not ultimate death. On the other hand, a continuously dry hungry sandy soil is not suited to them, though this latter is even better than an excessively wet one. Like their sisters, the forms of *P. edulis*, they are deep-rooted subjects, and in cases where there are large established bushes their roots will have penetrated a depth of 3 or more feet. I have said large established bushes; these, however, will not be very numerous, though we have on record some examples of rare size, and I can myself bear testimony to some specimens fully 30 feet in circumference, one of which this year has had upwards of 200 splendid blooms; some of these would be as large as an ordinary dinner plate. Many years must necessarily elapse ere plants attain such enormous proportions as this, and it is questionable whether those who were at the expense of planting them would ever live to see them in all the glory which they attain in their native haunts, and where they oftentimes reach 8 or 10 feet high, though I have never seen them more than half that height in England. In continental gardens they are cultivated on a comparatively large scale, and are offered annually in great variety. Nearly fifty years ago the Chinese are said to have been possessed of over 300 varieties, but whether this be true or not, we have ample proof of their possessing them in quantity.

The best time for planting them in the open ground is from the end of August to the end of October, and once well planted allow them to remain undisturbed, save an occasional loosening of the surface and mulching in severe weather. They are best suited for the shrubbery in such places where they will not be overcrowded by other things of quicker growth, or for isolated positions on the lawn; but in whatever position they are placed there should be plenty of room for ultimate development, consequent upon their being impatient of being moved after once they are well established. In this respect they are very much like the herbaceous section, which in large plants can only be removed by much breakage and injury to their long tapering and extremely brittle roots, and which is sure to interfere with their flowering the ensuing year.

It has been suggested that these tree Peonies, when planted in the open ground, should be protected in spring by canvas or mats against frost. This may sound very well at first, though I do not in any way agree with it in practice. Rather let their protection be in the shape of sheltered positions, as I have previously said, than to resort to any covering which, while having the desired effect in one way, not unfrequently tends to make them the more delicate and susceptible to cold than when left fully exposed. So far as my experience goes, I consider a severe winter as conducive to their well-being, especially so if the wood has been well matured the previous summer; indeed, I have failed to notice any difference between these and any other hardy deciduous shrub, save that they may be somewhat later in flowering. I have known them to withstand from 22° to 25° of frost (and we seldom get more for any length of time together) without injury. Some ten years or so since the Messrs. Rollißon of Tooting had a good collection of these plants, numbering about 100 kinds more or less, so far as I can remember. These were in charge of the writer, and consisted of some exceptionally large forms. For my own convenience I carefully described them, but my notes referring to them I have unfortunately lost. I believe this collection at that time to be among the best, and many were as varied and gorgeous in colour as the best forms among the herbaceous kinds.

The original Pæonia Moutan and its varieties were introduced from China in the year 1789, and of which the following were among the best:—*P. M. papaveracea*, with large single white flowers, beautifully marked with purple spots at the base of each petal; *P. M. Banksi* (this is a double variety, and when fully expanded the blooms are 8 or 9 inches across; the petals are slightly tinged bluish, nearly white at the edge and purplish red at the base); *P. M. albida plena* is said to be a seedling raised at Arley Hall in Worcestershire from seeds of papaveracea, flowers are very double, rather pale, and suffused with purple at the base; *P. M. Humei*—in colour this is almost the same as Banksi, the flowers are double with a tuft of long petals rising from the centre of the flower. Among the more recently cultivated varieties the following are the best:—*Avocat Guillon*, very large and full, white, slightly tinted lilac, lilac centre, and blotched with carmine; *Beauty de Twickel*, dark carmine, large and full; *Comtesse d'Ansembourg* pure white on mauve-shaded ground; *Gloria belgarum*—this is probably the grandest variety extant, and was raised by M. Goethals of Ghent. I am not quite certain of the exact date of its emerging into commerce, but some nine years ago the exceptionally high price of 22s. was asked for a plant of it; the colour is a tender rose tinted cerise and shaded with carmine and deep crimson. *Jules Perlot* is a magnificent rosy lilac; *Madame Jules Orban*, fine white, with violet blotch; *Madame Stuart Low*, cerise red, with white tips; *Modeste Guerin*, another very fine variety, having enormous flowers of a bright dazzling fiery red, very full and globular in form; *Souvenir de Gand*, bright vermilion, very large

and full; Arethusa, rose, shaded purple, full, vigorous and fragrant; Athlete, lilac and white, a fine double flower; Triomphe de Gand, bright pink, shaded with salmon red, large and full; Rosea odorata, beautiful rose, large and fragrant; Lilacina plenissima, soft lilac, very fine; Jewel of Chusan, grand flower, globular in form, of snowy and transparent whiteness—this is an acquisition to this valuable group of plants; Grandiflora gigantea, cherry, very large and full; Ida, milk white, a very distinct and pleasing kind; Van Houttei, deep carmine rose, and brighter centre, edged white, fine. To these may be added a great many more, but I think they will be sufficient to prove that great diversity of colour has long existed in this truly magnificent genus, of which it may be remarked there is but one species. It is also worthy of note that while the Chinese varieties are all, or nearly all, double, the Japanese are mostly single, or at the most in some cases semi-double.

No traveller, probably, has done so much to popularise these plants as the late Robert Fortune, to whom we are indebted for the majority of the original kinds introduced from China. While penning these notes I feel how inadequate is our conception of the grandeur and bold characteristic beauty of these shrubs, for what have we till the Rhododendrons commence flowering that can in any degree compare with these for a brilliant and striking effect? and to see them several feet high, with 200 or 300 giant heads of flowers would be something new to not a few of us in these modern times. While having fully realised the diversified beauty of a few blooms on a plant of many of the cultivated forms, I am the more desirous of yet meeting them in specimen form. Here I would ask the reader to imagine that noble variety to which I have previously alluded, Gloria belgarum, which is said to have blooms over a foot across. Imagine such a one to have attained a height of 4 feet or 5 feet, and a circumference of 30 feet, having 200 blooms upon it, what a gorgeous picture would be presented! and though imaginary in the case of this one at present, it is by no means impossible for such things to be realised in English gardens, the only thing being a question of time after once fairly established. Speaking of fine specimens reminds me of a very fine one in a riverside garden at Cookham, under shade of the Cliveden Woods, which is about 10 feet in diameter, and was a grand sight when in flower last spring.

But now a few words as to their propagation, which may be accomplished in several ways—by division, by layers, by cuttings, by grafting, and from seed. The two last-named are the best, and the latter the only way in which new kinds may be raised. To be able to practise the first method—i.e., division, the original plants would have to be of fair size; and though it may be done, I do not recommend its adoption generally, since for these plants I am a strong advocate of the let-alone system. The second means of increasing them—by layers, may be performed about October, or even earlier, much in the same way as the layering of all deciduous shrubs is performed in autumn, which is so well known as to need no further comment. The next means which may be employed to increase the stock of these plants is from cuttings. These are best from single eyes, and if taken in the early part of January while the buds are yet dormant, and inserted after the manner of Vine eyes, and placed in slight warmth, a good per-centage of them will form roots. —E. J.



KITCHEN GARDEN.

Globe Artichokes.—These are over now, but they have been extra plentiful and good this season. Some do not care for them, others are very fond of them, and where many changes of vegetables are desired a good number of them should be grown. They need not have the best position in the garden, as they will do very well almost anywhere, provided the soil is deep and moderately rich. Many are in the habit of planting them in spring, but they may be very successfully transplanted now. We prefer autumn to spring planting, as the plants will be partially established before winter, and grow very freely next spring. Where the plants are very close together every other one should be taken and planted elsewhere. The strongest suckers which are pushing up from the sides of the plants are good for new plantations. They should be taken off with a root and planted carefully rather deep and 3 feet apart each way. Before frost comes all that have been transplanted now must be mulched well round the neck. Where planting is not necessary cut all the old fruit stems off down to the level of the ground, clean the surface between, and allow the young growths to develop freely.

Harvesting Onions.—Spring-sown Onions are a most satisfactory crop this season. Failure from any cause is quite the exception, and the grub which plays such havoc some years has been comparatively harmless this time. The plants were somewhat late in forming bulbs, but of late they have fully made up for lost time, and the crop is now a good one, indeed above the average, and it only remains to harvest it properly to make a constant supply of good Onions quite sure throughout the winter. The whole of the bulbs should be drawn up and laid down on their sides for a few days on the ground from which they were pulled. They should afterwards be spread out on a dry pathway for about ten days, and then they may be taken under cover and stored permanently. Should the weather

be wet and unsuitable for drying them in the open they must be put under cover, an open shed or similar place being good for the purpose. They need not be cleaned before being dried, but before storing all the loose skin, superfluous top-growths, and very long roots must be rubbed or pulled off by the hands. The largest may be placed by themselves to be used first, and the smallest be kept to the last, as bulbs about the size of a hen's egg keep much longer than any 1 foot or more in circumference. While drying they should never be more than one layer deep, but when stored they may be heaped on the top of each other, as if they are dry no harm will result from this.

Earthing-up Celery.—Much of this useful vegetable will soon be required in the kitchen. Earthing-up should have early and careful attention. Those who do not approve of earthing-up as growth goes on, but do not touch it until growth has been completed, must earth up now if it is desired to have it well blanched and tender when used. Take all the short outside leaves off. Tie those remaining firmly up near the top with a piece of old matting, break the soil on the edges of the trenches down fine, and work it in between the plants. The rough part may be put in between with the spade, but the hands should be used to press it round the stems, and on no account should the earth be allowed to drop into the centre or amongst the leaves, but the matting helps greatly to prevent this, and when earthing is finished it can be taken off. Early plants which have been earthed-up once or twice may be finally attended to, and plants which have run to flower prematurely should not be thrown away, as the leaves of them may be used in the kitchen in the place of the best produce.

Leeks.—The greater amount of white stem these have the better, indeed they cannot have too much, and to have them in the finest possible condition they should be well earthed up, the soil being placed close around the stems as often as it can be conveniently done without covering too much of the leaves.

Peas.—August and September crops have been fairly good, but we have seen them better. Now the pods are not filling rapidly, and we have almost seen the last of this much-valued crop for another year. Birds must be prevented from spoiling the full pods, and where rain has not fallen freely lately water heavily with guano water if possible, as this is more heating and stimulating than farmyard manure at this season. Sutton's Latest of All and Laxton's Omega have again done exceedingly well as late sorts.

Beans.—The Broad varieties are now finished. They are not at any time very choice, but they make a good change, and early in the spring they are delicate and acceptable. Any ripe pods on good sorts should be gathered and preserved for seed, and clear all the old plants away. They take much nutriment out of the soil, and any ground they have been on must be manured before another crop goes in. Runner Beans have been grand, especially those rows which were mulched before the dry weather set in. The small pods will swell yet for some time to come, but late ones in blossom will not prove very useful. Where tender pods are very abundant they ought to be gathered and salted for the winter. Our cook does some bushels every autumn about this time, and they are much valued in winter. The pickling process is very simple. They are mostly placed in stone jars with wide mouths. A layer of pods is put at the bottom, a little salt is then shaken over them, another layer is put in, and more salt over them, and so on until the jar is full, when a piece of cloth is tied over the mouth, and they are placed anywhere about the larder or scullery until wanted. Of course when taken out they are salt, but after being steeped in water for a time and hoiled they are generally pronounced uncommonly good. Pods which have become too old for use on any row should be gathered at once if they are not required for seed, as they will hinder the young recently formed ones from coming forward. Where Kidney Beans must be supplied all the winter make sowings of Oshorn's Dwarf Forcing in any vacant pit where a little heat can be turned on if wanted, and sow a quantity of seed in 3-inch pots to secure a hatch of plants for fruiting in pots in November.

Radishes.—The China Rose is the best of all sorts for winter. A year or two ago we sowed it about the end of August, and by the end of November the roots were 5 inches and 6 inches round, being too large and too early; but if sown now they will be right, as three weeks or so makes a vast difference in the sowing of any vegetable at this season. Put them in rows 1 foot apart, sow thinly, and give them a sunny position. They will keep up a supply from November until April.

Mustard and Cress.—For a considerable time these have been easily secured, seed scattered on the surface of the soil anywhere producing a crop; but this will not do now, and indoor culture must be resorted to. A great heat is not wanted. They will do in a frame or under a handlight for a time, and if the seed is sown in very shallow boxes or trays, with a little soil underneath, they can be transferred to any temperature as the state of the weather and the demand dictates. This is a good way of keeping up a supply throughout the winter in all gardens.

Autumn-sown Cabbages.—This is the most important of all autumn crops, and cannot be too well attended. No attempt should be made to allow all the young plants to remain in the seed bed until the whole of them are ready for planting, but as some will become large and ready for planting much sooner than others, these ought to be drawn up and planted at once, and more rows can be put in now and again as the plants are ready. Ground from which we have cleared the spring Onions has long been a favourite position for autumn Cabbage. They are planted without digging or manuring, and always grow robust and fruitful. The ground is hoed and cleaned before planting, and the

large sorts are put in 18 inches apart each way, and the small-growing sorts 1 foot or 15 inches. Examine recently stored Potatoes, removing any that are decaying. Keep Asparagus stems tied firmly up to the last. Hoe between the young autumn-sown Onions, Spinach, Turnips, &c. Do not allow weeds to make headway. Earth up late greens, and give all winter crops the fullest attention.

FRUIT FORCING.

VINES.—*Earliest-forced Vines.*—To have Grapes ripe by the close of April and the beginning of May the Vines should now be pruned and dressed at the earliest convenience, and prepared for closing the house in November. If the houses have been kept free from red spider and other insects a good washing with warm soapy water will be sufficient, in addition to any limewashing of walls, &c., as many healthy Vines are ruined by the barbarous practice of scraping, scrubbing, &c., when there is no necessity for it. When, however, the Vines have been infested with red spider, scale, or mealy bug strong measures should be adopted. The best winter dressing is petrolum, a wineglassful to three gallons of water, syringing the Vines so as to thoroughly wet them in every part. The whole of the house should be treated in this manner, and repeated when it has dried. The syringing should be again performed when the house is closed for forcing. The proper and most effectual time to deal with the enemy is through the spring and summer, especially in the case of mealy bug, when every insect that has escaped the winter dressing should be destroyed by the application of methylated spirits. Take advantage of fine weather to have all outside borders put in order by thoroughly clearing them of all old mulching material, and insert surface soil down to the top-dressing with new compost, consisting of rough turfy loam, charred refuse, and bone dust thoroughly mixed and used in a dry state. Beat it down firmly with the back of a steel fork, and cover up with 3 or 4 inches of fresh stable litter for the present. The borders should have the full benefit of all the rain that falls up to the end of October, the covering being increased in time to protect from frost and snow.

Late Houses.—Although such varieties as Lady Downe's, Gros Colman, &c., are sufficiently ripe for exhibition purposes, they will need to remain on the Vines a considerable time before they are fit for removal to the Grape-room, at least a long time to bring them into the best possible condition for dessert. Up to the end of the present month a good quantity of foliage is desirable on account of the colouring process; but as the days are shortening and the nights are getting cold, all lateral growths should be removed to admit of a free circulation of air through the bunches and main leaves, which must be kept clear of the glass. Where there is a house of Black Hamburgs ready for cutting the supply will be kept up until the Alicante, &c., come in in November onward, leading to Lady Downe's, which is the best for keeping up to May. To have Gros Colman in perfection it should not be cut until the Vines are quite leafless, then being bottled and kept in the Grape-room for at least a month, sufficiently dry to prevent the stalks damping, and then its flavour is so much improved that it may be ranked amongst the finest Grapes for use from January to March, its earthy flavour disappearing with keeping.

CUCUMBERS.—Maintain a genial temperature in this department, and ventilate freely during favourable weather, which will cause the plants, other points being attended to, to make a short-jointed and solidified growth, which is the foundation of a good supply of fruit, success being dependent upon healthy development. Close the houses early in the afternoon, or from two to half-past two o'clock, being guided by the weather and the aspect of the house, damping the walls, paths, and bed at the same time. Add some fresh soil to the sides of the hillocks or ridges of the plants recently transferred to their fruiting quarters, and of the same description as that in which the plants are growing, continuing to do this as the roots push through the soil, which produces a decided improvement in the plants. As plants have now reached the third and fourth wire and have been stopped, the laterals resulting will need to be trained regularly over the trellis, and all fruit showing should be removed at once, provided a supply of fruit can be obtained from other sources.

Plants in full bearing will now be considerably improved by receiving a top-dressing of three parts light loam and one part well-decomposed manure; after which, if dry at the roots, they should be watered with tepid and clear water, it not being advisable to apply liquid manure until fresh roots are formed and pushing well into the new soil. A temperature of from 70° to 80° during the day must be maintained, and 85° with sun, closing early so as to raise the temperature to 90°, the night temperature being kept at 65° to 70°. Ventilate freely on all favourable occasions, and syringe twice a day in bright weather. Let the stopping, thinning, and tying be duly attended to, and keep the foliage sufficiently thin to allow of light having free access to the principal parts, overcrowding and overcropping being the greatest evils in fruit, and especially Cucumber cultivation.

Plants growing in frames will require to have the linings attended to weekly or fortnightly, as may be necessitated by the state of the weather and the condition of the fermenting materials at the time work is done. When the plants in these structures require water at the roots let it be given in the early part of a sunny day, so that the foliage may become dry before sunset, and keep a guard against damp by ventilating in the early part of the day.

PLANT HOUSES.

Gesneras.—If these are not already in their largest pots they should be placed in them without delay. For most purposes of decoration these

plants are best grown in 5 and 6-inch pots. The pots should be liberally drained, and the plants grown in a compost of loam and leaf soil in about equal proportions, with about one-seventh of manure added and a liberal quantity of coarse sand. After potting the house in which they are grown should be kept close and the plants lightly shaded from bright sunshine until they are rooting again freely in the fresh soil. The atmosphere and stage upon which they are standing should also be kept moist, but care must be taken not to allow water to fall upon their beautiful foliage, or it will be brown and injured. These plants undoubtedly do best if stood where a little heat can be maintained beneath them, and where cocoa-nut fibre refuse or other moisture-holding material is employed. They must, however, be arranged close to the glass even if the first-mentioned position cannot be accorded them. They will be found to succeed very satisfactorily on a shelf if due attention is paid to the supply of moisture. Care must be taken in giving water until they have filled their pots with roots, when a plentiful supply should be given, and occasionally soot water in a clear state. Bright sun only should be shaded from them, every ray of light possible being necessary to insure a sturdy, dwarf, compact growth.

Gloxinias.—These are very useful in autumn both for decoration and supplying cut flowers until nearly the close of the year. Healthy late seedlings in small pots will prove to be very useful if transferred at once into 4 and 5-inch pots in a compost of loam, one-third leaf soil, a little decayed manure, and sand. They will be found to do best on a shelf close to the glass, where a night temperature of about 60° to 65° can be maintained. These plants will soon grow freely and gain strength in the temperature indicated, and in due time produce a good quantity of flowers. All plants that have ceased flowering should be gradually kept dry at their roots in order to mature and ripen their roots for another year. This must be done gradually, or they will decrease in size and strength. Plants that flowered very early in the season and have enjoyed a long period of rest in a cool place may have the old soil shaken from them and placed in boxes of leaf mould. In a moist temperature of about 65° signs of growth will soon be visible, and when the shoots have extended a few inches they may be potted singly into as small pots as possible. These plants are so easily grown that with care and judgment their useful flowers may be had the whole year round. Gloxinias are well worth growing through the winter, although it is not possible to produce them in such excellent condition as is the case during the spring, summer, and autumn months.

Caladiums.—Although these fine-foliage plants are not grown so largely as formerly, they, nevertheless, find a place where a great variety of plants are required for furnishing purposes. Annually many of the tubers are lost principally through the careless manner in which they are treated after their foliage naturally commences to fade. They must not be pushed on one side and left to themselves directly their term of service for decoration has been completed. They must be watered and tended with the same care afterwards as when growing, until their foliage naturally dies. This must be accomplished by slightly drier conditions both about the roots and in the atmosphere in which they are placed, until water can be entirely withheld from them. They should during the process of ripening enjoy full light, and no lower temperature than 60°, under which conditions they will thoroughly mature their tubers and pass the winter in safety. After the whole of the foliage has been ripened, if the soil about the roots is kept perfectly dry they will rest safely in a temperature 5° or 10° lower.

Urceolina pendula.—Under careful treatment this old favourite can be had in flower in succession for at least six months out of the twelve, and this during the most dreary months of the year when indoor flowers are not too plentiful. Plants that made their growth early in the season under the influence of light and heat will have been thoroughly ripened and resting under cool conditions for some time. These, if stood in a warm house for a few days, then given a little water, will soon show signs of activity, and their umbels of drooping yellow and green flowers will soon appear. By a judicious system of growing batches of plants at different seasons, resting and starting them successively in heat, there is no difficulty in having plants constantly in flower over the period indicated. After flowering the bulbs should be repotted in sandy loam, a little manure, and sand. A little leaf mould is also beneficial, as it encourages a free and quick development of the foliage. Water should be applied carefully after potting until the plants are growing and rooting freely.

Winter-flowering Plants.—Such plants as Poinsettias, Euphorbias, Begonias, and others growing in cold frames must be watered at their roots with great care after this date, or the latter will probably perish. Shading must be dispensed with, and every ray of light admitted to harden and ripen their wood, for upon this depends whether they flower well or the reverse. The frame must now be closed at night, and air admitted during the day with greater care than has been necessary up to the present time.

THE FLOWER GARDEN AND PLEASURE GROUND.

Propagating Pansies and Violas.—The past summer has been much too hot to suit these, and in many gardens where the Violas are largely bedded out they have failed conspicuously. They require a rather rich soil and plenty of moisture, and then they are surprisingly effective. Since good soaking rains have fallen they have commenced to grow freely, especially from the main stem, and the soft flowerless shoots are the best to make into cuttings. Failing these the tops of the old flowering shoots may be put in, and these will eventually form bushy useful plants. No bottom heat is required, and all that is necessary is to form a firm shallow bed of half-decayed leaves inside a frame, on this disposing about 4 inches

of light sandy soil, or a bed may be formed for handlights to stand on. The cuttings may be made about 3 inches long, cutting them to a joint, and trimming off the lower leaves. They should then be firmly dibbled in about 3 inches apart each way, watered, and kept close and shaded till rooted, when they ought to receive abundance of air in order to keep them hardy, and also to check luxuriant growth till the spring, at which time they will require to be transplanted to a more roomy bed. Pansies raised from seed in June, or from cuttings in July or August, and intended for winter bedding, ought not to be crowded together till such times as the flower beds are ready for their reception, but should be thinned out and replanted in beds of rather light and good soil, from which they will readily transplant in October or November. At that time also many old plants that have been cut over recently will have formed compact tufts of growth, and these may safely be divided and replanted for spring flowering.

Antirrhinums and Pentstemons.—These can now be had in great and good variety from a packet of seed, and seedlings are invariably the most vigorous. For early blooming the plants should be raised in the autumn, and if newly ripened seed is at once sown in pans of fine sandy soil, very lightly covered with more of the same soil, the pans either being covered with a square of glass or stood in a handlight and kept properly moistened and shaded, the seedlings will soon appear in hundreds. When large enough to handle they should be pricked out thinly in pans or boxes of light good soil, or in a frame. They will need but little protection during the winter, and be planted out where they are to flower some time in the following April. If it is thought desirable to increase or preserve the stock of any good sorts of either named or unnamed *Antirrhinums* and *Pentstemons*, no time should be lost in putting in the requisite number of cuttings. The former are the most easily struck in a mild hotbed, as recently recommended for *Verbenas*. The soft side shoots should be preferred, and these if slipped off and not more than 4 inches long will not require to be cut to a joint. They may be struck thinly in either pots or pans of good sandy soil, and when well rooted should be hardened off and wintered in a cold frame, finally planting out in the spring. *Pentstemons* are best struck in a cold frame or handlight placed in a cool shady position, and kept close till the cuttings are rooted. Later on they may be either potted or boxed in order to prevent their becoming unduly hard and root-bound, but they must be kept in a cold frame or pit, and planted out in the spring.

Carnations, Picotees, and Pinks.—Directly it is found that either the layers or cuttings of these are well rooted, they ought in the latter case to be properly hardened, so that all can be planted out where they are to bloom next season. All succeed best in beds raised slightly above the ordinary level, and in most cases an addition of fresh loam, horse droppings, and road grit will be good. The layers ought to be very carefully separated from the parent plant, and as much soil preserved about the delicate roots as possible; those raised from cuttings being also very carefully handled. The *Carnations* and *Picotees* may go about 12 inches apart in rows, the *Pinks* rather closer, and 6 feet is a good width for the beds, a 12-inch path separating them.

Saving Seeds.—*Pentstemons*, *Antirrhinums*, *Nasturtiums*, *Poppies*, *Lupins*, *Lohelias*, *Mignonette*, *Godetias*, and various other annuals and biennials are all seeding freely this season, and those who may wish to do so can easily save a quantity for sowing next season. All should be gathered directly the seeds are found to be fairly hard, and the pods be laid on dry shelves, each sort on separate paper, to thoroughly ripen the seed preparatory to its being cleaned and stored in paper bags. As a rule home-saved seeds, especially of *Stocks*, *Asters*, *Zinnias*, and *Dianthus*, seldom give such a good variety as do those obtained from respectable seedsmen, and for our part we prefer to annually purchase ours. The seed-growers generally cultivate each sort in large separate beds, and this preserves their individuality, and a good mixture can thus, if required, be supplied; whereas private growers cannot keep the sorts properly separated, and as a consequence the coarser and least valuable sorts naturally overpower the weaker choicer sorts, and the strain is much deteriorated. To save our own seeds, then, is often the reverse of being economical.

Grasses and Everlastings.—The greater portion of the former ought to have been cut and dried some time since, as if delayed till the seeds are ripe many of them would shatter, and the beauty of the *Grasses* be lost. The later sorts should all now be cut when dry and hung up in a vinery or other dry house in bunches to thoroughly ripen. All will be found very useful either for mixing with natural flowers during the winter or for placing in vases without any flowers or greenery with them. The *Everlastings*, notably the *Helichrysums*, should also be cut when dry, and before they are too far advanced, tied in bunches, and hung up to dry.

Sowing Grass Seeds.—Any bare patches may now be sown with lawn grass seeds, or new lawns may be formed and sown, and a good piece of turf be thus quickly obtained. This will be found far better than waiting till the spring, as no one likes to see bare patches, especially near a dwelling house.

combs, and provision. Young queens being those that give the greatest satisfaction, bee-keepers looking to their own interest will have seen to this important matter. Young queens do not, however, all turn out satisfactorily, sometimes through organic defects. When this is the case the queen should be deposed and the bees joined to another hive, or a young and healthy queen installed.

JOINING TWO HIVES.

The safest way to join two or more hives together when in frames is to crowd the bees on to as few frames as possible, after which break the seals of some of the combs, or sprinkle both well with very thin honey and water, or syrup containing a drop or two of oil of peppermint. When the bees are fully gorged, lift bees and frames together from the one to the other. The process with straw hives has been already described. Success depends entirely upon both swarms being gorged with honey and put into confusion.

SUFFICIENT STORES.

The bee-keeper will by the manipulation observe the amount of stores. Should these be deficient, lose no time in having the proper quantity of food supplied. A word of caution, however, may be necessary here. It is generally advised to give syrup thick at this season, which I have often seen followed with the result of bees dying with plenty of sugar in the hive, but granulated. Weight of sugar and water is a bad rule to work by, as some sugars are much stronger than others. Avoid feeding with beet sugars. Get the best cane sugar, and whatever quantity is to be dissolved, pour water on it until the water stands 2 inches above the sugar. Keep stirring until all is dissolved, and let it boil for one minute; the bees will store to the proper consistency.

FOUL BROOD.

The autumnal examination is not only advisable but necessary, so as to detect any traces of foul brood. If only a few cells are observed on the vacated combs there need be no fear, but if numerous sunken black seals appear amongst the brood, and prove to be foul brood by the brownish and sticky matter having a foetid smell, then it is better at once to separate bees and comb, putting the former into a clean hive, and the latter into the melting pot after the honey has been separated, taking particular care that none of the contents can be got at by the bees of your own or neighbours' apiary. When only a few unhatched cells are observed upon the outside combs, which may not be foul brood at all, it will be as well to excise such and anoint the place with carbolic acid, but make a thorough examination, and give the disease no quarter.

QUEENLESS COLONIES.

These sometimes cause a great annoyance from the fact that, though seemingly queenless, they are actually in possession of either an imperfect queen or fertile worker, and any queen introduced to such hives runs a great risk of being killed. To make sure work with all such hives, give them a piece of comb containing eggs and larvæ. If they are free from such pests, royal cells will at once be commenced. When they have wrought two days at these remove the comb containing eggs and larvæ, together with royal cells, and cage the queen to be introduced in the cluster for twenty-four hours. If no queen cells are attempted, then it is better to kill the bees at once.

PARTLY FILLED SUPERS.

These should be given to some hive to clean out. Where hives are not constructed for this purpose a box large enough to hold combs in frames or supers should be made, and placed beneath a hive constructed so as to admit the box containing the comb, to be slid underneath or withdrawn when necessary.

ROBBING.

As feeding with combs is apt to encourage robbing, care should be taken that no feeding is allowed through the day, nor a single drop of honey or syrup spilt or exposed. When a hive is attacked contract its entrance to that of a single bee, and if this does not prove sufficient, close it or remove it to a distance. If the former, ventilation of course is necessary, and by attending to it and giving it a flight late in the afternoon it will soon defend itself. Bees are bold enough to attack large animals, but are great cowards when attacked by bees of any hive. The attacking hive should be well smeared at the entrance with carbolic acid, but on no account should the acid be put near the mouth of the attacked hive, as it distracts their attention from the weak point.

THE BEE-KEEPER.

USEFUL HINTS.

EXAMINATION OF HIVES.

ALL hives intended for stocks should, so far as practicable be thoroughly overhauled to ascertain the condition of the queen

VICIOUS BEES.

Where bees have become vicious the bee-keeper should work as much as possible about the hive, using carbolic acid freely about the entrance until he gets familiar with the bees and has them subdued. Remember, the nearer the thoroughfare, the milder tempered they become. Wherever Carniolan queens are introduced stinging is unheard of.—A LANARKSHIRE BEE-KEEPER.

STRAY THOUGHTS.

THE advent of artificial swarming and the entire prevention of natural increase, while giving to the bee-master a certainty of profit and lessening his labour, have taken away the greatest joy he had in bee-keeping. Who that has seen the prosaic driving of a stock to found a swarm does not look back with some regret, if it be indeed a little tempered by utilitarian considerations, to the days of natural swarms? Who cannot remember the calm still day, the very air laden with the sweet odour of early summer flowers, the sonorous hum of the drone as he lazily flies, taking on this important occasion an early flight, or uneasily pacing in front of the crowded entrance; and as the midday sun throws down its gladdening heat, the bees resting for a short period from their long toil to meditate before leaving their home? And who, as the last moment arrives, and each bee, in a brief time of stillness, takes in a plentiful store to help in building up the future home—who can, I say, forget that ringing hum given by the bees as in one tumultuous throng they rush forth into the world? At last, as in a dense cloud, the swarm flies here and there; the matron queen, tired with unwonted exertion, seeks the nearest hush, and her dutiful subjects, ever mindful of the mother queen, join here with all speed.

But do we not, too, remember the darker side? The autumn night, the hole scooped out, the brimstone, and the death of those busy workers who from early spring in successive generations have toiled to gain a winter store? Does not this cloud our joy when we think of the days of natural increase, and make it more easy to forget the joy on thinking of the bees' sad end? I know old men who openly confess that as they look into the mass of sleeping bees they shudder at their deed and hate the day as it comes each year.

But—and yet another consideration is before me—when the process of driving is resorted to, great sorrow falls upon the bees and many die, crushed by the unskilled operator, who, timid perhaps, or new to his work, is unable to effect the operation in as skilled a manner as the more accustomed master hand. But let each one who tries to rescue the swarm doomed to death by sulphur, know that every bee he saves from destruction is a distinct advantage gained, and that each swarm he takes will, if added to his stocks, double their worth, and in the spring be to him a great source of pleasure, for may he not think as he sees them caper to gather the early pollen of the certain death that would have overtaken them if he had not put out a hand to save?

Let me ask each one who has to attend to bees to think of them and of their feelings, to assist them with all in his power, never to hurt one if it can be avoided, and, indeed, to consider them as friends and not as bitter foes ready to sting on the slightest provocation.—FELIX.

THEORY v. PRACTICE.

Of late years there has been a sort of mania for bee-keeping, brought about by the results of different hives of bees, and by vendors of apiarian appliances and trade journalism combined, which not only served the purpose of puffing, but by highly coloured statements induced many to start keeping bees. This is all very well in its way, but unfortunately for beginners their tutors were not practical bee-keepers, thereby leading many of the pupils into a snare. Apiculture seems to be a subject on which many have a desire to write who have little practical knowledge. They write plausibly and pleasantly enough to the novice, but to the practical bee-keeper much of the teaching is absurd—assertions without proof, and theory without practice.

There are, however, some writers sensible in their remarks, accurate in their observations, and what makes their articles more valuable, are written from observations founded on practice, tracing cause and effect from the true source. Amongst those writers I recognise "Felix, Cheshire," Mr. G. Abbey, and "A Hallamshire Bee-keeper." I have not observed any of these writers' opinions on spreading brood, but if their observations on that be as accurate as on other things, I know their opinion will be as mine, belonging neither to the "inner nor the outer circle of students," but as bee-masters. No practical bee-keeper will ever attempt to spread brood, never finding the necessity to do so. He knows full well how to have his hives at swarming point at the proper time, and while the thermometer is still registering 4° of frost, and it would be but a poor expedient indeed to spread brood so that the outer combs should be removed the following day and "melted down," even though it was to rescue a hive from foul brood, brought about by foolish manipulation, but happily foul brood has not its origin from chilled bees.

"Manipulate, manipulate," says the theorist, "and the result will be all you desire." But success is seldom realised when the advice is taken. I am in possession of strong proof from many of the dupes on this point. "Start on a right basis and continue the proper course," says the practical man, "and let the bees alone except when they require assistance for what they cannot do themselves, and they will, as they have hitherto done, reward their owner with abundance, and you will not be disappointed."

Let me here give my own experience of my stocks this season. No

one can teach bees, but man can get many a lesson from them both for his own and their good. I put up my bees in autumn, as I always do, in a state to stand the whole season without any interference beyond cleaning the *débris* from the false floor and widening the doorway when I observe the bees attempting it. Summer and winter arrangement, beyond supering, I make no difference, nor should there be, unless it be shading from hot sun. All my stocks were filled from side to side in May, therefore there was not any possibility to spread brood, and as my hives are large the queen never gets crowded out, the batching and laying being in equal ratio. May was frosty throughout, and there was 4° of frost on the 10th of June, and on the 12th the thermometer rose to 75°. Supers were put in and immediately taken possession of by the bees. Now, under these circumstances, would any sane person, even had it been possible, have attempted to spread brood, which would assuredly have been chilled? Where brood can be spread after the honey season is on shows a decided want of proper management during the preceding months. The number of eggs and larvæ destroyed in hives appearing in a normal state is something great, but only known to the practical and observant bee-keeper. How many more are destroyed under the manipulation of spreading the brood can only be conjectured, but disaster is sure to follow, similar to giving a sitting hen double the number of eggs she can cover.

Theory and practice are at utter variance, too, on the question of contracting hives and coddling generally. When we bury a hive on the northern side of a dry knoll the bees survive the period of immuration, but after disinterment, if the weather is cold, they fall victims to it. The same fatality attends them when a hive is contracted and the bees crammed together in little space, as well as when the door of the hive is contracted too much. Breathing space and fresh air are as essential to bee life as to human. Dryness at all times, too, is essential, and must not be overlooked. Practice shows me clearly when that course is departed from the mortality amongst the bees is greater, and the destruction of eggs and larvæ in a coddled hive is very considerable, and risky at all times of the queen being deposited.

I have a good opportunity of contrasting such matters with apiaries conducted on both principles, and one point of great importance at the present time is that where hives of different dimensions are supered—thus, where Stewarton hives are supered on two breeding-boxes, the bees take to and fill a super rapidly enough with the queen finding her way into it occasionally; but where the three-box system is carried out the supers are never invaded by the queen, while the bees from the extra space beneath will, on a favourable opportunity, build super comb when therein two boxes are idle, and the honey stored by those in the three boxes will be often double that of those in two boxes.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Joseph Schwartz, Route de Vienne, Lyon, France.—*Catalogue of Roses (illustrated)*.

Barr & Son, 12 and 13, King Street, Covent Garden, London, W.C.—*Catalogue of Daffodils and Bulbs (illustrated)*.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Raspberry for the Middle of Scotland (N. B.).—You cannot grow better variety than Carter's Prolific, which has large round fruits of a deep red colour, with firm flesh of excellent flavour. It is a summer-bearing variety, and, as its name indicates, is very prolific.

Black Raspberries (R. C. J.).—The autumn-fruiting Raspberries you refer to are hybrids between the Blackberry and Raspberry, and originated from the Black Raspberry obtained at Wethersfield in Essex half a century ago. There is also a variety known as the Autumn Black, of similar parentage.

Grapes for Canada (V. A. Brown, M.D., Canada).—The Grape Dr. Hogg, raised by Mr. Pearson, and referred to in his work, is one of the finest in cultivation, and is the richest flavoured and most hardy of the White Frontignan class. The Duke of Buccleuch is a grand early Grape. You can procure both varieties by applying to Messrs. Pearson of Chilwell, near Nottingham.

Cordon Pears (A. A. B.).—For the west wall: Fondante d'Automne, Doyenné du Comice, Jewess, and Glou Morceau. For the east wall: Dana's Hovey, Comte de Lamy, Comte de Flandre, Beurré Superfin, Winter Nelis, and Huyshe's Victoria. The Pear Conference will be opened at Chiswick on October 21st, but intending exhibitors must give notice to Mr. A. F. Barron, Royal Horticultural Society, Chiswick, not later than October 14th, and consignments of fruit should be delivered on or before October 19th.

Planting Roses (Amateur).—The standard Roses will occupy the centre of the beds, and from these on each side the dwarfs should be 2 feet 6 inches, and 1 foot 3 inches from the edge of the beds, so that the beds will need to be 7 feet 6 inches wide, and we should have the Roses 3 feet asunder in the rows. Between each two standards we should have a dwarf plant, otherwise the centre will be very bare. If you grow for effect, then we should plant with dwarfs only, and the plants 2 feet 6 inches apart every way, but you may still have a row of standards between the dwarfs in the central row.

Faded Vine Leaves (Merchant).—The leaves have on their under surface a number of warts, which may have been caused by too close an atmosphere. The warts are black on the leaves sent, as if destroyed by the fumes of sulphur. The leaves in other respects are healthy in appearance and look as if they were naturally ripening. This may have been brought about by the treatment the Vines have received, and probably the ripening is premature. This fact is further borne out by the lower leaves suffering first, which is always the case when the supply of food and nourishment fails. We expect you have not given the Vines sufficient water or stimulants at the time when they needed most. If the border in which your Vines are growing is deficient in lime or other food, or too dry, remedy the evil without further delay.

Ventilating a Conservatory (Ignoramus).—The system of ventilation requires to be the same both in summer and winter—viz., air should in the first instance be admitted by the top lights, but the time of doing so will entirely depend upon the temperature and the time of year. In the winter season, or from October to March inclusive, commence ventilating by the top lights when the temperature reaches 50°, increasing the admission of air with the increase of sun heat, and open the side lights. The ventilation should be reduced by closing the side lights in the first instance, and finally the top lights when the temperature declines to 50°. In summer the same conditions are to be observed, only the temperature should be kept at 60° to 65° through the day, observing the same rules as to commencing and closing the house. The temperature in winter should be 40° to 45° at night, and 45° to 50° in the daytime, by artificial means, which will be considerably advanced by sun heat, and in mild weather. Fire heat will only be necessary to maintain the temperature named, and to expel damp, when the fire should be lighted in the daytime, and ventilation given.

Asparagus Beds Failing (H. C.).—We have known several cases of failure similar to the one described in your letter. In one large garden two or three gardeners in succession made beds at great expense, and after bestowing every possible care upon them hopelessly failed. They at last concluded that the garden would not grow Asparaguses. The present gardener—a persevering man—having had considerable experience in nurseries, determined to make another attempt. He was successful, and has now beds as fine as any in the country. He did not purchase plants, but raised his own from seed, and he considers that the cause of failure in many cases is due to plants lying about for some months prior to being sent out, and are so dried with exposure that they rarely thoroughly recover. If your friend sows seed on the beds he might hope to attain success. If the soil is of a heavy nature the peat would prove rather beneficial than otherwise, but if light a liberal dressing of manure with a little clay thoroughly incorporated with the soil would be preferable. A light dressing of salt may be used with advantage.

Hardy Plants for a Small Rockery (A Youngster).—Provided the rockery is ready to receive the plants, commence operations now, as there is yet time to allow the plants to become established before the winter sets in. The drip from the trees is rather unfortunate, seeing you have such a fine exposure. However, if the branches overhang just a little it will serve as a protection from severe frosts, and will enable you to have plants that would not be quite hardy in the open. Among the plants that will grow in such a position are the following:—*Helianthemum* in variety, *Cistus crispus florentinus*, *C. halimifolius*, *Genista prostrata*, *Lithospermum prostratum*, any dwarf *Saxifraga*, *Arabis alba*, *Polygonum vacinifolium*, *Oenothera taraxacifolia*, and *Cl. tanacetifolia*, *Alpine Auriculas*, *Saponaria ocyroides*, *Nierembergia rivularis*, *Potentilla Clusiana* and *subcaulescens*, *Plumbago Larpenae*, *Linaria pallida*, *Sempervivum Lageri*, *S. arachnoideum*, *S. triste*, &c. You might also try the *Opuntias*, *Erinus alpinus*, *Linaria origanifolia*, *Gypsophila cerastioides*, *New Zealand Veronicas*, *Sedum*, *Arenaria Rosanii*, *S. umbilicus spinosus*, *Tunica Saxifraga*, *Dianthus Seguieri*, *Phlox verna*, and *P. amena*, *Achillea umbellata* and *Clavennae*, *Lobelia lutea*, and *Othonna cheirifolia*.

Carnations not Blooming (W. B.).—We have never found any difficulty in flowering Carnations and Pinks, and therefore cannot understand the cause of your failure from the information you supply. Since you say that the plants make plenty of growth, it would appear that the soil is suitable. Probably they are too much shaded by the high walls surrounding your garden, or they may be attacked by aphides (green fly), which suck out all nourishment from the stems. The seedlings in pots you can plant out and lay on the growths, which, if done at once, will be well rooted before winter. Probably you have failed to water the pipings of Pinks sufficiently, for with ordinary care they should root freely enough at this season. You might soon eradicate the wireworm from the soil without applying gas-lime by the following method:—Cut a number of Potatoes in half, and place into each a small stake 6 or 8 inches long. These should be inserted in the soil, leaving the top of the stake several inches above the ground, so that you will know where the traps are set, and can draw them out at intervals of two or three days. Carefully examine the Potatoes and destroy the insects found in them. By repeating this the garden will soon be cleared of these pests.

Bottling Grapes (R. H.).—Heat is only required to expel damp from the house if you keep the Grapes hanging upon the Vines. Much heat is not

necessary for this purpose if you exercise care in supplying water to the plants in the house, and ventilate it judiciously. We should have no difficulty in keeping the Grapes perfectly well in the house with the plants beneath them, but if you have had no experience in this matter your best plan will be to bottle them. This we advise you to do if the Vines are weak, as the fruit hanging upon them for any length of time after they are ripe is an extra strain which ought to be avoided. You have not said how old the Vines are, or what weight of Grapes they are carrying, therefore we cannot say whether you have overcropped them. The borders should not be dug, for this is detrimental to the surface roots, and no kind of manure will induce them to come there if you continue this practice. If the roots are some distance from the surface, remove the soil down to them either in autumn or spring, the latter being preferable, and top-dress with about 6 inches of good fibry loam, a few half and quarter-inch bones, say an 8-inch potful to each barrowload of soil. You may add the same quantity of soot or wood ashes, and about 10 per cent. of lime, or even more if you think the border is deficient in this ingredient. Top-dress annually as the roots come to the surface, and mulch afterwards with old manure.

Grapes Shanking (P. G. H.).—It is very difficult to say what is the exact cause of your Grapes shanking just about the time they are colouring. Shanking is due to one of several causes, and without an intimate acquaintance with the Vines, the soil they are growing in, the quantity of water they have received, the actual condition of the roots from the top of the border to the base, and the general treatment the Vines receive, it is very difficult to determine to which cause the evil is due. It not unfrequently arises from slight injuries to the stems of the branches and footstalks of the berries when the operation of thinning is performed. It is also due to the roots entering the subsoil or any other unsuitable material outside the real border. In deep borders with the roots a long way from the surface, where the air cannot penetrate to them, a close and sour soil, caused either by over-watering or over-feeding, is almost certain to produce shanking. An insufficient supply of food during the time when fruit-bearing is pressing most heavily on the Vines will also bring about the same results. This has been a dry season, and if you have failed at any time to give sufficient water, this alone would be sufficient to cause shanking. If you cannot find out the exact cause, lift the roots just before the foliage falls. They should be brought near the surface and encouraged to remain there. Lifting and laying the roots among fibry loam, one bushel of half-inch bones to each cartload of soil, with the same quantity of wood ashes and about 10 per cent. of lime, frequently proves a cure for shanking. You can keep the roots near the surface, after they are once there, by rich top dressings and mulchings with manure.

Vines Exhausted (Walter V. Lister).—Judging from the smallness of the berries, we should think the Vines are exhausted by the previous heavy cropping, though the unusually dry season will, no doubt, have helped the present result considerably. The roots should be examined, and the sooner after the Grapes are ripe and the wood firm the better. Remove the surface soil down to the roots, and if they are not deep do not attempt to disturb them, but, picking the soil from amongst them carefully, so as to injure them as little as possible, replace the removed soil with some fresh turfy loam of a medium texture, but light rather than heavy, and chopped moderately small, adding about a tenth of old mortar rubbish, half as much charcoal, and a less quantity of half-inch bones, the whole thoroughly incorporated. Do not cover the roots deeper than 6 inches, and make the soil moderately firm. If inside a good watering should be given with tepid liquid manure, and the surface mulched with a couple of inches of well-decayed manure. Outdoors the watering will not be necessary, but the border should be covered with dry material so as to protect it from frost. If in removing the soil it is found the roots are deep, then they should be lifted carefully, kept from the air by covering them as they are removed from the soil; and the drainage being seen to, and if defective rectified, proceed to lay in the roots in fresh compost, raising them so as to lay them in the top foot or 15 inches depth of the border, the nearest being about 4 inches from the surface. If the Vines have both inside and outside borders it is well to only attend to one, deferring the other until the following season. After the Vines are in full leafage supply tepid liquid manure liberally.

Insects on Vines (A. B.).—We have examined carefully the Vine foliage and shoots sent and fail to find any trace of phylloxera upon them. We wish you had sent us roots as well. You had better examine the roots, and if you discover any small globular swellings on the fibry portions send them to us for examination. Your Vines are, however, attacked by a small insect, which is the cause of the shoots being affected as they are and the reason they have ceased to grow. It not only attacks Vines, but Cucumbers, Melons, Tomatoes, French Beans, Gloxinias, Begonias, Celosias, and many other plants besides. The warmer and moister the atmosphere is kept the more certain it is to attack plants, Vines, and whatever it prefers, and, like the red spider, it does not appear very particular in this respect. It does not spread so rapidly in a cooler, drier, and airy atmosphere. We have known Vines attacked by it commence growing freely after they have been kept cool and given more air. It frequently attacks Vines when they are in a young state, such as those raised from eyes, and either grown in pots the first season or planted out; but very rarely afterwards, for they appear to grow too vigorously. It is indeed questionable if your Vines are attacked by it another year. On whatever it becomes established it completely arrests the growth. We advise you to pinch off the affected points, and no doubt the petroleum solution you propose will destroy it. It will be necessary to shade the Vines after using the petroleum. A cultivator who has a large collection of both fruits and plants suffered severely for a few seasons from this insect, nearly every plant he grew being attacked, and he found that the best means of eradicating it was by maintaining a cool atmosphere as advised above and syringing with a weak solution of soft soap and sulphur, leaving the latter upon the shoots and foliage for some days before washing it off again.

Names of Fruits (A Subscriber).—1, Lawson's Golden Gage; 2, White Magnum Bonum; 3, Corse's Admiral; 4, Corse's Nota Bene; 5, Washington; 6, Victoria. (B. C. P., *Andover*).—1, Lucombe's Nonesuch; 2, Washington; 3, Denbigh. (J. F. L.).—Beurré de l'Assomption. (A. B.).—The specimen resembles Dunmore, but we cannot determine Plums without shoots and

foliage. (H. H. C.).—The Apple is Early Julien. (B.).—1, Brown Turkey ; 2, Brunswick.

Names of Plants.—We only undertake to name species of plants, nor varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (J. H. W., Leicester).—Lycium europæum. The fruits are, we believe, harmless but useless. It is curious that the fruits of Solanaceous plants that are black or purple in colour are usually poisonous, but the yellow or scarlet fruits are generally innocuous. (Perthshire).—1, Polypodium aureum. The dull-flowered plant is Nicotiana rustica, the white woolly plant is Antennaria margaritacea ; 4, Solidago virgaurea. The numbers were displaced from some of the specimens, and two were quite unrecognisable owing to the fragile package having been damaged in the post. (B.).—1, Abutilon vexillarium marmoratum ; 2, specimen very imperfect, but resembling Lycopodium Selago. (W. S.).—1, Selaginella Martensi ; 2, too small and immature ; 3, Adiantum cuneatum ; 4, Cyrtomium falcatum ; 5, Pteris cretica albo-lineata ; 6, Davallia dissecta. (D. H.).—1, Not recognisable ; 2, Akebia quinata ; 3 and 4, varieties of Cupressus Lawsoniana ; 5, Cupressus torulosa. (H. S.).—Genista hispanica. (W. C. & Sons).—Tecoma capensis, a greenhouse plant, which can be increased by cuttings inserted in sandy soil in moderate heat.

COVENT GARDEN MARKET.—SEPTEMBER 16TH.

TRADE heavy, with prices still lower.

FRUIT.					
		s. d.	s. d.		s. d.
Apples	½ sieve	1 0	to 3 6	Melons	each 1 0 to 1 6
Cherries	½ sieve	0 0	0 0	Oranges	each 8 0 to 12 0
Filberts, Kent..	per 100 lbs.	25 0	27 6	Peaches	per doz. 1 6 8 0
Currents, Red ..	½ sieve	0 0	0 0	Pears, kitchen ..	dozen 0 0 0 0
„ Black	½ sieve	0 0	0 0	„ dessert	dozen 1 0 1 6
Figs	dozen	1 0	0 0	Pine Apples English..	lb. 2 0 4 0
Gooseberries.. ..	½ sieve	0 0	0 0	Plums	½ sieve 1 3 2 6
Grapes	lb.	0 6	2 0	Strawberries.. ..	lb. 0 0 0 0
Lemons	case	15 0	21 0	St. Michael Pines ..	each 3 9 7 0

VEGETABLES.					
		s. d.	s. d.		s. d.
Artichokes	dozen	1 0	to 0 0	Lettuce	dozen 1 0 to 1 0
Asparagus	hundle	0 0	0 0	Mushrooms	punnet 0 6 1 0
Beans, Kidney ..	lb.	0 3	0 0	Mustard and Cress punnet	0 2 0 0
Beet, Red	dozen	1 0	2 0	Oignons	bunch 0 3 0 0
Broccoli	hundle	0 9	1 0	Parsley	dozen bunches 2 0 3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips	dozen 1 0 2 0
Cabbage	dozen	0 0	1 0	Potatoes	cwt. 4 0 5 0
Capicums	100	1 6	2 0	„ Kidney	cwt. 4 9 5 0
Carrots	bunch	0 3	0 0	Rhubarb	bundle 0 4 0 6
Cauliflowers	dozen	2 0	3 0	Salsafy	hundle 1 0 0 0
Celery	hundle	1 6	2 0	Scorzoneria	bundle 1 6 0 0
Coleworts	dcz. bunches	2 0	4 0	Seakale	per basket 0 0 0 0
Cucumbers	each	0 3	0 6	Shallots	lb. 0 3 0 0
Endive	dozen	1 0	2 0	Spinach	bushel 2 0 4 0
Herbs	bunch	0 2	0 0	Tomatoes	lb. 0 4 0 0
Leeks	bunch	0 3	0 4	Turnips	bunch 0 4 0 0



AUTUMN CROPPING.

To be really useful advice should be timely, so that prompt action may be taken while it is worth while making a special effort to improve upon past work, and to apply remedies to faulty practice when they are calculated to tell home. Now, therefore, is the time to see if we are doing all that is possible to make provision for another spring—or, to be more exact, for that critical period of the year, the end of winter, when our hay and straw ricks grow smaller daily, our root heaps dwindle, and bare pastures afford no prospect of “keep” for some time to come. That is precisely the time to which we are looking forward now, and we cordially invite our readers to give the matter the attention it deserves.

Green crops for an early and successional supply of food for horses, cows, sheep, pigs, fattening and store cattle are being sown now, and it very much depends upon how this is done whether we are to have plenty of green food next March, April, and May, or are to follow the miserable suicidal practice of turning our stock out upon pastures which ought to be held in reserve for hay, and which, at that early period of the year, can hardly afford a full meal to any of the animals turned out upon it. We have already sown our Trifolium,

and would urge those who have not done so to lose no more time, but to sow at once upon a clean stubble. To show our high estimate of the value of this crop we may mention the fact of our having sown 40 acres of it now for use while it is green ; but if it should not all be wanted for green food it will be turned to account for hay or for seed. Rye is the next crop, and we are sowing 12 acres of it upon the home farm, and enough upon four other farms for the requirements of each. This is the earliest green crop of the year ; we have never had too much of it—seldom enough. This year we have 50 acres of it, and hope to supply horses, cows, and other stock in yards with it, as well as having enough to fold the breeding flock upon. It is off the land so early that we may plough and sow spring Tares, or hold it in reserve for a crop of Maize or Turnips. Large quantities of Rye used alone is apt to prove too relaxing, but chaffed with dry food it is both wholesome and nourishing. So, too, when sheep are folded upon it, care is taken to give them chaffed hay, bran, and crushed Oats in the troughs. Winter Oats will be sown before the end of the month. We have made arrangements to sow 50 acres solely for an early crop of corn, but if it is required for grazing in spring we shall certainly turn to it, and it will render us invaluable aid. Need we dilate again upon the obvious advantage of being able to turn to such a supply of green food in our need ? and remember that farm is indeed a poor one which is not self-supporting.

Green crops are often termed stolen crops, but we venture to assert that they will soon assume so much importance in that improved style of farming which is an inevitable outcome of the present depression, as to take a leading rather than a secondary position in our arrangements for the farm work of a year. Let it henceforward be an inflexible rule that farm land shall never be idle. Well indeed would it be if farmers would take a lesson from market gardeners, and regard bare fallows as a piece of extravagance in all ordinary seasons. It is only after two or three consecutive wet summers that we can be driven to fallows for cleaning the land. Brisk and energetic action must rule our practice. There must be no period of taking our ease ; we cannot afford now to finish the harvest and go partridge-shooting and cub-hunting. Save the corn, run the pigs, sheep, and turkeys over the stubbles, and then at once, without the loss of a day, up with them. Clean and burn foul weeds ; set to at the autumn cropping with a clear end and aim in view, making the present the handmaid of the future, and the past the stern mentor, literally the wise counsellor, to teach us what to do and how to do it. Is it possible that any farmer who has been driven to turn his cows out of the yards in spring for lack of fodder in search of food which he knows they cannot find, not to consider if he might not have done more in the past, or cannot do better in the future for them, and, therefore, for himself ? The mention of cows reminds us how invaluable Tares have been for them in the hottest and most trying period of the drought that is happily a thing of the past once more. Upon many a parched meadow have the cows been supported and the flow of milk sustained by carting a daily supply of Tares there. We began in May with the Winter Tares, which were ready before the Trifolium was done, and spring-sown Tares came on crop after crop in brisk succession. The Winter Tares were not sown till the second week in October, and we never had a better crop ; it was so abundant that use could not be made of all of it in the green state, so a portion was left to ripen for seed, which will now be threshed for sowing this autumn. It is only a trifle, but little things mount up and tell in the aggregate. Do not sow Tares only as provision for cows and horses, but also for folding sheep. They thrive upon Tares, and at the same time impart fertility to the land in a much more speedy and economical manner than is possible with manure heaps and cattle yards.

WORK ON THE HOME FARM.

The farm horses have been taken into the stables at night once more, exposure now often leading to colds and rheumatism, especially in old

horses. Calves and yearlings are also shut in the yards at night, which, as well as the lodges opening into them, are made comfortable with soft litter. Store cattle have had cake out upon the pasture for some time past. They have thriven well this summer, and we shall now begin sending the most forward animals to the butcher off the grass. Low prices have made poor Irish stock a drug in the market. Earnestly do we hope that it will have the desirable effect of driving inferior animals out of the market altogether. Cattle fairs will soon be numbered with things of the past in the eastern counties, so fast is the practice extending of testing the value of all farm animals by the auctioneer's hammer, weekly sales being held at all the principal markets. This is really only an extension of the wise principle of small profits and quick returns. Old ewes upon Clover and mixed dry food are showing improvement. It is not our intention to push them on fast, as we wish to do all we can to impart fertility to the land by folding, and so we do not give the ewes as much corn and cake as they could consume, but prefer to spread out the outlay for food for the benefit of the land. In any case, our expenditure upon artificial manure must be high both now and next spring, and we altogether prefer this outlay to the feeding of live stock, the carting, heaping, turning, and recarting, as well as the spreading, of farmyard manure. If it is possible, as we assert it is, to impart fertility to the soil at a reasonable rate by using artificial manures, does it not appeal to one's common sense that it must effect a very considerable saving to avoid all the costly process of the manufacture and application of farmyard manure? Do not lightly discard our advice, for assuredly it is not lightly given, for we have tried both systems for several years thoroughly, and have long been convinced that manure carts on farms may be dispensed with. The matter is so important that it ought rather to be enlarged upon in a special article than a brief labour note. Procure genuine manures separately and mix them on the farm.

HYBRID WHEAT.

MORE than thirty years may be counted since any known experiments were made in this country in the so called hybridisation of cereals with the view of obtaining new and more valuable varieties. High importance, therefore, attaches to a feat of the present harvest which has been accomplished by Messrs. Carter & Co. of High Holborn. This is the production of veritable novelties in Wheat by crossing some of the finest kinds hitherto resulting from selection. Entirely new sorts have now been developed; and these ought properly to be described as "cross-bred" rather than "hybrid" Wheats. Unlike some seedling plants, Wheat does not "inoculate," as farmers name the accidental or insect-governed process by which the character of the produce may be altered in different varieties grown and ripened in close proximity to each other; and perhaps it may be physically impossible that such undesigned cross-fertilisation should occur, though the occasional sporting of new sorts is hardly to be explained by any other agency of variation. Wheat is self-fertilising—that is, in each floret on the ear the pistil is impregnated by pollen from stamens within the same flower; and a provision against cross-fertilisation consists in the fact that the stamens are fully developed and the pollen begins to shed before the florets open, the impregnation of the pistil being accomplished before the flowers appear upon the outside of the ear. Mr. H. Evershed ("Improvement of the Plants of the Farm," in the "Journal of the Royal Agricultural Society") observes that "the clouds of pollen in a Wheat field are, like many other provisions for the security of reproduction, in excess of the customary requirements."

Thus the cross-breeding of cereals involves a delicate operation, demanding the skill and judgment of an expert. The anthers having been removed from a number of Wheat flowers while still in a green state, but near maturity, the pollen of another kind, which it is intended to use as the male parent, is on the following day poured gently on the feathery stigma, and the flowers next to the impregnated ones are destroyed, so as to leave at the time of maturity no doubt as to which grains have been acted upon. Several blooms on the same ear are generally operated upon in this way. It is a fine point, too, to catch the ears just at the right time in relation to temperature. There is a minimum—namely, about 75°—and also a maximum, below or above which the process cannot be performed. Only at a proper temperature of the atmosphere will the flowers open and expose the reproductive parts to the operator. The opening of the glumes is dependent upon a swelling out of the lodicules, which occurs at a particular temperature, and the degree of this swelling corresponds to the angle of opening of the glumes. Further, while artificial impregnation cannot be effected before this spontaneous opening, when fertilisation has once been performed the lodicules shrivel and permit the glumes to close over the pistil. Hence the care in watching, which is requisite for the success of the experiments. The present series of interesting operations are being prosecuted by one of Messrs. Carter's professional experts, under the personal guidance of the manager, Mr. C. H. Sharman, at the experimental grounds, Forest Hill. And, so far, the results have proved as gratifying to these experimenters as they are valuable to the agricultural world.

It appears that the desirability of thus artificially crossing some of the most popular varieties of Wheat was suggested by a competition of the Royal Agricultural Society a few years ago, in which a series of prizes were offered for improved kinds of Wheat, when, after exhaustive trials, the Judges were not unanimous in accepting any of the varieties submitted in competition as really distinct from sorts already cultivated, though two of the Wheats were selected as being so far in advance of the others as to justify special recognition by the award of silver medals. In the autumn of 1882 a number of the most valuable samples that could be obtained were sown in plots at Forest Hill. In the summer of 1883 some twenty or more crosses were made. The resulting grain was carefully harvested in 1883, and for the next year's production sown in triple rows—one row of the progeny in each case being grown between the rows of its two parents, this being for the purpose of thorough comparison of any peculiarities of growth and other characteristics. It was observed at a very early stage of

growth that in some cases the hybrid or offspring partook of the creeping and drooping form of the male parent instead of the upright habit of growth of the female. Later it was seen that in some of the Wheats the offspring had the smooth chaff of the male instead of the peculiar woolly chaff of the female which has been employed in producing it. These results are repeated in the crops of the present harvest; and we have had opportunities of verifying the observations both at the time of the Wheat coming into ear, again when ripe for gathering, and, further, when threshed or, rather, rubbed out by hand.

In one instance (No. 19 of the experimental triple-rows) the female parent is a short-strawed, velvet-chaffed Wheat, and the male a very large bearded and tall American variety. The offspring is about a foot taller than the female parent, the chaff is more or less smooth, and the thick ears bear minute awns at the apex of the chaff of each grain. These points in serrated order from top to bottom of the tier of sets having been observed to be obnoxious to sparrows, this new variety of Wheat has been distinguished by the name "Bird-proof." In No. 13 the female parent is the well-known early kind Talavera, and the male parent the American Duluth. We are able to confirm Messrs. Carter's observation that, in this case, the offspring ripened and was ready for harvesting fully fourteen days before either parent—a peculiarity observed both last year and in the present season. It may, therefore, be expected that this new variety will prove of especial service for sowing in those countries where the seed time is in spring and earliness is an important consideration. The ears are much finer and the grain appears to be greatly superior as compared with the Duluth, and a fortnight earlier than that variety, which has been up to this time considered the earliest in the United States. As English millers are said to mix certain proportions of red Wheat with imported white for the purpose of giving strength to the flour, Messrs. Carter have sought to blend together the qualities of red and white in one progeny; and as only such varieties as are already known and liked by millers have, in most of the experiments, been the parents employed, it may be anticipated that high milling value will distinguish the offspring Wheats. But, at present, the limited quantity obtained has not admitted of any of these hybrids being subjected to the actual milling test.

Among noticed peculiarities of the new Wheats, some exhibit in a high degree firm setting of the grain, or non-liability to be shaken out by winds—a desideratum for New Zealand Wheat-growers, who are accustomed to leave the crop until dead ripe before taking off the ears with a "stripper." Another new sort is remarkable for the short, thick, and strong nature of the straw, bidding fair to defy any weight of rain to lodge it, and being especially adapted for poor, cold, or wet soils.

A very important feature of the experiments is the remarkable vigour and productiveness of one and all of the hybrids as compared with the parents. The cultivation has been the same for all, and in each case the same number of grains was planted in each row—the male parent in the first row, the female in the third row, with the progeny occupying the second row between them. The greater number of stems and ears and superior bulk and weight of the hybrids were noticeable to the eye, and in several cases surprising. Yet it will be understood that the outer position in each triplet naturally conferred upon the parents every advantage of range of earth for the roots, and abundance of air and sunlight for the stems, flag, and heads of the growing and ripening corn. It should also be remembered that, while the parent stocks were brought from distant parts and had thus the benefit of change of soil and climate, the offspring grew three years in succession upon the selfsame spot of ground. One example of the vast fecundity of the new Wheats ought to be mentioned. One plant was pointed out to us, in No. 9, which bore sixty distinct, very long, and well-filled ears, averaging about fifty grains per ear, or a total of about 3000 grains grown from one seed.

After three years of continued cultivation three of the hybrids are regarded as sufficiently fixed in type and so valuable in distinctive character and properties as to warrant their growth on an extended area next year, with a view of supplying seed corn to the public. These are Hybrid No. 10, a cross between Square-headed White and Hunter's White; No. 13, a cross between Talavera White and Carter's Royal Prize Red; and No. 19, Carter's Fillmeasure crossed with Mammoth White.—(*The Times*.)

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.


Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain
1885. September.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	6	29.711	60.3	55.8	S.W.	57.5	70.5	50.5	111.8	45.4	0.198	
Monday	7	29.603	56.4	54.5	N.	57.8	66.6	51.6	97.4	44.2	6.137	
Tuesday	8	29.802	58.9	55.7	N.W.	57.8	68.2	51.4	109.8	47.8	0.288	
Wednesday ...	9	29.708	59.4	53.7	W.	57.9	66.2	50.7	113.4	45.5	—	
Thursday	10	29.893	57.3	52.4	W.	57.2	62.7	47.4	95.8	41.1	1.483	
Friday	11	29.493	53.3	49.7	N.	56.4	61.4	49.7	93.6	50.7	0.046	
Saturday	12	29.802	55.9	52.3	S.W.	55.3	62.8	48.2	78.1	41.8	0.017	
		29.725	57.1	53.4		57.1	65.5	49.9	100.0	45.2	3.169	

REMARKS.

- 6th.—Fine morning, dull after.
 7th.—Very dark about 8.15 A.M.; thunder at 8.50 A.M.; wet nearly all day.
 8th.—Fine day, but occasionally cloudy; heavy rain in late evening and at night.
 9th.—Fine day.
 10th.—Fine morning, with some sunshine; cloudy afternoon, with rain and wind increasing to midnight.
 11th.—Strong gale, with very heavy rain early, ceasing about 9 A.M.; fine afternoon.
 12th.—Wet till 11 A.M., then fair, windy in afternoon and evening.

This week has seen the entire break up of the drought, for rain has fallen nearly every day this month, and on the 10th more fell than in the whole of July and August. Temperature is still a little below the average, and continues to fall with very remarkable uniformity—*e.g.*, the average maximum temperature for the week ending August 15th was 71.3°. The weekly decrease since then has been 1.3°, 1.7°, 1.2°, and 1.0°.—G. J. SIMONS.



COMING EVENTS

24	TH	Sale of Bulbs at Protheroe's Rooms, Cheapside.
25	F	
26	S	
27	SUN	SEVENTEENTH SUNDAY AFTER TRINITY.
28	M	
29	TU	
30	W	Sale of Bulbs at Stevens' Rooms, Covent Garden.

EUCCHARIS GRANDIFLORA.

AMONGST choice plants there are few that in beauty and sweetness can surpass the Eucharis. No stove should be without them, for the flowers are always welcome, and with a few dozens of bulbs it is not difficult to maintain a regular supply. They are welcome in summer, but doubly so in winter, at which time they can be produced as readily as when flowers are plentiful everywhere.

The Eucharis is easily propagated by division, and those in possession of a few plants can add to their stock considerably in a very short time. Each strong flowering bulb will produce three or four in a season, which can be taken off and grown on separately or together. When it is necessary to increase the stock we do not see the wisdom of removing the small bulbs from those that have produced them, for they grow more rapidly attached to the parent. They should be grown on together until a number of large bulbs have been produced, when they may be divided and the small ones potted singly.

Potting may be done at almost any season of the year with equal success, but we do not advise the carrying out of this operation during November and December, when the days are very short and growth naturally slow. It should be done annually if the plants are to be retained in health and vigour, not necessarily the whole at the same time, but successively as they go out of flower. It is a mistake to subject the whole to the same treatment at one time, for they must be pushed into active growth afterwards, which would be the means of bringing the whole of them into a flowering condition about the same time. Some cultivators prefer feeding the plants to potting them every year, for fear they should fail to flower satisfactorily, unless they are thoroughly root-bound. Under the system we recommend we have never found any difficulty in flowering these plants. The secret is to encourage vigorous growth and then thoroughly mature it, afterwards subjecting them to a good season of rest. It will be admitted that all plants do better with soil in a sweet healthy condition about their roots, and if this is really the case then it is wrong to keep the Eucharis in the same pots for a number of years. However good the soil may be at the commencement, it becomes sour and exhausted after it has been in the pots for a year.

The Eucharis is not a deep-rooting plant, therefore the pots employed need not be large in proportion to the number of bulbs grown in them. For instance, a 5 or 6-inch pot will be large enough for three or four strong bulbs. Potting is best done directly after the plants have flowered, and the soil we have found most suitable is good fibry loam, one-seventh of cow manure, the same quantity of charcoal, one 6-inch potful of soot to each barrowful of soil, and a liberal dash of coarse sand. Press the soil as firmly as possible into the pots. Afterwards arrange the plants in a close moist atmosphere where a night temperature of 70° can be maintained, with a rise by day of 5°, 10°, or even 15° from sun heat. If the old

soil has been shaken from the roots the foliage must be well syringed until root-action commences. It is much better to syringe frequently than to supply water for some time after potting.

In the temperature indicated root-action will soon commence, and leaf growth should by every means be discouraged until developed and matured, when the plants may be gradually dried at their roots and removed judiciously from the warm to cooler quarters to rest. Nothing is gained by removing them before the foliage is fully developed and growth brought to a complete standstill, for they will not flower unless the bulbs are thoroughly matured. To attempt to bring them into flower when growth is only half completed by plunging them in strong bottom heat is useless, for the growth must be finished before any flowers will be produced. Even when they are rested while the growth is incomplete, the flowers afterwards are small in comparison to those from plants properly grown and matured. No advantage is gained by using bottom heat for Eucharises, for they will not come into flower any earlier or grow any better than in the temperature named.

The season of rest and the treatment the plants then receive are of vital importance to successful cultivation. When growth is completed keep the soil moderately dry before they are removed from a stove temperature, and this must not be done suddenly but gradually, or the roots instead of being healthy after they have been rested will perish. They will stand without injury in any cool house while at rest, provided too much air is not admitted and cold draughts do not strike directly upon them. Very little water will be needed while in this condition; in fact, no more should be given than is sufficient to keep the foliage from flagging. Two or three weeks' rest in a cool house is ample if they are wanted in flower; if not, it may be extended to six weeks. On several occasions I have had plants that have been properly matured before resting push up their flower stems with great strength in a temperature of 50° while endeavouring to keep them back.

Some cultivators contend that a season of rest is unnecessary for Eucharises, and adopt a system of cultivation that keeps them continually growing. This has been thoroughly tested, and for yielding flowers successively should not be practised. For a time the plants will do very well, but no certainty can be placed upon the period they will flower. In all probability a number of them may turn in at a time when they are least wanted. If this was discontinued we should hear less of the disease amongst Eucharises than has been the case lately. Under the non-resting principle the plants exhaust themselves in time, and cannot be induced to grow by any means, and the conclusion arrived at in more instances than one is that some disease has attacked them, and they are conveyed to the rubbish heap. This is no mere conjecture, but has been proved to be the case, and instead of the plants succumbing to some disease they only wanted a good season of rest, and would afterwards have grown again with the same vigour as formerly.

There can be no question that for purposes of decoration and for yielding flowers in succession, plants grown in 5 to 7-inch pots are decidedly the best. Some cultivators grow a number of large specimens only, but this is not the best method to maintain a supply. House room is often limited, and no more can usually be accommodated than are really necessary to supply the flowers demanded; therefore, these plants grown in the pots named have proved the most serviceable. Large plants when well grown, and carrying from twenty to thirty spikes of bloom, are very beautiful. Eucharises do wonderfully well when planted out in a bed prepared for them, and when grown on this principle are admirable for those that require a large quantity of bloom at one time. But when the flowers are wanted in regular succession the planting-out system does not prove the most satisfactory.

Under the system of resting detailed the *Eucharis* can be flowered three times during the year, but in order to accomplish this no time must be lost. Some cultivators can bloom them four times, but this only leaves three months for the plants to make their growth, rest, and come into flower. For one year they may be flowered four times within the twelve months, but this cannot be accomplished the second and succeeding years. While growing the plants require abundance of water at their roots and over their foliage, and even while at rest no attempt should be made to thoroughly dry them, for they are evergreen. Weak stimulants will be required every time water is needed after the plants have exhausted the soil in which they are growing, but feeding only will be needed during the last growth when potted annually.

Thrips and red spider will infest *Eucharises*, but this can be kept down by a free use of the syringe. Mealy bug is their worst enemy, which can be eradicated by sponging with a weak solution of any insecticide recommended for the destruction of bug. These plants do not bear a solution of petroleum and water, for the oil has a tendency to run down after it has been syringed upon the points of their leaves and finally turns them yellow.—WM. BARDNEY.

SOME THOUGHTS AND SUGGESTIONS ON FRUIT AND FRUIT-GROWING.

[A Lecture delivered at Wrexham, Friday, September 11th, 1885, before the North Wales and Border Counties Pomological Society, by Mr. E. J. Baillie, F.L.S.]

(Continued from page 245.)

THE GOOSEBERRY.

THEN there is the Gooseberry crop. This is one of the staple products of fruit cultivation. I was in the south of England in the early days of June, and it was a wonderful sight to see the Gooseberry pickers. Truck after truck is filled at the wayside station, and tons of fruit leave the country centres every day for the London markets. The ripe fruit of the Gooseberry has never been quite so popular, but if well grown, carefully gathered, and packed as dessert fruits ought to be packed, there is no reason why the better varieties should not be brought into more prominent demand. Currants, too, may be grown under almost any conditions, and at very slight expense. As a rule, Gooseberries are planted between the rows of the larger trees, but latterly plantations have been made and acres covered with Gooseberries alone. In this case the bushes are planted, say, 6 feet apart and 6 feet between the rows, requiring about 1200 or 1250 bushes to the acre. If the ground is too moist and heavy the trees have a tendency to carry moss, and in such a condition I have seen soot recommended as a good remedy. There is a fashion in Gooseberries as well as in other things, and, as a rule, a large dark-coloured fruit will have preference in the market. There are enemies in plenty to be taken into account, but we will not go into this aspect of the question.

CURRANTS AND RASPBERRIES.

Of the Currants the Black Currant is probably the safest investment. It is easily propagated, almost always a sure crop, commands a ready sale in the market, and is much safer from the ravages of birds than other kinds. The Raspberry is a fruit at once prolific and profitable, and ought really to find better favour even than it does at present. The rapidity with which it ripens, and the succulent pulpy character of the fruit, makes it difficult to deal with for distant markets, as it suffers considerably in transit. This is a serious drawback from a commercial point of view, but it is a fruit that ought to be abundantly grown for local demand. The plants may be planted in rows 2 feet apart, with from 12 to 18 inches between the plants. They flourish best on dry ground and in a somewhat sheltered situation. As the fruit is most abundantly borne on lateral branches produced near the top of the preceding year's shoots, great care should be taken in regulating the pruning. The number of suckers or canes, as they rise in spring, should be calculated, the old canes being removed in the autumn, and the new canes be shortened and fastened to stakes, as they will be the fruitful plants of the next year, or to save stakes the new canes may be bent into arches and tied together, and this is a good method of training.

THE BILBERRY AND THE BLACKBERRY.

We must not leave the small fruits without naming at least two not generally recognised as cultivated fruits. I allude to the Bilberry and the Blackberry. The Bilberry is just creeping into cultivated ground, with what chance of success and profit it is

perhaps premature to judge, but for clothing hitherto barren mounds and banks it ought to be recognised as worth attention. The Blackberry ought really to be one of the fruits of the future, especially if the illustration of the Wilson Junior Blackberry is at all reliable, and it is said to be taken from a photograph, I observe. In Herefordshire tons of Blackberries are gathered yearly, collectors get them together, and they are sent to the chief centres of population, mainly in the north. The Blackberry is not particular as to soil, but if it is particularly poor it should be well manured and well cleaned. In America the Blackberry is extensively grown, and in field culture the young canes are planted 3 feet apart in the rows, and 8 feet from row to row. The young canes are shortened back to within 5 or 6 feet of the ground. The best time for planting is the month of October. But the Blackberry presents another feature which should commend it. As a decorative plant for old walls or old fences it has few equals, and whilst pleasing the eye for the greater part of the year, as it is always interesting and attractive, from its first early leafage in spring to its rich autumn foliage, which is not impaired by ordinary conditions more or less affecting other ornamental plants, and the leaves do not fall, as a rule, until quite late in the season. The varieties of this fruit best adapted for cultivation are the Wilson Junior, Dorchester, Lawton, and Parsley-leaved.

THE APPLE.

We must now give some attention to the most important of our British fruits, the Apple. It is true that the Apple has not even yet received the attention it deserves, and I think the main reason may be that its value as food is not rightly realised. Upon this aspect of the question we will have some few words, but just now we must consider the Apple as we find it. It is, as you know, the popular fruit in the farmer's orchard, and with the enterprise of the times it is astonishing that such poor specimens, both as to condition of the trees and quality of the fruits, should be allowed to cumber the ground. Varieties that would be most interesting from an antiquarian point of view, the trees covered with moss and lichen, continue year after year to bring their poor return of worthless fruit, and it never seems to strike the owner that it is time to remove the venerable old cripples and have some more in keeping with the wants of the times. Well may America continue to send us her Pippins, seeing we have not yet learned to grow properly for ourselves. In 1882 England paid £783,906 for Apples alone, and the demand is undoubtedly increasing. An interesting point suggests itself here, that of improving the quality of the British Apple. This subject of hybridisation need not be touched to-night, but there is ample room for profitable practical experiment in this direction.

As to the kinds best suited for different localities, the report of the Committee of the National Apple Congress held in the Royal Horticultural Gardens, Chiswick, in October, 1883, gives valuable information. I find Wales was almost unrepresented, but Cheshire exhibited 336 kinds. A few extracts from that report as applied to the county exhibits may not be inappropriate here. Mr. Bancroft of Audlem exhibited a collection of fruits, reported to be somewhat small and deficient in colour, many being unknown, probably of local unnamed sorts. The exhibitor remarked that they had been grown on old standards grafted on stocks raised chiefly from Apple pips. Mr. Bancroft mentioned that to his personal knowledge ten distinct varieties were all called John Apples. There is work evidently for the Pomological Society there. The next exhibit noticed is that of Messrs. F. and A. Dickson & Sons, Chester, who sent an exhibit of 100 varieties. The observations read—"A remarkably fine collection, the examples large and well grown." The exhibitors remarked that the specimens shown had been gathered from bush and pyramid trees, from three to six years old, grafted on the Paradise stock. The situation open, fully exposed to the bleak cutting winds blowing right across from the open plain extending to the Welsh coast. Messrs. James Dickson & Sons exhibited an interesting collection half gathered from trees worked on the Crab, the other from those on the French Paradise. There were other exhibits from the county, including a splendid collection of sixty-seven varieties, exhibited by Mr. Selwood, gardener to His Grace the Duke of Westminster at Eaton. Mr. Selwood remarked that most of the dessert varieties were grown on espaliers, the others on bush trees seven years old. This is a good Apple, distinct, and a crop more or less can generally be depended upon. In the census I find the following varieties were recommended in the order given as dessert Apples best suited to the district—Irish Peach, Blenheim Pippin, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Adam's Pearmain, whilst other kinds, including Mr. Gladstone, came in for half the number of votes—this remark has of course no political

significance. In culinary Apples I find Lord Suffield heads the list, followed by Cellini, Dumelow's Seedling, Keswick Codlin, Alfriston, Ecklinville Seedling, Golden Noble, Warner's King, and Winter Hawthornden.

In the poll taken for the whole of Great Britain the varieties are placed in the following order—Dessert Apples: King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Pippin, Irish Peach, Devonshire Quarrenden, Sturmer Pippin. Culinary Apples: Lord Suffield, Dumelow's Seedling, Keswick Codlin, Warner's King, Blenheim Pippin, Winter Hawthornden, Cellini, Ecklinville Seedling, Stirling Castle. The Editor remarks that whilst the returns are valuable, as showing the extent of appreciation in which certain varieties are held throughout the country, they cannot be accepted as complete and reliable lists, inasmuch as many excellent varieties of Apples are comparatively unknown in certain localities, and are therefore placed lower down the list than their merits deserve. The most popular Apple was Lord Suffield, having received 101 votes out of a possible 130, King of the Pippins standing next with ninety-eight. The most popular dessert Apple in England is Cox's Orange Pippin, but it is evidently not so well known in or so well suited for the colder climate of Scotland. The list of synonyms given in the report is also most interesting and instructive, but we need not enter upon that subject just now.

Speaking from the experience gained in the immediate district, there are about thirty varieties of Apples which are in demand greatly in excess of the rest. For Lord Suffield the present demand is practically unlimited, and this is closely followed by Blenheim Pippin, Ecklinville, Stirling Castle, Cellini, Maltster, Cox's Pomona, Warner's King, Alfriston, and others; whilst of dessert kinds Cox's Orange Pippin, Irish Peach, King of the Pippins, Worcester Pearmain, and Ribston Pippin hold the lead. Two varieties, Frogmore Prolific and Lane's Prince Albert, are likely to become favourites, as there is a marked increasing demand for them. Trees trained as pyramids are in strong force just now, and with careful management are effective and profitable. Unless orchards are laid down as pasture for grazing, standard trees, with stems not more than $3\frac{1}{2}$ to 4 feet, are preferable to the tall-stemmed trees very commonly planted.

THE PEAR.

The cultivation of the Pear is of much more moment commercially than has been apparently realised. In the older orchards we find Catherine Pears, red and white (called commonly "Cattens"), Hessele, Green Chisel, and Swan Egg, but very few of the better Pears are properly grown and carefully gathered for market. Amongst the better kinds suited to this district are Beurré d'Amanlis, Doyenné d'Été, Jargonelle, Williams' Bon Chrétien, of the early varieties; Beurre Superfin, Glou Morceau, Louise Bonne of Jersey, Marie Louise, Winter Nelis, amongst the mid-season varieties; and Bergamot d'Esperen, Beurre Rance, and Easter Beurre of the later kinds. I have amongst my memoranda a note of a crop of Beurre d'Amanlis grown in the open orchard within a few miles of Chester, having realised last season 3d. per lb. whole sale. In the same orchard the better class Pears are grown both on pyramids and standards of quality equal to any Pears to be found from the southern counties, or even Jersey.

Of Plums very few varieties are found to do satisfactorily as standards in this locality. Victoria, Pershore, and Denbigh Seedling are amongst the best, Victoria being the most reliable of all. I visited a fruit orchard a few days ago where the trees are so laden as to be unable to carry the fruit, and the proprietor informed me that his trees of this variety never fail him. Two years ago the demand for Pershore Plum was so great that I believe the stock of every nurseryman in the kingdom was exhausted. For Damsons we are here in the centre of one of the best of districts, but Cherries are not grown as they are in the southern counties. Two years ago I walked over the home farm of private gentleman in the southern counties, and he showed me a Cherry orchard which he had just planted of 200 acres.

Cherries grew on the trees whilst sheep were pastured on the farm. Shortly afterwards, in a neighbouring county, I found an orchard of Walnuts containing something like 400 trees, the property, too, of a private grower. Besides all these we have Apricots, Peaches, Nectarines, Nuts, Mulberries, Chestnuts, Crabs, Barberries, and other fruits, which we must leave for some other time.

(To be continued.)

EARLY-FLOWERING CHRYSANTHEMUMS.

"WE have another dinner party, and there is hardly a white bloom of any kind left. Can you send me a few of those early

white Chrysanthemums you were speaking about? I have no white flowers left at this dull time." So wrote a gardener to me the other day whom I had visited a few weeks before, and where I admired the contents of the numerous stoves and green-houses under his charge, mostly filled with choice Orchids and a thousand other plants. I was informed the family was away, or else I should not have found such a display of bloom at that time of the year. It is when the families return home after their summer tours, and commence giving entertainments and exchange congratulations, that gardeners find their resources so sorely tried, especially at this season. When I first spoke to this gardener on the subject of early Chrysanthemums, I am afraid there was rather a feeling of contempt for what are so generally looked upon as "common." Some remark that that they are dirty looking, others that they seem out of place so early in the season, but I am pleased to find many have recognised their mistake, and have only been too glad to grow a quantity of such varieties as Madame C. Desgrange, Mrs. Cullingford, and La Vierge. These early-flowering Chrysanthemums are the most useful plants that can be grown during the months of September and October, when there is no doubt that gardeners find it difficult to meet the demand for cut flowers. Chrysanthemums go a long way in decorating, and greatly relieve the pressure upon more valuable plants, to say nothing of the long time they remain fresh; a bloom, for instance, of Madame Desgrange can easily be kept upon the plant for three weeks, and then last for ten days in a cut state.

It is fifteen years since I commenced a collection of these early-flowering Chrysanthemums with a view to keep up a display of bloom in the herbaceous borders. They were certainly not very inviting for cutting or for the conservatory, but a great improvement has been effected since that time. Then we only had the small Pompons, and could not boast of a really pure white; now we have many white varieties as pure as can be desired. The first improvements that came into notice were St. Mary and Sœur Melanie, both very free and quite white. The former is a very early bloomer, opening as early as May, and giving three distinct crops of flowers during the season; the latter is an October variety, and has been often noticed in these pages. After these came Madame Jolivart, an excellent variety both for habit and freedom in flowering, but it is only pure white under glass. Quickly following these introductions came Madame C. Desgrange and La Vierge, without doubt the two most valuable white varieties known up to the present time. The former was introduced about eleven years since, but was not much admired until five or six years ago. Even then it was generally described as a loose white flower with yellow or green centre. Whatever it was then, it certainly is a pure white flower now if well cultivated and bloomed under glass or canvas. As a market flower it is more valuable than Elaine, having a lighter and more attractive appearance, but it does not come into competition with Elaine, as it is fully two months earlier. Flowers of Madame Desgrange, too, are far superior to white Asters, and give four to six times the number of blooms for the same space and labour. La Vierge may be described as a much-improved Sœur Melanie, only rather earlier. It is a medium-sized reflexed flower, opening its blooms early in October, thus connecting the link between Madame Desgrange and the earliest of the late varieties, such as Lady Selborne and Elaine. With such very late varieties as Princess Teck, Miss Maréchaux, Mrs. Carey, and others, we now have pure white Chrysanthemums quite eight months out of twelve. Other fine white early Chrysanthemums are Mrs. Cullingford, a very fine white hybrid Pompon, a variety raised by Mr. Alfred Salter. Equally as fine as a garden flower or for the conservatory are White St. Crouts, Virginia, and La Niège, the latter a late October variety.

Turning to the coloured varieties, I need only say that as great improvements have been effected in these as in the whites. I will mention a few of the best—Lyon, a very fine purple flower, one of the very best; Anastasio, light rosy purple; Flora, very fine yellow, replacing Precocite; Filberta, fine yellow; G. Wermig, the new yellow sport from Madame Desgrange; Frederick Marronet, a bronze Pompon; Mons. Pynaert Van Geert, a beautiful Japanese, yellow striped bright red; Nanum, blush white; La Petite Marie, white with yellow tint, exceedingly dwarf; Isidore Feral, a Japanese flower, rosy lilac and golden centre, very fine; and Alexandre Dufour, a very fine medium-sized Japanese, bright purple, late October variety. The whole of the varieties mentioned in these notes, except Nanum, are introductions of the past twelve years. They do not comprise all the best sorts, but outside the enthusiast, the whole of the previous introductions might well be swept away. There are several new varieties of the present season very promising, but it would be well to reserve mention of them till further trial. There is one,

however, which might be noticed, as it will most surely become one of the most popular of all—Blushing Bride, a splendid new acquisition, and the first in the early section at all approaching to the incurved form. The flower is something in the way of Miss Hope in the late Chrysanthemums. I have only been able to get weak plants of it this season, but they have been one mass of flower. I enclose specimen spray, perhaps the Editor will give an opinion upon it. I also have pleasure in adding blooms of a few other varieties, notably Madame C. Desgrange and its golden sport, which I regard as a most valuable acquisition, and congratulate Mr. Wermig upon fixing such a sport.

In conclusion, I would like to point out that the varieties denoted in this article as early Chrysanthemums are all really free flowering summer and early autumn varieties. I have seen varieties occasionally mentioned that have not the least title to being classed in this family, being merely the result of propagation from stem cuttings, which may be said to have the buds in them before struck, but they only produce the one bloom as a rule, and then either die or grow on till their natural time. Most of the new introductions from France bloom prematurely the first season unless the buds are pinched out. I find they are chiefly struck from stem cuttings, and hence the reason.—N. DAVIS, *Chrysanthemum Nurseries, Camberwell.*

[Accompanying this communication was a beautiful collection of flowers, which fully bears out all that Mr. Davis has said in their favour. They are most useful plants, and are extremely welcome at this season either in borders or in pots for the conservatory, while their abundant flowers form a welcome addition to the supply. The variety Blushing Bride is a charming one, the flowers $2\frac{1}{2}$ inches in diameter, the florets slightly cupped, and the colour a delicate pretty rosy purple tint, fading to nearly white in the centre. It also appears very floriferous. Salter's Early Blush, also a pleasing variety, has flatter florets of a more uniform lighter pink; Anastasio, small flower, but very free, though of sturdy compact habit; Lyon, an extremely hardy useful purple variety; Surprise is a new early Pompon with small neat pink flowers; Frederick Pele, an old but useful rich crimson-coloured variety; Flora, rich yellow, very free and valuable for bedding; La Petite Marie, a very dwarf bedding variety, the whole plant not exceeding 10 inches in height, with small neat white or yellow tinted flowers; Mrs. Cullingford and White Crouts are meritorious white varieties, but the specimens of Madame C. Desgranges sent are superb, pure and substantial, as well as the light yellow sport, G. Wermig, which is a fine companion for it. Bouquet National, an early rosy purple Japanese, and M. Pynaert Van Geert, bronzy yellow, of similar character, are also two charming varieties.]

JUDGING GRAPES.

I wish to add a supplementary testimony to Mr. Iggulden's sensible remarks on the above subject. Want of time must be my apology for not doing so sooner, as I quite agree with him regarding the present system of judging Grapes at the various fruit and flower shows I have had the privilege of visiting this season. At one held in this neighbourhood on the 3rd inst., forty-two bunches of Grapes were staged, and not a single berry was taken off them by the Judges—appearance alone carried the day. In the class for four varieties, one bunch of each, a good even collection in fair condition was set up, consisting of Mill Hill Hamburgh, Madresfield Court, Muscat Hamburgh, and Muscat of Alexandria, against which were staged Cooper's Black, Alicante, Gros Colman, and Muscat of Alexandria, for which the first prize was awarded. In the class for two bunches black, any variety, Cooper's Black was again awarded the premier prize against two well-finished bunches of Muscat Hamburgh, one of the best flavoured Grapes in cultivation, and not the easiest to finish either, whilst Cooper's Black, although a showy Grape with a splendid bloom, is, nevertheless, one easily brought to perfection, yet is not fit to send to table for at least two months after being apparently ripe. Alicante and Gros Colman are not September Grapes, and one might ask, Are Grapes intended for desert or are they to be sent to a gentleman's table like a bouquet of flowers, only to be admired? Let a dish of Black Hamburgh, Madresfield Court, Muscat Hamburgh be set on the dinner table against the three varieties already referred to, and we should soon see which dish would be cleared first. I hope this matter will be taken up by competent writers, so that honest competition shall have its just reward, and when the time comes for judging Grapes at our local shows, men will be appointed to adjudicate who will not give all the preference to appearance, but taste and see which is best.

Just a word on that noble Grape, Madresfield Court. I have frequently read that its great defect in the hands of some cultivators is splitting just as it approaches maturity, some assigning one cause and some another, such as keeping the roots too damp, not allowing the laterals to extend, &c. Now, I have grown it for the last eight or nine years, planted in an outside border, where, of course, it gets a due share of rainfall, and in dry weather as much from the watering can as any other variety, with the laterals removed the same as others, and I have never had cause to find fault with it for splitting when watering and

ventilating were duly performed. I would, therefore, advise anyone troubled with berries splitting to crop fairly, thin the bunches liberally, keeping a moderately dry atmosphere with plenty of ventilation while colouring, and we shall soon hear less complaints about one of the finest Grapes in cultivation.—R. R., *Belfast.*

If Mr. Iggulden's ideas on judging Grapes are to be held as correct, and to be acted upon, then all our fine late Grapes should never be shown at any autumn exhibition. This would not be subject of regret if there were more shows held in winter and early spring, when all such varieties as Gros Colman, Alicante, Lady Downe's, &c., would be at their best; but until there are more shows at that time of year, it surely may be permissible to exhibit such kinds as aforementioned in autumn rather than not show them at all.

If Mr. Iggulden's advice be acted upon, our shows will be robbed of many fine-looking samples of late Grapes, which, although not arrived at their perfection as regards edible qualities, can be shown in such a style as proclaims to all who know anything about them that time alone is needed to see them at their best every way. Let special shows be held throughout the country where late Grapes can be shown in season, and then there would be no excuse for exhibiting them in early autumn. There are many shows held in March and April, but that is rather late to have the bulk of late Grapes seen to advantage. Let there be exhibitions in, say, February, and a good display could be made. Of course, Lady Downe's attains its best quality in March, but, taking one kind with another, February would be a better time to see late Grapes shown in edible condition.

I only support "Judges in their preference for colour rather than ripeness" when size of bunch and berry and perfection of bloom are combined with it; when these are found in a late Grape—which only requires a little more time to make it fit for table—I fail to see why it should be passed over simply because the show is held at a time that suits some other varieties better. Unless late Grapes be entirely excluded from autumn prize lists there appears no other course open for judges than to make allowance for want of edible quality in late varieties when other essential points of good quality are conspicuously displayed.

Mr. Iggulden thinks I miss a point when he refers to the sacrificing of late Grapes at autumn shows. There are many Grapes shown, both late and early kinds, which never appear, or are intended to appear, at the employer's table. Where well served, most reasonable employers do not grudge the cutting of a few bunches not quite fit for the dessert table, when they are made to understand that no other convenient opportunity of exhibiting them can be had. I speak of those gardeners who make showing only secondary to their employers' interests, and grow a crop, not a special few. In the latter case a long-suffering employer could hardly be expected to allow the "select few" bunches to be cut at a time, when, for after use at the dinner table, they are comparatively quite unfit. I would never advocate the placing of "really good Madresfield Court" third to "two lots of only fairly good Alicantes." I only advocate placing "extra well grown Alicante" before Madresfield Court when the latter is not shown in its best form. Mr. Iggulden admits that he would do this himself. What comes of his theory about Alicante not being admissible at all at shows held in August or September, when he makes this admission regarding "extra well grown Alicante?"

There is no other way out of the difficulty than either banning late Grapes altogether from early autumn shows, or else allowing the judges to weigh all other points and make allowance for the late kinds being wanting in edible qualities through want of time. "A Young Exhibitor" asks, Why should Madresfield Court "be passed for Grapes less fine in berry, less in weight, less noble in appearance, and lacking in flavour?" He may well ask, "Why?" So would all Grape-growers, I think. Any judge who would pass Madresfield Court, superior to any other kind in all the points mentioned, would deserve to be severely taken to account. Surely such cases are rarely to be met with?—S.

THE PRIMULAS.

In view of the Primrose Congress to be held at South Kensington early next year by the Horticultural Society I have thought it desirable that a list should be published of the Primulas known to be in cultivation, both European and Asiatic, &c., and which may in a measure tend to further the ends of the Congress by enabling growers or intending exhibitors of these beautiful alpine flowers to judge of the numbers in cultivation, and also to interest themselves in getting their plants named correctly. Many are of opinion that such a Congress is undesirable from the fact that very little, if any, confusion exists among them, and that other plants are more in need of comparison. The latter is by far the best argument, but as Primulas are extremely popular garden flowers the Congress will be as welcome next year to those specially interested as it would be later; besides, it is much easier to deal with slight confusion than to unravel what would be very great confusion a dozen years hence, especially when we note the rate at which these plants are imported from the Continent and plentiful but similar forms made to supply the place of the rarer ones. Mr. Baker of Kew and Mr. Lynch of Cambridge have been deputed to draw up a list, but as that will simply be a classification of the European species without cultural details it will in no way interfere with my present plan. In the paper referred to attention will be given chiefly to the type species, and which will form a foundation

on which *Primula* reformers will have to work. Only the most distinct varieties will be included under their respective heads.

My purpose will be to follow Mr. Stein's plan, inasmuch as I shall give both natural and artificial hybrids a separate place, reserving space at the end for a classified key to the whole. Stein, Gusmus, Obrist, Kerner, and others have given considerable attention to the cultivation and determination of natural hybrids by testing artificially and proving exclusively the types or varieties employed by Nature in the production of any new hybrid, and to them we are also indebted for the introduction of many of the fine kinds at present beautifying our rockeries and gardens. The "Genera Plantarum" gives between seventy and eighty distinct species, but many new ones have lately been added to this, and a hundred will now be near the total. Of course this number necessitates many of the plants we consider as species being reduced to varieties; and although it be true that between some of our supposed species links in the shape of varieties may be traced to fill up the whole chain in a botanical sense, many of the intermediate forms are distinct garden plants, and in the latter sense may be said to be as far apart from the two extremes as they are from each other, and quite worthy of distinct names.

The majority of the *Primulas* grow freely in the open rockery. A few, however, will hardly give entire satisfaction unless grown in pots, a system entailing too much trouble to a great number of hardy-plant enthusiasts; but the same difficulty is experienced on the Continent, the home of the European Primroses, and in addition to those planted on the rockery a collection is kept in pots simply stood on beds of sand and protected only from heavy rains in winter. The latter give more satisfaction than those planted out, and this applies not only to *Primulas* but to all true alpine plants; and although I do not advocate growing our collections in pots, it is well to bear in mind that it can be tried for all plants that are difficult to flower or even to grow on the rockery in the open air.

In cultivating *Primulas*, whether in pots or on the rockery, a supply of small stones is essential. I use limestone and hard granite, and a good general rule we adopt, with fair success, is to wedge all the hard-leaved ones, such as *spectabilis*, *calycina*, &c., in the granite, and the soft-leaved species, such as *viscosa*, *ciliata*, &c., in the limestone. In potting or planting the pieces of stone should come as far up the "collar" as possible, adding others as the plants grow, and when roots will be found to have formed above the stones. They must have free drainage, and the pots must be plunged to insure a cool bottom for the roots. Plenty of water is required during the growing and flowering seasons. When planted out a position should be chosen on slopes, or in such a way that no damp will lodge near the neck. Most of them are easily increased, the types by seed and the others by division or by taking off the little side shoots that will have been produced during the growing season.

P. marginata strikes readily from cuttings, as also does *P. auriculata* and others, simply preparing the side shoots, and putting them in pots as practised in the case of other hardwooded plants.

To avoid confusion in the authors of names, as they will be abbreviated, it seems necessary to give a list of them in full, with their abbreviations, particularising only those writers who have been specially engaged in the determination of hybrids, &c.

Loisl. ...	J. L. A. Loiseleur	Porten. ...	F. Portenschlag
Schleich. ...	J. C. Schleicher	Led. ...	G. F. Ledebour
Lehm. ...	J. G. C. Lehmann	Cart. ...	Curtis of Bot. Mag.
Torr. ...	J. Torrey	Ldl. ...	J. Lindley
Jaub. & Spach.	Jaubert & Spach.	Mchx. ...	A. Michaux
L. ...	Linnaeus	A. Gr. ...	Asa Gray
Lam. ...	J. Lamarck	Pet. ...	V. Petagna
Kern. ...	A. J. Kerner	Thom. ...	E. Thomas
Dene. ...	J. Decaisne	Tratt. ...	L. Von. Trattinick
DC. ...	De Candolle	Forsk. ...	P. Forskahl
Rech. ...	H. L. Reichenbach	Vill. ...	D. Villars
Jacq. ...	N. J. Jacquin	Huds. ...	W. Hudson
Jacqm. ...	V. Jacquemont	Pall. ...	P. S. Pallas
Tsch. ...	I. F. Tausch	Petrn. ...	W. L. Petermann
Sm. ...	Smith	Gaud. ...	J. F. Gaudin
Wall. ...	N. Wallich	Jungh. ...	P. C. Junghaus
Willd. ...	C. L. Willdenow	Hook. ...	Sir W. Hooker
All. ...	C. Allioni	Hk. f. ...	Sir J. D. Hooker

Others that will be used in the course of the series will be written in full. Those interested in the work of determining hybrid *Primulas*, and who give special attention to it, are Dr. A. J. Kerner, Professor of Botany in the University of Vienna; he has long been interested in alpine plants, and particularly *Primula*. He recently published a paper in German (which has been translated by Mr. Bennett) on the origin of the garden *Auricula*; he is still engaged in the work, and is considered a reliable authority. M. B. Stein, who cultivates crosses and determines the plants, is Inspector of the Botanic Gardens, Breslau, an enthusiast in hardy plants, as indeed are most of the inspectors of continental public gardens; he also has published in German a good list of the *Primulas* in cultivation in Europe with their synonyms, which should be in the hands of all

intending exhibitors. M. Rupert Huter of Sterzing is a botanical collector, chiefly in the Tyrol; he, however, works most with dried collections, supplying herbariums, with rare specimens.

Obrist and Gusmus are both extensive collectors, the former being also an enthusiastic cultivator; the latter collects living plants, supplying the trade, &c.

P. ALPINA, *Schleich.*—A hybrid between *P. superauricula* and *P. viscosa*, *Stein* (Syns., *P. rhætica*, *Koch*, and *intermedia* of gardens). It is a very handsome plant, found at elevations of from 6500 up to nearly a thousand feet in the Grisons. It is a quick grower, and does well with us on a rocky slope or wedged between hard stones in pots. It rarely exceeds 3 or 4 inches in height; the flowers nearly, or often more, than an inch in diameter, are of a very brilliant violet purple, and extremely handsome. It partakes more of the character of *P. Auricula* than it does of *viscosa*, and which predominance the whole plant shows clearly at a glance. The leaves are much smaller and narrower than those of the *P. Auricula*, smooth, slightly glazed, and with an entire absence of meal dust so conspicuous in that species; they are covered on both sides as well as the margins with a short minute pubescence, are obovate in shape, but again broadening towards the base, and where they clasp the stem the upper half is irregularly and sparingly notched. It flowers a little later than *P. Auricula*.

P. ALLIONII, *Loisl.*—This is a gem among *Primulas*, and next to the common *P. minima* one of the prettiest of the dwarf section. It prefers soft porous limestone to all other kinds, and in preparing soil, a third of sphagnum should be finely chopped and mixed with it, together with broken mussel shells. A south-east exposure seems to suit it best; and as it is inclined to grow saucer-shaped, it should have a semi-perpendicular position, as a double safeguard against moisture remaining stagnant among the leaves or near the collar. It is a slow grower, and so compact do the crowns keep together, that the individual plants look like so many dark green balls stuck in



Fig. 43.—*Primula Allionii*, *Loisl.* [From Reichenbach's "Flora Germanica."]

the rock. It is, perhaps, the rarest of the old species, which is rather surprising, from the fact of its being so easy to cultivate. The flower scapes carry generally one, but sometimes two and three large rosy purple flowers, as in *P. minima*, covering the entire plant. They are about an inch in diameter, with slightly indented petals; the calyx is nearly globose in outline; the sepals are ovate and blunt, quite covered with a fine glandular or clammy pubescence, as well as the leaves. The leaves are obovate, gradually tapering to a short petiole, and slightly crenated. Native of Piedmont. Flowers April and May. Syn., *glutinosa*, *All.* The plant is shown of its natural size in fig. 43.

P. ALTAICA, *Lehm.*—An acaulescent plant nearly allied to the common Primrose of our meadows, indeed almost too near to be separated as a species, but as the characters are constant it may save confusion if kept distinct. It was introduced to our gardens by Mr. Darbishire of Rivington, who is said to have found it growing on grassy land in the neighbourhood of the Black Sea. Its only fault seems to be its tendency to flower too early and before our severe weather is past, the flowers being completely destroyed in exposed situations. When planted out as an edging in the conservatory it is very beautiful, cheering the dull days of winter with its rich purple flowers and distinct bright yellow eyes. They are borne singly on stalks direct from the crown, and from the centre of the leaves, as in our native one. The leaves seem to be more robust, and of a slightly different veining. Syn., *P. undulata*, *Fischer*, *P. nivalis*, *Turtshch*, *P. longiscapa*, *Led.*, and figured in "Pact. Mag.," 16, 194.

P. ARCTOTIS, *A. Kerner.*—A hybrid between *P. subauricula* and *P. hirsuta*. The leaves are broadly ovate, deeply serrated to where they taper at the base, densely covered with tiny glandular hairs on both sides, forming rosettes as in *auricula*, but with the shrubby-like habit of *P. marginata*. It grows well wedged between pieces of granite on an east exposure; and is to all appearance a shy flowerer. I have never seen it in flower.

P. AUCHERI, Jaub and Spach.—A very rare and little known *Primula*. The flowers are produced in whorls, as in our well-known *P. verticillata*, about a dozen in each whorl, lovely purple, and surrounded by leaf-like bracts with sharp serratures; the sepals are narrow and pointed, much shorter than the long slender tube; leaves lanceolate, gradually tapering to the petiole, reticulated with notched margins, and alternate only on the shrubby stems. It flowers in May.

P. AURICULA, L.—The Bear's Ear or Canary-bird Primrose—the latter name being very characteristic of the typical plant—is, next to our own native *Primula*, perhaps the best known in gardens of all European kinds. *P. Auricula* has until lately been considered the sole parent of all the curious and beautiful Show, Fancy, and Alpine Auriculas grown in gardens at the present day; and judging from general appearances, the long-held impression carries considerable weight with it, even after Prof. Kerner's paper. Prof. Kerner, after a long and careful study of the subject, attributes the origin of the garden Auricula to *P. pubescens* of Jacq., a species the type of which has hitherto been very little known in gardens, and certainly has never been in general cultivation. It was first gathered by Clusius of old in the Tyrol, and at that time introduced, little or nothing being heard of it again until found by Prof. Kerner in 1867 on the Innsbruck Hills. For such a conclusion Kerner must have had strong reasons, but we are rather inclined to the belief, all things considered, that *P. Auricula* has played a very prominent part in the history of garden Auriculas if not in their origin. Mr. Baker says, "It seems to me quite impossible to take a walk through any Auricula show, with this *Primula pubescens* in memory, without feeling that Prof. Kerner's paper is very far from having exhausted the whole subject. My own view is that a very large proportion of our garden Auriculas are nearer to *P. Auricula* than they are to *P. pubescens*, and that the garden Auricula of the present day is the product of a complicated series of intercrossings, of which *P. Auricula* has been the main groundwork, and into which *P. Balbisii*, *P. venusta*, and *P. pubescens* have also entered." Let us bear in mind that *P. venusta* is *P. Auricula* × *P. carniolica*. *P. Balbisii* is nothing more than a variety of *P. Auricula*; and *P. pubescens*, according to Kerner's own showing, is *superauricula* × *hirsuta*, and it will not be hard to understand the justice of Mr. Baker's remarks. Prof. Kerner, however, proves one thing conclusively—*i.e.*, the tale that the Auricula of the Alps changes its colour under cultivation; but when he says that the dusty English Auricula is the produce of *P. pubescens* fertilised with *P. Palinuri*, the latter reminding one more of a Cabbage than a Primrose, we confess to be drawn back to our starting point, *P. Auricula*. This subject will no doubt be thoroughly threshed out at the Conference, where every facility will be given for a fair judgment on seeing the various races of Auriculas, both mealy and Alpine, staged side by side with those said to have played a prominent part in their origin. As far back as 1629 Parkinson enumerates no less than twenty varieties of Auricula, and for want of better names were known as Great White, Lesser White, and so on, a violent contrast to the high state of perfection of these days. Auriculas at the present time are more popular, and are held in higher esteem by the public than they have been at any other time in their history, and deservedly so, for no plant shows the skill of the cultivator and the importance of careful selection more strikingly than the Auricula. Auriculas are divided into two great groups, with mealy and unmealed centres, and termed respectively Show and Alpine varieties.

P. Auricula, the type according to Obrist, has no smell whatever in a wild state, although its fragrance is one of its chief attractions under cultivation. It varies according to the locality in which it is found growing, sometimes being found with the leaves quite green or only slightly mealy, and at other places they are completely covered with a fine powder. The leaves are fleshy, succulent, nearly obovate in outline, with almost entire or deeply serrated margins, generally about 2 inches long; the flowers are produced on stalks from 3 to 6 inches long, in umbels, generally from six to twelve-flowered, but Stein says often more than fifty; they vary in colour from light to dark golden yellow. It is extremely easy to grow, and will do almost as well in the ordinary garden border as in the rockery, providing the soil is well drained and not too heavy (this will apply to all the Alpine section). We succeed best with it, however, on a stony bank having a west exposure, and where it receives plenty of water all through the summer months. The Alpine varieties do exceedingly well on the rockery, and a pretty show they make in the early spring with their ever-welcome flowers, ranging in colour from red through all the shades of purple, violet, yellow, &c., some being self-coloured, others having variously tinted throats or eyes. They are natives of the Alps of Central Europe, from Dauphiné to Transylvania.—D.

(To be continued.)

WHINHAM'S INDUSTRY GOOSEBERRY.

On pages 252 and 253 of last week's Journal you gave a description and plate of the above, but not a correct account of its origin. It was

raised at Morpeth in Northumberland by the late Mr. Robert Whinham, nurseryman, &c., about forty-two years ago. Mr. Whinham left Morpeth for America about fifty-five years ago, but not being successful he returned to Norfolk ten years later, his family keeping the nurseries on during his absence. He succeeded in raising the above about 1843, and being personally acquainted with him I saw it growing and bearing about 1847. He sent it out, but only in a small way, about 1850 at 1s. each, but it made little progress for some years, though now there is about 90 per cent. of it growing in this neighbourhood. I myself have four acres of it, about 4000 bushes. It is not uncommon to pull a net-basket, 56 lbs., off a bush eight years old; in fact, I have pulled 84 lbs. off a bush. Mr. Whinham died at Morpeth about twenty-five years ago at eighty years of age, having, with the exception of the ten years he was in America, lived all his life at Morpeth, so it is impossible it could have been raised in Lancashire. It is of a very robust constitution, making a bush in half the time of almost any other variety of Gooseberry. I have some two years old now that have made shoots 30 inches long this season, dry as it has been.—G. C.



WE learn that the OFFICIAL REPORT OF THE COMMITTEE OF THE ORCHID CONFERENCE, held at the Royal Horticultural Society's Gardens at South Kensington on the 12th and 13th of May, 1885, will be issued in October next. This report in book form of octavo size, and containing about 150 pages, will be distributed to all Fellows of the Society as a number of the Journal, and it will embrace:—1, A report of the proceedings at the Conference, including a paper read by Mr. H. J. Veitch, F.L.S., on the Hybridisation of Orchids, with illustrations, and a paper by Mr. James O'Brien on the cultivation of Orchids. 2, Botanical and horticultural reports by Henry N. Ridley, Esq., B.A., F.L.S., Natural History Museum, South Kensington, and F. W. Burbidge, Esq., F.L.S., Trinity College Gardens, Dublin. 3, An alphabetical list of the genera of Orchids. 4, A catalogue of exhibitors and exhibits.

— FUNGUS ON SWEET WILLIAMS.—This season we have had a number of plants of Sweet Williams infested with a dark fungus which occurs in abundant patches on the foliage. Dr. M. C. Cooke determines this to be *Puccinia Dianthi*, a not uncommon fungus, but peculiar in this case, as it only attacked the plants from one packet of seed, the other plants in the garden and quite near them having escaped injury.

— A NEW edition of Mr. A. Graham's GUIDE TO HAMPTON COURT has just been issued, and contains in the sixty pages much interesting and useful information respecting the Palace and Gardens. The first part is devoted to general particulars and history of the Palace, the second dealing with the horticultural features. In the latter a list of bedding plants is given, with hints upon their culture and propagation, a number of tasteful diagrams of beds with methods of planting accompanying this portion, a descriptive list of the beds at Hampton Court for the present season being also given. The Guide can be obtained direct from Mr. Graham, post free one shilling.

— MR. J. W. MILLS, Minterne, sends the following note on POTATO PRODUCE:—Having planted sixteen eyes I took from two Potatoes weighing half a pound (The Flounder), the produce from the above was 75 lbs., all sound and good when taken up. The largest Potato weighed 2 lbs., six of the largest 9 lbs. They were laid exposed to the air, and are now turned green. Some few of them have taken the disease since being lifted.

— "W. D." considers that "PEARS IN POTS should, in our uncertain climate, have more general attention, and this is apparent when looking at 300 well grown Pears in pots at Harefield Grove just now. Buerré Clairgeau is very fine, and Buerré de l'Assomption, Doyenné du Comice, Pitmaston Duchesse d'Angoulême, Louise Bonne de Jersey, Marie Louise d'Uccle, Buerré d'Amanlis, and Buerré Superfin are fruiting freely with fine clean fruits, and are varieties for amateurs to start with."

— "T. H." sends us an extremely handsome bloom of CHRYSANTHEMUM MADAME C. DESGRANGES, which in size, substance, and purity is equally as fine as Elaine. The bloom sent was 5½ inches in diameter with broad, pure white florets, and Mr. N. Davis has also sent us some nearly as large.

— MR. J. GODDARD of Fulham has recently on several occasions exhibited at Kensington samples of a PATENT CLIP OR HOLDER that will prove useful in many ways to amateurs. In the words of the patentee, "It is designed to hold together two or more pieces of glass, slates, or other suitable material to form a protection from sun, wind, &c." The clip is simple and ingenious in construction, consisting of a screw which passes through a triangular pad that can be removed when desired, and by means of one or two of these clips two sheets of glass can be firmly secured in position to form a small span handlight, or four will hold five sheets of glass as a flat-topped handlight. It will be found useful in many ways, as the screws can be very readily removed.

— GARDENING APPOINTMENT.—Mr. John Cameron, outside foreman at Melville Castle, Lasswade, has been appointed gardener to H. Fryder, Esq., Westbrook Hay, Hemel Hempstead.

— THE monthly meeting of the BELGIAN HORTICULTURISTS was held in Ghent on the 14th inst., when the following members of the Jury were present—MM. Fr. Desbois, V. Cuvelier, Edm. Vervae, Ch. Spae, Em. de Cock, and Charles Van Geert of Antwerp, M. Auguste Van Geert, senior, presiding, and M. Ad. Rosseel being Secretary. Certificates of merit were awarded for the following plants—*Cypripedium* species from M. A. Van Geert, senior, *Tradescantia albo-vittata* from M. E. Pynaert Van Geert, *Dracæna australis variegata* from MM. Desbois et Cie.; *Cypripediums Petri*, *Tonsum*, *œnanthum superbum*, *albo-purpureum*, *tesselatum porphyreum*, and *selligerum majus* from M. Jules Van Heye-Leysen; *O. ontoglossum facetum* from MM. Vervae et Cie., *Rhus Cotinus pendula* from MM. Dervae freres, Wetteren; *Pavonia intermedia* and *Abutilon chrysostephanus* from MM. Desbois et Cie., *Gymnotheca Rad-diana crenata*, *Piper ornatum*, and *Arenga Kasarinei* from M. Aug. Van Geert, and double Tuberous Begonias from M. Louis Van Houtte. Honourable mention was accorded for *Rondeletia speciosa* from M. Ch. Spae, *O. ontoglossum grande* from M. James Bray, *Anthurium Chantieri* from M. Desmet-Duvivier, *Dracæna Madame Ad. D'Haene* and *Adiantum Legrandi* from M. Ad. D'Haene, *Bollea* species from MM. Vervae et Cie., *Pescatorea* species from M. Desmet-Duvivier, and single Tuberous Begonias from M. Louis Van Houtte.

— IN the majority of CATALOGUES issued by nurserymen and seedsmen at the present time the literary merit is considerable, and the accuracy of the names is very commendable. We have, however, a curious example of an opposite character before us, which indicates some singularly erratic notions respecting plant nomenclature. *Iris Geamania* can be recognised without any difficulty as *Iris germanica*, but *Iris Susannah* requires a moment's reflection before *I. susiana* is suggested, and we might equally ponder over *Iris Tuber Roses* for *I. tuberosa*. *Scilla Peacocks*, *Bella Donna mina*, and *Spierie Japonica* are slight wanderings which may be forgiven, but the genus which has evidently most severely taxed the powers of the compiler is the *Fritillaria*. This we first find as *Frittalara*, which narrowly escaped being correct; a little further we come to *Frittelaria Meligus*, which apparently did not give perfect satisfaction, for it is ultimately developed into *Frittelaria*. This is slightly confusing, and it is hoped that it will be found convenient in the next issue to adopt a uniform mode of spelling such names.

— REFERRING to *OMPHALODES LUCILLÆ*, "J." writes—"I am pleased that "C. R." has called attention to the protector for this choice alpine; it had slipped my memory at the moment when writing, and does not differ materially from that described by your correspondent. The first of these I ever saw in use was in Mr. Whitehead's garden at Bickley, and was composed of a small band of perforated zinc gauze, so as to form a circle, the ends meeting as nearly as possible; a slightly larger hole was made to allow a stout piece of copper wire to pass through and round the interior, thus causing a continuous electric current sufficiently efficacious to ward off the attacks of slugs and similar pests. This simple though effectual invention I termed—for it was then unnamed, I believe—"Electric Alpine Plant Protector," and apart from its uses for placing round alpine gems to protect them, it may be employed round the young stem growths of *Lapageria alba* and any other similar subjects which slugs attack in their younger stages of growth. I did not employ the protector for my first plants of this lovely Navel-wort, but which were protected with a square handlight, and planted in equal parts of peat and sandy loam; and though it may not be strictly opposed to limestone, this is by no means essential in its successful cultivation."

— THE BOTANICAL MAGAZINE for August and September con-

tains plates representing the following plants:—*Allium giganteum*, a Central Asian Onion of large size, with dense globular heads of purple flowers. It was collected by O'Donovan in the Merv Expedition. *Sisyrinchium filifolium*, an interesting plant from the Falkland Islands, where it grows in "the bleakest spots of the globe." The flowers are white streaked with rose, and it is known as the "Pale Maiden." *Delphinium cashmerianum* var. *Walkeri* has large violet-purple-tinted flowers, and roundish lobed leaves. *Eucharis Mastersi*, a recently introduced species, intermediate between *E. grandiflora* and *E. Sanderi*; a small free-flowering variety of the latter is shown in the same plate, and named *multiflora*. *Alpinia pumila*, a curious plant with red-striped flowers in clusters, not unlike some of the *Pleiones* at a glance. It is a native of Eastern China, and is believed to be either a new genus or a distinct section of *Alpinia*. *Anthurium Glaziovii*, a new Brazilian Aroid, with fine dark green leaves and a large purple spadix. *Pentstemon Menziesi* var. *Scouleri*, a larger free-flowering form of the type, the leaves narrow and flowers purple. *Arctotis aureola* and *A. revoluta*, two showy species, the former bright orange red, the latter smaller and paler in colour. *A. aureola* is a very handsome old garden plant that has been lost for some time, but was obtained by Mr. R. I. Lynch as *A. speciosa*. *Didyosperma nanum* is an Assam Palm of the *Areca* tribe, with pinnate leaves in bold divisions. A good plate of *Primula Auricula* is also given showing the character of the typical plant.

CULTIVATING EDIBLE FUNGI.

AFTER the genial rain we have had, our meadows and woodlands must be abounding in delicious Mushrooms of many varieties—delicious to the taste as well as delightful to the eye. Now I want to ask why, in these days of "Mushrooms for the Million," if we wish to buy Mushrooms or spawn, we are restricted to the Meadow Mushroom, *Agaricus campestris*, or its inferior, the Horse Mushroom, with its black or subfist gills. Has it ever been proved by experiment that it is unprofitable or too expensive to produce spawn for growing other varieties, as *Lactarius deliciosus*, *Boletus edulis*, *Agaricus procerus*, *Chantarelles*, or any other of the thirty well-known edible fungi described by Mrs. Hussey and others, with full directions how to cook them? Has any capitalist ever ruined himself in the endeavour to cultivate artificially "Jews ears?" The savour-to-gravy, soup-and-sauce-giving Morell, said to have been sold in Covent Garden Market for 16s. per pound. Herefordshire, I believe, is the mycologists' paradise. Could not some of the Mushroom excursionists of that favoured region do us the kindness to undertake a few experiments in the way of producing spawn for the market, so that the fried Mushroom, so dainty at breakfast, might be as varied as the fried fish? And might not horticultural societies at their autumn shows for vegetables include a prize or prizes for the best dish of Mushrooms artificially grown or cultivated in the open ground, in the home kitchen garden not less than six varieties? Will some correspondent give an answer to these questions?—the Q. E. D. to the perplexed—X.

GRAND DUKE AND SELF-HELP PLUM.

MR. RIVERS' letter respecting my exhibit of this Plum at the meeting of the Royal Horticultural Society's Fruit Committee on the 8th inst., for comparison with my seedling Self-help, is most unfair and uncharitable towards myself. He does not deny, although he raises a doubt, that the comparing specimens were of Grand Duke, but he charges me with having intentionally picked inferior fruit for the purpose, and speaks of me as if I were a contending exhibitor at an ordinary show of the Horticultural Society. Surely there should be no contention at the Fruit Committee meetings, of which Committee Mr. Rivers is a member, and appears to have been present at the meeting on the 8th inst. I had not anticipated contention; I sent the Plums in good faith, fairly gathered, and for the dry season and position of proportionate size and ripeness, certainly with no intention of disparaging Mr. Rivers' productions or of incurring his hostility. I selected Grand Duke for comparison with Self-help as being the variety which approximated mostly to it in colour, shape, size, fertility, and general appearance, but differing from it a good deal in the period of ripening. Self-help in a crowded and shaded position being fully ripe and dropping, Grand Duke having in a full south exposure only a few fruits quite coloured, and these were selected. It would have been magnifying the difference had I picked the less ripe. In size there was no perceptible difference between the fruits gathered and those left. Had the heavy crop been thinned probably greater size might have been obtained, but I do not thin, and made Grand Duke no exception.

Mr. Rivers' allusion to "ill-shape," which arose from compression, helps also to explain the cause of want of size. All the varieties of Plums grown on my hot sandy land at Girtford, especially such fertile varieties as Victoria and Grand Duke, are much smaller than usual, as, indeed, Plums are generally this year. I have looked upon Grand Duke as one of the best Plums grown, but it has never been very large, although last and previous years it has been much larger than this. That my stock of Grand Duke is true I have not the least doubt, as I have it from two distinct but most reliable trade sources, and both stocks have comported themselves alike. The last specimens of each I have forwarded to the

Editor for identification; also samples of Diamond, one of the parents of Self-help, now only partially ripe, although from a bush fully exposed to the south. As the Committee decided that Self-help was not so good as that variety, but here Diamond is the latest of the three, and quite a fortnight later than Self-help grown under similar conditions, and therefore the comparison is scarcely a fitting one. Mr. Rivers seems to think that the practice of sending specimens for comparison a reprehensible one. I had always thought there was a general invitation to exhibitors at the Royal Horticultural Society Committees to do so, but on reference to the regulations I find it comes only from the Floral Committee. I have seen the practice followed, and it seemed to me an instructive one, and it was with this view I sent Grand Duke in good faith for comparison to the Fruit Committee.

Mr. Rivers' letter raises a question whether it might not be desirable for the Committees, at their option, when exhibitors are willing, either personally or by letter, to furnish information as to their production, to allow the same to be furnished. A point of importance might sometimes be cleared up and a satisfactory conclusion arrived at.—THOMAS LAXTON.

[The fruit of Grand Duke received from Mr. Laxton was "dead ripe," and with the exception of one Plum was completely smashed in the carriage, so that it was impossible to judge of it. The shoots and foliage sent were not good specimens, and it was with difficulty we could judge whether the shoots were downy or smooth. To us they appeared to be smooth, whereas those of Grand Duke are downy. The flesh of the fruit was all but free, and that of Grand Duke is firmly adherent.]

SHOWY AUTUMN PLANTS.

At this time of the year of all others, when the majority of our bright-coloured border plants are on the wane, is the growers' time to look out for plants that will keep up the succession and extend the flowering season as far into the autumn as possible. Many plants are here and there in cultivation, though not by any means generally, that are suited for the above purpose; but unfortunately tastes differ to such an extent that the tall Asters admired by a few are passed over as unworthy of notice by others. Then Pentstemons may be mentioned, many of which are now in full beauty, reminding us of the rapid advances made by the hybridiser and selector within the last few years. Larkspurs, too, have undergone a similar change, and with the French varieties now becoming common we may represent every shade of blue and purple, from almost black to the most delicate tinge. It is, perhaps, not generally that these by a little management may be had to flower at almost any time from June until the frosts set in about the middle or end of October. They may be raised in the spring from seed, when by good treatment and liberal feeding the plants will flower all through the autumn months, or, again, when old-established plants have made about half their growth they be cut down they will also flower in the autumn, and indeed with a little experience, other circumstances considered, the grower can have them to flower at the time he is most in need of their assistance in making his beds and borders attractive. The very early flowering sorts may also be utilised in giving a second crop of flowers by cutting the stems off as soon as they have flowered. They will shoot up again, and though not so strong give a fairly good show, which is all that is wanted of them. Of course these second crops necessitate good treatment, but it is worth trying for, besides removing unsightly stems from an otherwise cheery flower border. Antirrhinums though past their best give hope of holding out for a few weeks longer, owing also to this judicious cutting-back process; indeed, it only wants a beginning and the grower will find that he can utilise many plants for second crops in this way.

Geranium Wallichii is now in its full beauty, and an extremely useful plant it is for the hardy border; no drought seems to incapacitate it for yielding its annual supply of pretty blooms, and in localities where success is attained with Lilies, *L. splendens* and its varieties will help in a very large measure to brighten the border. Given the necessary soil, with free drainage, a little shade for the bulbs, and plenty of water during the growing season, and this Lily will amply repay all extra trouble involved in getting it properly established. *Anemone japonica* and its varieties should also form part of even small collections. It grows well in almost any border, and its free-flowering habit should not fail to make it a general favourite. There are three colours—white, pink, and rose, the first being extremely chaste and beautiful; the pink, which has larger flowers, is also desirable, and to see these plants as we saw them the other day in the form of isolated specimens a yard through, it might almost make us come to the conclusion to grow nothing else for autumn decoration, but we want variety. *Rudbeckia speciosa* or *Newmanni* is a species of great beauty, and one that has attracted much attention of late. It is undoubtedly a fine plant and will play an important part in the bedding of the future. A large bed of the *Anemone* edged with *Rudbeckia* is strikingly pretty—a permanent

bed that does not require renewing every spring; a bed you can enjoy, and with no more trouble than clearing away the dead stems in autumn, adding a little fresh feeding every spring. Such beds, too, can be gay early in spring with Crocuses, Tulips, and Hyacinths without injury to either, and later with *Gladiolus*, giving a succession until the other plants are ready to keep up the display.—D. R.

WORDSLEY AND KINVER.

DURING a few days devoted to a horticultural ramble in the midlands this summer, I found myself within a convenient distance of Stourbridge, and the occasion seemed so opportune for paying a long-anticipated visit to a certain widely famed seed firm in that neighbourhood, that I determined to take advantage of it, and spend a day on the farms. For glass and pottery Stourbridge and the adjoining Wordsley have long been celebrated, but horticulturally they were of no importance until Messrs. Webb & Sons established the head-quarters of their seed business there, and since then for that fact alone they have become familiar to farmers and gardeners in most English-speaking countries. In the immediate neighbourhood there is little else of gardening interest, if we except Enville Hall on one side of Stourbridge, and Hagley, about an equal distance on the other side. But as my chief object was to see Messrs. Webbs' establishment, I proceeded at once to their

OFFICES AND SEED WAREHOUSES, WORDSLEY.

These are situated near the main road in Wordsley, and though prepared to see something extensive, I was astonished at the huge buildings occupied for this purpose, and the abundant evidence their contents afforded of an enormous business. The principal building is 180 feet long by 60 feet wide, and has five floors, another more recently erected being of nearly the same dimensions, and having an equal number of floors. These are devoted to the different departments, thus a large space is occupied with the flower seeds; the garden vegetable seeds form another, bulbs another, cereals also have a large space devoted to them, then the general farm seeds, such as root crops and grasses, in all of which a most extensive trade is carried on. Potatoes, too, have a floor appropriated to them for many tons of "seed tubers" are annually supplied from there, while Hops and wool, which are also branches of this diversified business, occupy a considerable proportion of one floor. It should be mentioned that these floors are all fitted with lifts, and in one part is a series of seed-cleaning machines of great importance, those devoted to seed corn being constructed on an improved system invented by Messrs. Webb & Sons, and are found to perform their work in a perfectly satisfactory manner. The value of thoroughly clean seeds can scarcely be overestimated, and the attention given to the matter by the members of the firm has met with well-deserved success. In an upper floor of the new warehouse we come to what might be termed the "theatrical lumber room" of the firm, for there the handsome stands are prepared which are seen at all the important agricultural shows in Great Britain, and which necessitate the constant employment of numerous carpenters, painters, and decorators. This department is doubly interesting, reflecting as it does to some extent the widely spreading character of the trade, and the enterprise brought to bear upon its maintenance and advancement. It is, indeed, a sign of the times.

The offices occupy a third building of great size; they are most systematically and conveniently arranged, permitting the multifarious details of such an enormous business being carried out with accuracy and dispatch, both essential to the satisfactory management of a concern like this. Large numbers of clerks are employed, and the manager of each department has a room in communication with the heads of the firm, who take an active part in the superintendence. There is also a house where grass and other seeds are tried, and with workshops of various kinds, stables, &c., completes an establishment that is in all respects wonderful.

THE SEED FARMS, KINVER.

But so far only the head-quarters had been inspected, and as a visit to the seed farms and trial grounds was equally desirable I was placed in the care of a genial, intelligent guide, and conveyed to Kinver as rapidly as our well-fed but meditative steed could be induced to travel. Fortunately plenty of time was allowed for a full enjoyment of the scenery, and a good portion of the four or five miles after Wordsley is left is decidedly pretty, especially when approaching Kinver, as there the road gradually ascends, at some parts through a deep cutting in the red sandstone of the district, with tall trees completely arching over the road, and at others commanding extensive views of an undulating and finely wooded country. It is, however, from Kinver Edge that the grandest views are obtained over many miles of Staffordshire and adjoining counties, a landscape which can only be equalled in this part of England by the prospect from the Malvern Hills. The seed farms occupy 1600 acres on the slope and around the Kinver Hill, which rises to and terminates in the precipice-like "Edge." The greater part of this land is Messrs. Webbs' freehold, being used chiefly as trial grounds or for raising stocks of new varieties, to be afterwards, with the bulk of the seeds required in the business, grown on land in various parts of England and the Continent, engaged for this purpose by the firm and under their personal supervision as to "rogueing." In this way it is estimated that over 15,000 acres are employed—an extraordinary total, the yield of which in weight of seeds could scarcely be calculated. One great advantage of this system is that the most suitable land for particular

crops can be selected, and the best produce is thus insured, well-developed and matured seeds of any cultivated plant being a most important step towards obtaining satisfactory results either in the farm or garden. To cereals many acres are devoted at Kinver; for instance, there are 180 acres of Wheat, comprising a number of Webbs' choice selections that have already proved of great merit, then there are 212 acres of Barley and 171 acres of Oats. No less than 78 acres are appropriated to Peas, and 63 acres to Potatoes, but to these reference will again be made, these numbers being cited merely to convey an idea of the relative proportions. Swedes, Turnips, Mangolds, and many other crops are all largely grown for the same purpose.

The first portion of the trial grounds that we visited was the "flower" department, where strains of the most popular florist and garden flowers are grown for comparison or improvement. In recent years much attention has been given to this, with the best results, and, as with the vegetables, farm crops, &c., careful selections have been made, which now bear the name of the firm as a guarantee of their merit. It would be impossible in these notes to enumerate all that are thus being tested, but a few of the more notable may be referred to. Tropæolums hold an important position in many gardens, and of these there are several handsome varieties, distinguished by their rich or delicately coloured flowers, such as King Theodore, extremely dark, and the dwarf compact King of Tom Thumb strain, in which golden yellow, creamy white, and dark scarlet tints occur. Mignonette is everyone's favourite, and a very fine strain has been obtained, with long bold spikes of flowers, powerfully fragrant, and the latter quality has been found to vary considerably in different strains. Such old garden plants as Antirrhinums and Marigolds are similarly well represented, while Asters of all the sections and Stocks, too, are as beautiful as such plants invariably are when of a good variety and well grown. Zinnias have been made a specialty, "Webbs' Exhibition Double" having secured much favour in gardens, the flowers being large, well formed, bright and varied in colours. The beautiful Chrysanthemum carinatum is largely grown, also C. atrococcineum, Godetias of the best varieties, the bright Eschscholtzias, with such well-known plants as Verbenas, Polyanthus, Calliopsis atrosanguineum, C. bicolor, Calendula Meteor, Malope grandiflora, Viscarias, Bartonias, Whitlavias, Asperulas, Eutocas, Candytuft, and hosts of other annuals, biennials, and perennials. All are deserving of praise, for every effort is made to render the selections thoroughly reliable and of the best quality, and those that I saw were good examples of the success that had attended these efforts. When large beds of particular varieties are seen as true as possible it is a satisfactory indication that the labour expended in selection and preservation has not been in vain. The popular plants, such as Primulas, Cyclamens, Cinerarias, Gloxinias, Begonias, and others are not grown at Kinver, but the same care has been exercised elsewhere in their improvement, and some highly commendable strains have been secured.

A most important portion of the routine at Kinver are the annual trials of vegetables, to which considerable acreage is fittingly devoted, the utmost care being employed in testing and recording the numerous varieties grown. The object of these trials is to permit a ready comparison between new and old introductions of each vegetable to prove their respective merits, and to enable the firm to determine what sorts they can recommend with confidence. The experiments are thoroughly and fairly conducted, the best seed is employed of each variety, they are cultivated in precisely the same manner, and the soil being a rich loam it is calculated to display the true characters of each to the best advantage. In every kind of vegetables Messrs. Webb have selections of their own which they test with the others, and in every case it was evident that the former had been chosen for substantial and valuable qualities that could not be mistaken, proving at once the good judgment of the selectors, and the advantage of such a mode of comparison as that adopted. To give a detailed account of all these trials would fill a volume, such as the Record Book kept at the Kinver Farm; but interesting as that would be, it is far beyond the scope of these notes, and I must confine myself to a brief mention of the principal crops. Of Cauliflowers forty-eight varieties or strains were being tried, but it was rather too early to determine their relative merits, though the home selection, Early Mammoth, was showing well, and certainly justified its title of early. Of Potatoes 500 varieties have been tested, but there are not quite so many this year, as a number that proved absolutely valueless have been discarded. Beans, including both Scarlet Runners and Dwarf Kidney varieties, were largely represented, a very good strain of the former being grown, and of the latter Victoria was noticeable for its large pods and prolific habit, while of the Butter Beans Wax Flageolet, Golden Butter-wax, and Wax Date were notable. Carrots, Parsnips, and Beet occupied much space, but one of the most interesting quarters was that appropriated to the Onions, of which fifty-three supposed distinct varieties were tested this season, one very obvious result being that a large proportion were found to be "too much alike" to deserve distinct names. The White, Red, and Yellow Globes were fine, but especially the first-named. The Flat Red and Italian Tripoli were also excellent varieties, the White Italian Flat Mammoth being remarkable for the great size of the bulbs, Danver's Yellow deserves prominent notice, and Improved Banbury was unquestionably one of the best varieties for size and evenness of bulbs. The other leading sorts were Giant Zittau, Giant Rocca, Blood Red, Brown Spanish, Bedfordshire Champion, James' Keeping, and Newnham Park.

Peas form such an important kitchen garden crop, that it is not surprising special provision should have been made for testing them, and accordingly no less than 128 varieties have this season been grown at Kinver, a trial which the home varieties Chancellor, Wordsley Wonder, Kinver Gem, and others have stood most satisfactorily. Several of these

have become great favourites in gardens, Wordsley Wonder especially having taken an important position owing to its good quality and prolificness. Turnips, Lettuces, and Savoys each formed interesting quarters, concerning which much could be said, while of Cabbages there have been fifty-five trials in addition to several acres of Emperor and New Early Drumhead for seed, the crop of the former being grand even samples of an excellent Cabbage. Numbers of other trials have been undertaken, and the results amply prove that the system is an admirable one.

Besides the several departments mentioned, it should be observed that a large trade has been developed in artificial manures, the works being at Widnes, Lincolnshire. Then to this must be added the non-horticultural but important glass-manufacturing business, where some exquisitely artistic work is produced, and it will be patent to all that the firm of Messrs. Webb & Sons is one of the most remarkable in the kingdom. The development of such a gigantic and diversified business indicates an astonishing capacity, and is in itself a sufficient proof that the true secret of commercial prosperity, high quality of productions, is thoroughly understood.—A VISITOR.

ORCHARD HOUSE CONSTRUCTION.

A PERTSHIRE correspondent and several others desire full information respecting the construction of orchard houses, and in compliance with their request we reproduce the following from Rivers' "Orchard House," the substance of which appeared in several articles published in early numbers of this Journal. The work in question gives a variety of other useful information on the subject that is indispensable to anyone intending to build such houses.

A LEAN-TO ORCHARD HOUSE.—Its length may be from 10 to 100 feet or more, according to means and space; but its breadth and height should be according to the following dimensions, unless any improved plan may be suggested which will insure greater advantages at the same cost:—

I will suppose that an orchard house 30 feet long is required. A ground plan 30 feet long and 12 feet 6 inches wide should be marked out. Then six posts of oak or good yellow deal, 5 inches by 3, and 10 feet 6 inches in length; or of larch poles, 16 inches in girth, cut in two, and the flat sides placed outwards, must be firmly fixed 2 feet in the ground: the ground ends, before fixing, should be charred 2 feet 6 inches from the bottom, and then have a coat of boiling coal tar, which adds much to their durability. They will form the back line of posts, standing 8 feet 6 inches in height from the surface of the ground. For the front wall six posts of the same thickness, 6 feet 6 inches long, must be firmly fixed 18 inches in the ground, so that they stand 5 feet out. Two posts will be required at each end (at one end, if only one door is wanted); these will form the door posts. On these posts, both at front and back, must be nailed a plate, 4 inches by 3, on which the rafters are to rest; the posts are thus arranged in two lines.

Now then for the rafters. These must be 14 feet long. A 9-inch deal—i.e., a deal 9 inches wide and 3 inches thick will make four, each 4½ inches by 1½, or nearly so. These are light, strong, and the most economical of all. Instead of "plonging" the rebate for the glass (which is great labour and waste of material), on the upper side of each rafter, exactly in the centre, must be nailed a slip of half-inch board, half an inch wide; this will leave half an inch of the rafter on each side for the glass to rest on (not too much for glass 20 inches in width). The rafters are so far prepared for glazing, but not yet fitted on the plates at top and bottom of the projected house; no mortises must be made, but the rafter fitted to the back plate by cutting out a piece. They must then be strongly nailed to the front and back plates, leaving a space between each rebate of 20 inches. A piece of three-quarter-inch deal board, 6 inches wide, should be nailed along the top to the end of each rafter, so as to be even with their upper edges, and in this should be a groove to receive the upper ends of the pieces of glass. At the bottom a piece of board, 1 inch thick and 6 inches wide, must be let in, by sawing a piece out of each rafter, for the glass to rest on and to carry off the water. We have thus formed a sloping roof, 8 feet 9 inches (with the plate) high at back, and 5 feet 3 inches high in front.

The glazing is now to be thought of. This is best done by placing a broad plank, 5 or 6 feet long and 2 inches thick, across the rafters, for the glazier to kneel on. Two "brads" (small headless nails) should be driven into the rafter at the bottom corner of each piece of glass, so as to prevent its slipping down, which, with large pieces of glass, is very apt to occur; a bed of putty should be placed in each rebate for the glass to rest on, and the putty firmly placed over the pieces of glass in the usual way when it is fixed in its place. The laps should not exceed a quarter of an inch, and they need not be puttied, as the ventilation is more free when they are not. The most economical glass is 16 oz. British sheet-glass, which can be bought at 2d. per foot, and the size to be preferred 20 inches by 12, placing it crosswise, as the rafters should be 20 inches asunder. I find that scarcely any breakage takes place from frost, owing to the large pieces being elastic.

On and outside the back posts three-quarter-inch well-seasoned deal boards should be nailed. In the back wall thus formed, sliding shutters in grooves, 3 feet by 1 foot, must be fixed to act as ventilators—two close to the roof and two 18 inches from the surface of the ground (the lower shutters in the back wall must always be on a level with the ventilating shutter in front); if two more be added to the right and left of the lower shutters, all the better; in summer it is impossible to give too much air.

The front and ends (except the doorway) must also have three-quarter-inch boards nailed on outside the posts; one of them, the upper one in the front, to be on hinges, so as to let down the whole length of the house; this, with the back shutters, when all are open in hot weather, will ventilate thoroughly. To add to this, and it is all required in summer, the boards will shrink and let in air; a fierce sunlight is thus admitted by the large glass, and abundance of air, in which all fruit trees thrive to admiration. The boards and rafters should be painted with stone-coloured paint, which will give the house a very neat appearance.

If required, more head-room may be given by making a sunken path 2 feet 6 inches wide, and 4 to 6 inches deep, in the centre of the ground-plan

this will leave a border on each side 4 feet 9 inches deep. The front border need not be raised, as the trees in two or three years will require all the head-room they can have; but the back border should be raised about 12 inches above the surface, and supported by the brick or boarded edge to the path; for the sides of the path must be supported with boards or a 4-inch brick wall. The earth must be kept from the boards forming the back wall by a 4-inch brick wall. It will be found a great improvement (for which I am indebted to a friend) to divide the back border into two terraces by raising the back half 12 inches, building a 4-inch brick-wall, and filling it with earth, so that the back row of trees is elevated, and thus escapes any shade given by the front row; the effect also is very good. Now, as everything depends on these borders—for there must be no benches and no shelves—care must be taken to make their surface firm, yet the soil rather loose underneath: loose materials, such as lime-rubbish from old walls, and road-sand, may be laid on them about 6 inches deep; these materials may then have a coat of loam 2 or 3 inches deep, which should be removed to level hard surface; you thus have two borders, not too far from the glass, and on which your orchard will thrive admirably. It is now well ascertained that it is better to encourage the roots to come to the surface by rich surface dressings in summer than to allow them to root through the apertures at the bottom of the pot; hence the advantage of a hard border, which does not encourage excessive rooting below. It will appear odd to read about trees thriving on instead of in a border; but when I explain that this is to be an orchard in pots, it will not seem so contrary to our usual garden-culture.

A SPAN-ROOFED ORCHARD HOUSE.—Similar details to those already given apply to the span-roof house, but the following particulars are useful:—A small span-roofed house is so simple in its character that any self-taught builder or amateur may erect one. The way to do it is as follows:—Two rows of oak posts, 5 inches by 3 and 7 feet long, should be firmly fixed 2 feet in the ground; 5 feet out, 14 feet row from row, and 5 feet apart in the rows. On each of these rows should be firmly nailed a plate 4 inches by 2, to receive the lower ends of the rafters, which may be nailed on as directed for the lean-to house. The rafters should be 8 feet long and 3 inches by 1½; they can be bought at any sawmill, planed and chamfered, for 10s. or 12s. per 100 feet. The ridge-board should be 5 inches by 1, to which the upper ends of the two rows of rafters, after being sloped, should be nailed. As the glass cannot be made to fit on the plate at bottom, a drip-board, 5 inches by 1, placed sloping to receive the lower ends of the pieces of glass, must be fixed on the plate the full length of the house. On the ridge-board a small ledge must be nailed for the upper ends of the pieces of glass to rest on. On the upper edge of the ridge-board a cap, 3 inches by 1, should be nailed, to shoot off the water and prevent its entrance at the ridge.

Estimates of the cost of orchard houses are given in the work referred to.

EFFECT OF EARLY PRUNING ON VINES.

WHAT has become of our friend "A Thinker?" is a question frequently put to me of late, and all that I can suggest is that he is taking a long vacation. This we will not begrudge him, always providing he returns with plenty of fresh thoughts wherewith to interest and instruct us. By way of furnishing him and other readers with a little food for thought, I shall put into shape some ideas of my own on the subject of partially pruning Grape Vines while yet they are in full leaf. Perhaps it would have been better for me to have waited till I could have written more authoritatively, but, on the other hand, an early discussion of the whole subject may materially benefit and instruct numerous readers of this Journal who, perhaps, have never previously had their thoughts directed into the channels I propose to take them.

Grapes have been exhibited this season more largely than ever, at least such is my opinion, and in nearly every case the bunches will have been cut with a proportion, large or small according to the taste of the exhibitor, of the lateral growth attached. The consequence is many laterals have undergone a severe summer pruning, and according to the advocates of early shortening of the laterals, this should result in the formation of plump buds, which in due course would give extra fine bunches. According to my experience, however, the reverse is most frequently the case, and instead of better bunches, the next that are produced on that particular spur will be much smaller than usual. During the past three seasons I can truthfully assert that wherever I cut a bunch for exhibition purposes, none were available for a similar purpose the following year; and in the case of some partially renovated Vines of Muscat of Alexandria, some of the spurs from which show bunches had been cut broke badly the following spring, and completely failed to produce bunches. It is true the Vines in this case were in poor condition, principally on account of being overcropped so soon after they had been lifted, and in the case of some Black Hamburghs in the next house, and which had recovered their vigour more quickly, total failure did not occur. As a rule Vines that produce Grapes fit for exhibition are in good health, or perhaps we should have had others writing in the same strain as myself, and it may yet turn out that I am by no means singular in my experience. The idea prevails that the character of the bunches to be produced next season is determined this autumn, and so, doubtless, it is; but I am by no means convinced that those beautiful plump buds we all so much admire have a fine bunch or bunches in embryo already stored in them. It seems to me that the bunch-forming matter is rather stored in the wood about the buds. In proof of this, witness how frequently the closely spurred, and unduly closely spurred I should say, rods produce bunches, and that, too, from buds that previously gave no signs of being in existence. All the best placed leaves on the laterals contribute their quota to the formation of a store of bunch-producing sap, some being deposited in the young wood and the remainder in the main stem, and this, if I remember rightly, was to a certain extent demonstrated some time ago in the pages of the *Journal of Horticulture*. Thus, if we cut a show bunch we also remove important factors in next year's success; but, on the other hand, if

my theory is wrong, this severe shortening ought to prove beneficial, the two, three, or four reserved joints perfecting extra plump buds.

The thought may occur to some that, owing to the small number of laterals on the Vines that are subject to this severe shortening, the subject is hardly worth consideration, but I venture to think differently for several reasons. For instance, immense quantities of Grapes are sent to the markets, and naturally fruiterers prefer to have them with a piece of lateral growth attached; this, besides improving the appearance of the bunches, also rendering them more easy to pack or display in the windows. It follows that the majority of the laterals producing the bunches sent to the markets by some growers, are necessarily shortened, and this may slowly—but I believe most surely—lead to the ruin of the Vines, or at any rate to an ultimate material reduction in the weight of the crops resulting. This season my attention was called to an occurrence strongly corroborative of much that I have advanced above. The Vines in the centre of a large house, wholly planted with Muscat of Alexandria, broke very weakly and irregularly to the no small consternation of those in charge; but thanks to the extraordinary vigour of the Vines, they gradually righted themselves, and a good crop is now hanging on them. It was a lesson that will not be thrown away upon those responsible, and who happened to be intelligent men. From what I could learn the rods, in the centre of the house especially, had last season been rather heavily cropped, and in order to lighten the weight a considerable number of bunches were cut and packed for market. All were cut as if for exhibition, and that would appear to be the only solution of the mystery; at any rate, not much wood will again be sent away from that viney till such times as the leaves are fallen.

It does not follow that because I am of opinion that it is most injurious to severely shorten the laterals before the leaves are fallen, I would also condemn the practice of lightly shortening them. On the contrary, I feel confident that a judicious thinning-out of the sub-laterals and a moderate pruning of the laterals is a wise practice, and in this I am supported by one of the best gardeners I have ever met. He recently informed me that many years ago he practised early shortening of the laterals, some of his experiments tending to surprise most superficial observers. After the bunches are fully matured there is less need of so much foliage beyond them, the leaves say beyond the fifth or sixth joint from the rods merely storing up food that will eventually be cut away. All the Vines under my charge, both in early and late houses, now have the laterals shortened to about 12 or 14 inches in length, this leaving either five or six principal leaves, while all the sub-laterals are cut clean away. In this manner, and with the assistance of fire heat, the best portion of the young wood will be thoroughly ripened, most of it, in fact, being now (September 16th) as hard as nails. It is the best ripened wood that produces the handsomest bunches, and it is the best ripened rods that will remain much the longest in good bearing order. While the Vines are growing strongly, this early shortening and thinning-out, if resorted to, would end in the premature pushing out of many back buds, but directly they cease to grow to any appreciable extent, then the pruning may be commenced, the shortening being gradually completed.—W. IGGULDEN.

NEPENTHES NORTHIANA.

AMONGST the numerous beautiful and cleverly executed pictures in Miss M. North's gallery at Kew is one that may be termed of historical interest, for it led to the introduction of one of the most handsome Pitcher Plants in cultivation. This represents a *Nepenthes*, which was named by Sir Joseph Hooker in honour of this distinguished lady artist, N. Northiana, and the exhibition of this painting induced Messrs. J. Veitch & Sons, Chelsea, with their customary enterprise, to send out a collector with the special object of finding and improving it. This, after some trouble, he succeeded in doing, and four or five years since it made its appearance in the unique collection of Pitcher Plants at Chelsea. The species is a native of Borneo, the head-quarters of the *Nepenthes*, and was found growing upon the limestone mountains in the neighbourhood of Sarawak, where several other members of the genus are also found, and another of Miss North's pictures (377) represents an undescribed species from the same district.

N. Northiana is remarkable for the size of its pitchers, being second only to N. Rajah in this respect, some of the largest having been found 16 inches in length and 5 inches in diameter. The pitchers are also very bold in form, with a broad grooved margin somewhat like N. Veitchii, the inner and outer surfaces being green, handsomely spotted and streaked with rich crimson. The form and markings are accurately shown in the woodcut (fig. 44), kindly lent by the introducers of the plant.

THE TALL-GROWING LOBELIAS.

THE tall-growing Lobelias are not so often seen in gardens as they deserve, for not only are they amongst our showiest plants, but the ease with which they may be grown, and their bright colours, render them most invaluable for outdoor autumn gardening. It will no doubt be all the better if they are planted in damp low-lying situations, excepting the *Tupa* group, as they are essentially moisture-loving plants; but this is not altogether imperative, for provided they are well supplied with water during

the growing season they will give satisfaction in the common border without special preparations. It is often urged against them that they are far from being hardy and unable to stand the test of an ordinary severe winter. In certain localities this may be so, but we in the south have never had any difficulty in preserving our plants through even trying autumns. Our plan, which is being generally adopted where known, is to cover the crown with conical heaps of cocoa-nut fibre or rough coal ashes.

types are *L. splendens*, *cardinalis*, and *fulgens* intense scarlet, and *L. syphilitica* blue, from which we get innumerable varieties.

To our taste there is no better way of setting them off to advantage than to plant them mixed in one bed; the effect is charming, and at this season one not easily forgotten. By much the same treatment *L. Tupa* may be had in our borders. A noble species, with its tall spikes from 6 to 8 feet in height, with about a yard on each of its peculiar scarlet



Fig. 44.—*NEPENTHES NORTHIANA*.

Never having lost a single plant, we can recommend with confidence to all those who have not yet tried it.

L. cardinalis, *splendens*, &c., are of an intense scarlet, not forgetting the florist varieties, for here, too, the florist has shown no mean skill in selection, the result of which may be seen in such plants as *Queen Victoria*, *Prince Arthur*, *Painted Lady*, *Blue Beard*, and others, some of which have extremely attractive foliage as well as striking flowers. One, however, that does not seem to be much in the trade we would like to draw attention to—*i.e.* *L. Milleri*, a hybrid supposed to be between *L. syphilitica* and some of the *cardinalis* forms. It has the foliage of *L. syphilitica* with the habit of the other, which it also resembles in form of flowers. They are a most beautiful violet, and seem to blend the blue of *L. syphilitica* with the intense scarlet of *L. cardinalis* or *L. splendens*. It is a free grower, about 3 feet in height, with fine straight upright habit. The

flowers. The large leaves are peculiarly attractive, covered as they are with a white down, and at a distance in contrast to the flower spikes very imposing. *L. Wallichiana*, or *pyramidalis*, a pretty Himalayan species, has bluish violet flowers; a first-rate border plant. All those mentioned may be readily increased by division of the roots in spring, and when grown in a little heat make good plants for autumn. Their flowering season extends from the end of July until the frost sets in.—T. Y.

AMERICAN BLACKBERRIES.

THE qualities of these have often been praised, and I have more than once decried them. I have never yet seen fruit in this country equal to the American pictures. It was one of these which induced me to plant

at first, and after I was fully convinced they were no better than our common wild variety I gave a few more varieties a trial, which I have done in a liberal way in every respect, and with no better results. The plants were put into the best position in the garden in the spring of 1884. They made capital growth last year and this one as well, but the fruits have been only moderate in numbers and no better in size or quality than bushels which we could gather in the woods about here just now. The Kittatiny variety was the first to deceive me, and now that the Lawton, Philadelphia, and others have proved equally useless nothing will induce me either to retain them or try them further. We might expect to find them plentiful in many gardens and at shows, but although I have visited many of both in England and Wales this season I have not once been able to find a dish of them in any way superior to our hedgerow kind. Indeed, I believe if this hedge one was taken into our gardens and fed, trained, and cultivated like those American kinds, that it would turn out superior to any variety ever imported.—J. Muir, *Margam*.

THE LONDON PARKS.

HYDE PARK.

THIS is by many considered the most important of the London parks ; more, perhaps, because it is the recognised resort of what is known as the fashionable world than for its superior attractiveness or extent.

Hyde Park covers some 400 acres of ground, so that, if second only in point of size, it is still of considerable extent. The land has been the property of the Crown for upwards of three centuries, in fact since the Reformation, when it was wrested from the monks of the Abbey of Westminster by the wily and unscrupulous Henry VIII. The manor of Hyde had been held by the monks for several centuries previous to the disestablishment, which reduced them from power and affluence to impotence and poverty, the Court and its satellites being only too eager to despoil the monasteries of their broad and fertile acres, on which their eyes had long been greedily fixed. The manor of Hyde was extensive and well stocked with game, hence it was soon seized upon by the king, to whose hunting preserves it made a welcome addition. It is not known with certainty when the park was first enclosed. The Serpentine, the broad piece of water which now intersects it, was formed about a century ago.

The floral arrangements are not conducted here, there, and everywhere in Hyde Park. Little will be found except in the splendid stretch of beds between Hyde Park Corner and the Marble Arch, and in the Dell and its surroundings, which will be subsequently alluded to. But in the beds referred to there is extent and variety enough to please the enthusiast. Scores of beds, of countless styles and designs, evoke admiration, and are alone worth a long journey to see. We will describe a few of the most effective of them. Starting from the Piccadilly end, a circular bed first attracts our notice. The centre is occupied by Pelargonium Princess Alexandra and Viola lilacina, the silvery-edged green foliage of the former contrasting nicely with the lilac-blue flowers of the Viola. A ring of the purple-leaved Iresine Lindenii surrounds the mass, and the bed is margined with blue Violas. It is exceedingly pretty. The next arrangement is a somewhat novel one, but is highly effective : the graceful foliage of Jacaranda mimosaefolia, which grows about 2 feet high, is contrasted with that of Fuchsia Sunray. Iresine Lindenii is planted here and there amongst them, and the bed is carpeted with the green Herniaria glabra. A line of Coleus splendens is planted along the front, and the whole is margined with a band of the silvery-grey Santolina incana. Equally novel and little less effective is an arrangement of Lobelia cardinalis, scarlet, 2 feet high ; Celosia pyramidalis coccinea, crimson plumes, 2 feet high ; and white Stocks. The bed is carpeted with Giant Musk, edged with Iresine, and margined with the pretty mauve-coloured Lobelia Omen.

One or two beds of Begonias are an interesting feature of the bedding here, and these plants might be more generally employed for bedding purposes, for which their adaptability has been pointed out many times. They grow to a convenient height, 1 to 1½ foot, and are very bright and varied in colour, besides being floriferous and hardy. The first of these beds we noticed was planted with Begonias in variety, with a ring of Pelargonium Mrs. Quilter, and a marginal ring of Lobelia Emperor William. It was very attractive, although the Begonias were not at their best. The next bed was attractive in a double sense ; it was planted with Heliotrope Jean d'Amour—a broad mass of dark blue, powerfully fragrant, and edged with Golden Feather and Lobelia speciosa.

Begonias in variety formed the most conspicuous occupants of another large bed. It was carpeted with Pilea muscosa, commonly known as the Artillery Plant. An edging of the slender-leaved variegated Grass, Poa trivialis variegata, heightened its effect, and it was margined with Lobelias. With the exception of the last-named, none of the plants mentioned is widely used for bedding purposes, though they look admirable thus arranged together. A good contrast is secured by the very simple arrangement of the pink Pelargonium Lady Bailey, Iresine Lindenii, and the large orange flowers and pretty leafage of Gazania splendens. These occupy another large bed, the Pelargoniums, of course, being in the centre. There are many large beds of Pelargoniums of different varieties generally arranged with Iresines and Ageratums ; they should be very effective when at their best, but the heavy rains last week dashed away many of the flowers. Nevertheless, in others that are somewhat sheltered the flowers are as plentiful and brilliant as ever.

A mixed bed of Acacia lophantha and Dianthus is attractive, the former having graceful foliage, the latter large flowers of diverse and

brilliant hues. These Indian Pinks are well worth growing by every one, being very gay ; they may be treated as annuals, for if the seed is sown early the plants will flower the same year. After flowering they may be pulled up to make room for other things, fresh seed being sown the following spring for the next year's display. A broad mass of Lantana Ne Plus Ultra, lilac, forms the distinguishing feature of another bed, a line of Coleuses, and a margin of Mesembryanthemum cordifolium variegatum completing it. A very pretty bed is formed by planting white Begonias, carpeting the ground with Alternantheras, a ring of Coleuses round the Begonias, and a marginal ring of Echeveria secunda glauca outside. An arrangement not previously observed is that of mixing Verbena venosa and Abutilon Thompsoni ; each grows about 18 inches high, the former having light purple flowers, which are borne with great freedom, the latter broad, prettily mottled leaves. The effect is good. The front of the beds is occupied with Pelargonium Queen of Queens, Iresine Herbstii, and a margin of Mesembryanthemum cordifolium variegatum.

The fine foliage of Solanum marginatum is shown to advantage in another example, while Nicotiana affinis, Polymnia grandis, and Pelargoniums in mixture are equally effective. Ficus elastica contrasts well with the slender leaves of Dracena congesta, and the bed is attractively completed by a pretty carpet of Abutilon vexillarium, lines of Pelargoniums and Coleuses, and a margin of Mesembryanthemum. It will not be necessary to give more examples of the different styles of bedding in Hyde Park, the beds described are but a few selected from dozens of others equally worthy of attention. There is variety enough to please all tastes, and the effect of the whole is superb.

Leaving the flower beds, the Dell near Albert Gate must be visited. It is, perhaps, the most attractive corner of the Park. Mounds have been thrown up and planted with various shrubs and flowering plants, while a stream of water runs through the lower ground, on the banks of which Grasses, aquatic plants, Palms, Tree Ferns, and subtropical plants are arranged with excellent effect. The Dell can be seen to good advantage from the bridge above. There is also a pretty mixed border of annual and herbaceous plants, such as Carnations, Pentstemons, Marigolds, Campanulas in variety, Stocks, Lilliums, of which there is a large number, Antirrhinums, Gaillardias, Gladioli, and many other plants.

There is an attractive group of beds on the right hand side of the walk parallel with Rotten Row, just before the Dell is reached. One is composed of single and double Dahlias, which are now flowering splendidly. The colours are very brilliant, and there is plenty of variety. A ring of scarlet Pelargoniums and a margin of white Lobelias surround them. The other beds, which were chiefly composed of subtropical plants, are also worthy of notice, as is the beautiful border of mixed plants near.

From Hyde Park the visitor may pass into Kensington Gardens. A long border of mixed plants stretches on each side of the footpath, which starts from near the Albert Memorial and runs parallel with Kensington Gore almost to the end of the Gardens. This is not so attractive as it might easily be made, but the walk is a popular promenade. Some pretty flower beds may also be seen in front of the Ivy-covered cottage in the Gardens, which usually attract considerable attention. The beds in front of Kensington Palace should be visited ; they are prettily laid out. Pelargoniums in variety are employed very plentifully, and a long border composed of a row of Tagetes signata pumila at the back, then a row of scarlet Pelargoniums, next Ageratum, and white Lobelia in the front row, is particularly attractive.—P.

REGENTS PARK.

Although the recent heavy rains have considerably impaired the effect of the flower bedding in this fine park it is well worthy of inspection, and a visit should be paid at the earliest opportunity. Bedding is not conducted on a very extensive scale, nor is it particularly varied in character. There are no elaborate designs in carpet or ordinary bedding, but there are some very pretty beds and borders to be seen, and the effect is not less pleasant because secured by simple means. Many of our readers are probably aware that the flower beds in this Park are situated in what is known as the Broad Avenue, through which visitors pass on their way to the Zoological Gardens. The majority of the beds are arranged in one large group. They are composed chiefly of Pelargoniums of sorts, banded with Coleus or Iresine, and edged with Lobelias. The Pelargoniums have been very good indeed this year, but the rain, of course, has dashed many of the flowers to pieces, and much of the bloom has been removed in taking the cuttings required for next year's display. Notwithstanding this they still present a brilliant appearance.

Many of the mixed beds are noteworthy. We will describe a few of the most effective of them. A large bed of Fuchsias and blue and yellow Pansies, with the handsome foliage of Chamæpeuce diacantha, had an admirable effect, which was enhanced by a band of scarlet Tropæolums and a margin of Echeveria secunda glauca. We have seen few more effective beds than this. Several circular beds of Acacia lophantha, graceful in foliage, with an outer ring of the Marigold-like Gazania splendens, were also good.

In another large bed the gay flowers of the annual Chrysanthemums were contrasting with the broad handsome foliage and stately growth of Solanum marginatum, edgings of Zonal Pelargoniums and Pansies completing the bed. The pure white drooping flowers of Abutilon Boule de Neige were attractive in another example, which was carpeted with a fragrant mass of Musk, surrounded by a ring of scarlet Pelargoniums, and edged with Golden Feather. The prettily mottled foliage of Abutilon niveum aureum maculatum was seen to good advantage in a bed carpeted

with *Mentha Pulegium gibraltarica*, and edged with *Pelargoniums* and *Golden Feather*.

Some fine beds of *Cannas* and *Solanums* are imposing. The former are bordered by crimson *Pelargoniums* edged with blue *Ageratums*, and the latter by *Pentstemons*, varied and showy, *Pelargoniums*, and *Ageratum*. Subtropical gardening is not carried out on a large scale in Regent's Park, but what there is is effective.

One of the most brilliant beds at the present time is composed of single *Dahlias*, with bands of scarlet *Pelargoniums*, yellow *Calceolarias*, *Coleuses*, and the pretty variegated *Grass*, *Dactylis glomerata* variegata. The border itself is remarkably pretty, but the *Dahlias* are superb. The brilliancy and variety of colour in these beautiful flowers is remarkable. They are planted much more largely than the double varieties in the parks at the present time, and are unquestionably more popular.

Liliums are plentiful in Regent's Park just now, as also are *Gladioli*. Beds of these handsome flowers in mixture are as showy as anything that can be imagined. *Gladiolus brenchleyensis* is most largely grown; it is one of the earliest, and is of a brilliant scarlet colour. It should be grown by everyone. Many attractive ribbon borders are also noticeable. One is particularly good. It is composed of scarlet *Pelargoniums* in the back row, the silvery foliage of *Centaurea candidissima* in the middle, and blue *Lobelias* in the front.

Many handsome banks and borders of mixed shrubs and flowers also attract attention, and altogether the Park is well worthy of a visit.

THE BEDDING IN THE ZOOLOGICAL GARDENS, REGENT'S PARK.

Among the many garden improvements which have been effected in the public parks of London during the last six or eight years, I do not know of any where so much has been accomplished as in the Zoological Gardens, Regent's Park. Many who only know the "Zoo" imperfectly may be under the impression that it contains little or nothing of interest beyond a unique collection of representatives of the animal kingdom, but many of the houses which hold these are adorned with excellently grown plants, and the flower beds and borders are filled with a choice collection of the most improved forms of bedding plants. While going through these gardens several years ago I came away with the impression that the plants were rather scarce, and Mr. Young, the able Superintendent, must have been of that opinion too, as the capital stock now possessed proves that he knew what was wanted. The beds are beautifully furnished, and the vigour of the plants is all that could be desired. The display of flowers and the exceedingly rich colours of the carpet and foliage plants generally are highly attractive and very pleasing. Carters' *Prima Donna* *Lobelia* is largely used, and it is very pretty. At the flower garden in front of the refreshment rooms there are many circular, square, and other shaped beds, chiefly laid out on the grass. One side of it is edged with an undulating flower border 85 yards in length and 15 feet in width. Behind this there are many fine trees, to the immediate front the flower beds just referred to, and further on the garden generally. The border is planted ribbon fashion. The first line is a row of *Dactylis glomerata* variegata backed with *Viola Tory*, then comes *Calceolaria Golden Gem*, behind which comes in *Vesuvius Pelargonium*, white *Centaurea* being further back still, then the pink *Pelargonium* Mrs. Holden, and behind this the dark *Calceolaria Bijou*, the whole forming an old-fashioned beautiful border, just such a one as made Mr. D. Thomson's flower garden work famous at Archerfield, where, by the way, Mr. Young gained his first knowledge of gardening.

Amongst the small beds there are some beautiful carpet designs, *Alternantheras* being used in variety, and *Pyrethrum selaginoides* is used with telling effect. There are several beds of tall and dwarf succulents, which are interesting. The blue Gum Tree is used in several of the foliage arrangements. Some of them have been out for two years, and are 14 feet high. One bed with a centre of the Rev. F. Atkinson *Pelargonium*, edged with Robert Fish *Pelargonium*, and margined with Carters' Blue King *Lobelia*, was very pretty. Another with a centre of Mrs. Holden *Pelargonium*, edged with Crystal Palace *Gem*, and margined with *Vesuvius Tropæolum*, was very showy. John Gibbons *Pelargonium* was used in several beds, and its immense trusses of showy flowers were very attractive.

Several beds planted with *Phormiums*, *Palms*, *Cannas*, *Dracænas*, *Aralias*, *Castor Oil Plants*, and others of a tropical type were an agreeable change from the masses of flowers. *Dracæna australis*, with stems about 18 feet in height, and fine massive heads, is introduced here and there with grand effect. Herbaceous borders are extensive and well stocked. The small ponds, which are used for the accommodation of beautiful waterfowl, have some small islands, and these and the margins are clothed with many kinds of wild Grasses, Irises, &c., and appear as natural in aspect as any of the wilds in Scotland or Wales.

The best of all the carpet beds is one 51 feet in length and 12 feet wide, which is situated between the lions' dens and the antelope house. A number of lyres are distinctly traced out on various coloured grounds, the plants used being the choicest for this work, but as I fear my explanation would not make such a good piece quite clear, it will be best understood by a sketch I will send you at another time. Visitors here should not miss this bed. Going from the lions to the monkey house, and just in front of the bears' dens, there are some beautifully filled beds, one batch of figures being chiefly occupied with dark-leaved *Coleuses*, *Iresine*, white *Lobelia*, and Mrs. Pollock *Pelargonium*. There are many small *Palms* used in the centres, and this part looked as peculiar and interesting as any, the dark colour predominating so much as to give it quite an original appearance. Behind this there is a ribbon border, beginning with *Echeveria glauca*, followed with *Alternanthera paronychioides* major, *Snowball*

Lobelia, Young's Seedling *Tropæolum*, very bright Flower of Spring *Pelargonium*, *Ageratum* Her Majesty, and Golden Harry Hieover *Pelargonium*. Amongst flowers Henry Jacoby *Pelargonium* is very conspicuous here, and all the best of Messrs. Pearson's *Pelargoniums* are used with capital effect. Near to the western aviary there is a large border filled with the different varieties of East Lothian Stocks, the plants being very healthy and promising well for a fine display of fragrant double flowers.

On coming in at the main entrance there is a straight walk 90 yards in length, and on each side of this there is a border filled with subtropical plants backed with shrubs of many choice kinds. Near to the band stand there used to be a great want of shade, but this has now been obviated in a great measure by moving some very large Lime trees to this part. They are specimens 20 feet or more in height with fine bushy heads, and they have succeeded uncommonly well, being well clothed with leaves, and giving pleasant shade. The main stems and the largest of the branches have been incased in hay bands, and in warm dry weather these are moistened occasionally, which keeps the bark from shrivelling. This transplanting was a heavy undertaking well managed.—L. L. M.

NOTES ON GRAPES AT THE RECENT EDINBURGH SHOW.

GRAPES were shown in great quantity and remarkably good quality at the Show in Edinburgh. Of course, there were some bunches of the late varieties that were hardly ripe, but it was apparent that only want of time was to be held accountable for that deficiency. Another month would have seen them in greater perfection.

Among the comparatively new Grapes shown Alnwick Seedling was conspicuous for its fine appearance. It is eminently suited for an exhibition Grape, and is really a fine-looking variety when seen as displayed in Edinburgh.

Madresfield Court was hardly "up," but still was shown in good style; evidently it does not crack with everyone.

Duke of Buccleuch was seen to advantage. Two baskets exhibited by Messrs. Thomson, Clovenfords, attracted much attention, and received a special award from the Judges for "packing and general excellence." There were 24 lbs. in the two baskets, packed as if for market, not a speck of bloom being removed or a single berry shaken. Mr. Kirk, from Alloa, had a grand bunch of the "Duke," the berries being enormous and very regular. Another fortnight would have added the golden hue that was the only thing required to make the bunch perfect. Mr. McIndoe showed it in good condition.

Golden Champion was also exhibited in fine order, not a trace of the "spot" that sometimes is seen disfiguring it was visible. The berries were of a beautiful transparent amber colour that showed it was in proper condition for the dessert table.

Duchess of Buccleuch was also shown in first-rate condition, the berries being quite golden. It carried the day for the best-flavoured white. It is pleasant to notice that the last three mentioned Grapes, which have all been the subjects of much difference of opinion, and have been the cause of much warm discussion in the horticultural papers, are grown and appreciated by not a few. Anyone seeing them as displayed at Edinburgh last week must be very prejudiced if they did not admit that they are Grapes worthy of the utmost care and attention, as, when successfully grown, they are most delicious, and in the cases of the Champion and Duke also most splendid in appearance.

Gros Maroc was also seen in grand condition. It evidently will be more and more grown as years roll on. Its place will undoubtedly be as a Grape for use about the end of October and in November. Nothing can exceed it for a black Grape for market about the time mentioned; its wonderful bloom, grand berry, and compact bunch all make it look handsome in baskets or trays. Though deficient in flavour, it is not much behind Alicante in that matter, and may fairly claim equality with Gros Colman.

Golden Queen was also displayed to advantage, some very nice bunches, good in berry and well-coloured, being staged.

Taken altogether the Grapes were good, allowance, of course, being made for the exhibition of a few bunches that only required time to make them right. At the Show which is to be held in Edinburgh in November it may be expected that many late Grapes will be shown. They will then be more in season.

Mr. Hammond deserves great commendation for the splendid style in which he brought his Grapes across the border, and staged them in the "grey metropolis of the north." There is some talk of having an exhibition next year which would approach an "international" in connection with the General International Exhibition which Edinburgh hopes to have next season. If anything comes of the suggestion, every effort, it is to be hoped, will be made to have a grand display of Grapes from all quarters. To procure this, handsome prizes must be offered. However, whether such an exhibition be held or not, it may safely be said that Grape-growing is being carried on in the country by many with conspicuous skill and apparent success. Long may this continue! Long may we see tables groaning under heavy loads of first-class Grapes at all our autumn and winter shows!

A word of advice to young gardeners anxious to shine in competition was spoken at the dinner in connection with the Show by Mr. Hammond. It is worthy of remembrance by all. He said:—"Let me counsel all young gardeners to remember that their first duty is to serve their employers well; to crop Vines and other things, not solely with a view to showing, but to meet the requirements of their situations. Then if there are Grapes or other things fit to show, and employers consent, let them

exhibit and reap their due reward." If this advice is acted upon by any young man beginning his career as a head gardener, he will, I feel sure, never regret doing as Mr. Hammond suggests. Too many employers have cause to feel annoyed at "showing" being considered before themselves, and it is not to be wondered at that they sometimes stop it.—S.

BEDDING VIOLAS.

I HAVE read with pleasure the remarks of your correspondent, Mr. W. Dean, at page 178, concerning these both charming and useful bedding plants. I can endorse much which he has written respecting them. As Mr. Dean very rightly observes, the hot dry weather has thoroughly tested the staying powers and constitutions of these plants; not that we should discard them on this account, for the test has been exceptional, and not a few will discover which have suffered most—the late-spring or the early-autumn-planted. If spring effect is desired the earlier planting is done in autumn the greater the chances of success; if for summer bedders transplant in autumn. Whether or not the *Viola* suffers most in dry summers in light or heavy soils I have not quite determined. There are drawbacks in both soils. Deep cultivation and heavy mulchings of short manure, spent hops, or similar material, is the means of avoiding the evils of a dry season. Yellow Dwarf, the gem of all yellows, scarcely exceeding in height that of the general strain of *Lobelia*, unequalled in its floriferousness, has suffered terribly this season, and I doubt if a sufficient stock will be saved to keep up the supply. The same remark may be applied with equal force to the majority of the Queen of Spring strain, from which Yellow Dwarf is a seedling. These lack the constitution requisite to carry them through such a summer as this has been; and seeing that constitution is of the highest possible value in connection with these for bedding purposes, we have yet to continue our experiments in this direction, and endeavour to obtain size of flower and free blooming with the compact habit of Yellow Dwarf, and at the same time possessing the vigour displayed by *lutea perfecta* and *Ardwell Gem*—the latter a primrose, an early and continuous bloomer, very desirable. Failure seems very general among the yellows, while at the same time whites, blues, and purples can be spoken of much more favourably. Even at this late date (September 10th) I have lovely blossoms of Countess of Hopetoun, which, as a white, surpasses any variety known to me. It is of short sturdy habit, and free flowering. Next in whites is the highly fragrant Mrs. Gray, and then if we want the other extreme for contrast we can get supplied with it in Archie Grant, an exquisite dark violet blue, with well-rounded flowers, and a capital summer bedder; but as a spring bedder nothing can equal True Blue. It is well to remind the readers of the Journal that these *Violas* are among the most useful and attractive plants in the spring garden, and that it is impossible to overrate the value of many for general decorative purposes.—J.

CECIL LODGE, ABBOTS LANGLEY.

CECIL LODGE, the country seat of Howard Gilliat, Esq., is situated in the quaint old parish of Abbots Langley in Hertfordshire, and not far distant from the main line of the London and North-Western Railway. The ride from Euston to King's Langley, which is the nearest station to Abbots Langley, the lakes being about a mile and a half distant, occupies about three-quarters of an hour, during which you traverse an interesting portion of Middlesex and the picturesque vale of Herts. The latter county, or rather the portion through which you pass to King's Langley, is boldly undulated, the frequent ranges of hills richly clothed with trees, the pleasant well-watered and cultivated valleys, with peaceful-looking rural farmsteads, and villages with their quaint old-fashion churches, are scenes which make a favourable impression on the traveller.

Two centuries ago these peaceful valleys were not so quiet as they are now, as hereabouts during the wars of Cromwell were many conflicts. But it is not so much with the history of the county that we are now concerned, as with the gardens of Cecil Lodge. Accordingly, alighting at King's Langley, a walk of a mile and a half, nearly all uphill, brings us to the prettily situated house of Mr. Vincent, the able gardener at Cecil Lodge. Mr. Vincent's domicile is some distance from the garden, but it is comfortable spacious house, with a considerable amount of lawn in front.

The mansion is a commodious structure of a not very elaborate style of architecture, and was, previous to Mr. Gilliat coming into possession, the residence of the Right Hon. W. H. Smith, M.P. It is situated in a somewhat elevated position, and commands extensive views of the charming scenery of the surrounding country, with Welling Abbey in the distance. The general style of the pleasure grounds is very pleasing, there being a boldness of outline and originality of design not frequently met with. There has not been any attempt to introduce a number of meaningless walks, and thus cut up and disfigure the beauty of the lawn, neither are too many beds allowed to interrupt the vision from the principal windows. Beds of Roses, Pansies, *Polyanthus*, *Mignonette*, *Heliotrope*, *Pelargoniums*, and other useful and sweet-scented flowers are skilfully disposed on the margins of the lawn, and borders of old-fashion flowers form a margin to the shrubberies.

A few remarkably fine specimens of Conifers are a special feature in the pleasure grounds. A thoroughly robust and handsome specimen of *Abies Smithiana* has attained a great size, also a *Pinus insignis*, *Cedrus Libani*, and *C. Deodara*. There is a noble example of the Oriental Plane, and a similar one of the British Oak, which cover a large area. A large specimen of the Judas Tree (*Cercis siliquastrum*) is there, as well as a few other important shrubs and trees. The grass seemed of a very fine texture,

and is kept in excellent trim. One not very common feature was a number of bulb beds formed by planting Crocuses of various colours and Daffodils in geometrical outlines under the shade of the large trees. In the spring these bulbs shoot up and flower through the sward, and being planted with various colours, they are very effective. The majority of the bulbs had, we believe, been planted for years. This simple plan is therefore commendable to everyone who can afford to plant a few bulbs under the shade of trees for spring flowering. Passing towards the vegetable gardens we entered the Rose garden, which contains some of the best varieties. On the one side of the latter is a small lake, in which Water Lilies abound, and quantities of the *Fleur de Lis* (*Iris Pseudacorus*). On the Rose garden side of the lake is a series of beds devoted to growing Watercress, which is in much request for the family winter and summer. These beds are about 4 feet wide and 1 foot deep, the sides and bottom being of brick cemented over. There is a small tap at the top end of the beds, and through this water is kept constantly trickling at a slow rate, thereby causing a constant motion and supply of water to pass through the tanks. The beds are renewed twice a year, in the autumn planted with Winter Cress, and in the spring with Summer Cress. These beds are very satisfactory, and where this salad is esteemed, and space permits, a small bed might easily be managed.

The vegetable garden is of considerable extent. Good crops of Peas, Onions, Potatoes, and indeed all kinds of vegetables, are grown in the best possible condition. Bush fruit and Strawberries exist in quantity, and a few good trees of Pears, Plums, are to be seen on the walls and the sides of the garden only. A bower of skilfully trained Pear trees is formed over the meeting points of the four walks in the centre of the garden. This serves a twofold purpose—affords a shady arbour, and produces fruit at the same time. New borders are being formed on one side of this garden for growing the best varieties of herbaceous plants. There is an outside slip to the vegetable garden which is planted with standard Roses, and also acts as a nursery for raising plants for spring bedding and other purposes. There are some pleasant walks around this, and some fine specimens of *Wellingtonia gigantea*, *Pinus insignis*, *Cryptomeria japonica*, *Cupressus Lawsoniana*, Cedars, &c. One of these walks leads to a pretty dell, skilfully formed of rockwork, and consisting of miniature waterfalls and caves.

The vineries, Peach and Fig houses are situated along the top of the vegetable garden, and although the former are not of modern construction, yet Mr. Vincent does not fail to make them answer his purpose and produce good samples of Grapes, though he has for want of room to make his vineries do duty as plant houses too. One house has, in addition to Vines, to grow pot Roses, another Geraniums, and so on, to supply the requirements of the family, who reside for a greater part of the year in town. Another house was carrying a heavy and well-finished crop of Black Hamburgs, another Muscats, and so on. A house in the centre of the range is full of useful stove plants of a miscellaneous type, another house to growing Roses, such as *Maréchal Niel*. There are two Peach houses, and both are filled with healthy free-bearing trees of Royal George, Late Admirable, and Rivers' Orange Nectarine.

The Fig house is a special feature, as it certainly deserves to be, for better grown and fruited examples of Brown Turkey we have never seen. The trees are trained on a trellis close to the glass, and nearly every shoot was carrying fine fruit. Plenty of water and abundance of air appears to be Mr. Vincent's practice. Tomatoes were being grown in pots against the back wall of this house, and very good they were.

In another portion of the vegetable garden there is a very large span-roof orchard house, in which there are planted out along the sides Cherries and Peaches, and in the centre standard Peach and Nectarine trees, all of which were carrying a more or less heavy crop of fruit. Mr. Vincent grows a vast quantity of the best varieties of *Chrysanthemums*, which he finds to be of great service to him in keeping up a supply of cut bloom from November until an advanced period in the new year. This large orchard house is specially valuable for housing such a great quantity of *Chrysanthemums*. Another span-roof structure, divided into two compartments, is filled, one with Cucumbers, and the other used as a propagating house. Frames are filled with the lovely Neapolitan Violets. This variety Mr. Vincent prefers to grow entirely in a frame, and his plants certainly testify that he is doing the right thing. Adjacent is a Mushroom house, which is used chiefly for winter work, the young men's rooms, tool, and other sheds. Water is rather scarce here, and what they have has to be pumped up by means of a steam-engine from a very deep well in the garden, and then forced up into an immense tank raised on powerful iron columns connected by powerful trusses to the height of 100 feet. The water from this tank can thus be forced to any part of the grounds. Taken altogether, our visit to Cecil Lodge and Abbots Langley was a very pleasant one, and although we have not dwelt in detail on all the many objects of note, yet we saw the good effects of the marked improvement which Mr. Vincent is gradually making under many difficulties in the several departments of the garden under his charge.—T. W. S.

CEANOTHUS DENTATUS.

WITH a few exceptions the plants of the Buckthorn family are not remarkable for the beauty of their flowers; the *Ceanothus*, introduced to this country from California, will, however, do much to increase the interest attached to this tribe. The flowers are, individually, very small, but this minuteness is fully compensated for by the profusion with which they are produced. The foliage, too, is extremely neat, especially in the

species selected for our illustration, and which is, perhaps, the most interesting of the genus. Some fears were entertained that the *Ceanothus dentatus* would prove only half-hardy; the specimen from which our figure was drawn was, however, taken from a plant which had been fully exposed on a south wall throughout the winter without any protection whatever, and as its capability of resisting our winters will doubtless increase with the age of the plant, we trust that this charming species may be considered acclimatised. Like many other shrubs cultivated in the open air, it would probably suffer considerably from severe frost; but as the peculiar habit of growth, both of *dentatus* and most of the other species, renders it desirable that they should be planted against a wall, the protection of matting can be afforded them without entailing much trouble or expense.

The *Ceanothus dentatus* is a branched evergreen shrub, growing to the height of 7 or 8 feet, perhaps more. The whole of it is covered with down, that on the branches being of a rusty colour. The leaves are very small, the largest scarcely exceeding three-quarters of an inch in length, with coarse teeth, a revolute margin, and a pair of small scale-like stipules at their base. The foliage has a peculiar, but to us not unpleasant odour, due to the numerous minute glands on the edge of the leaves, which are, however, hardly perceptible without the aid of a lens. These glands are said to be found only on this species, and they afford therefore



Fig. 45.—*Ceanothus dentatus*.

a ready means of discrimination. The flowers are produced in stalked heads, sometimes roundish, but in the wild plants much longer. Although small, the number in each head is considerable, and their bright bluish-violet tint gives the plant when in bloom an exceedingly attractive appearance. A detached blossom is represented on an enlarged scale in the corner of our engraving, chiefly for the purpose of showing the peculiar form of the petals of the plants of this order. These, it will be seen, are much longer than the sepals; narrow and hooded (cucullate) at the tips in a curious manner, the stamens being inserted opposite the petals.

With regard to the culture of the different species of *Ceanothus* from California, they all appear to thrive in peat, either alone or mixed with a little loam. Their growth is somewhat straggling, and the shoots, therefore, require frequent stopping during the summer; but as the flowers are borne upon the shoots of the previous year, this shortening process must not be performed late in the season. In the Osborne Gardens *C. dentatus* is trained on the horizontal system, and after flowering the secondary branches are shortened back to within an inch or two of the main laterals.

The species are readily propagated by seeds, which are sometimes matured, and which should be sown soon after gathering, or they will no

readily vegetate; they may also be increased by cuttings of the half-ripened wood under a handglass.

We have selected *dentatus* as being, on the whole, the most desirable species; but it forms but one of a group introduced, we believe, nearly about the same time, by the Horticultural Society's collector, Mr. Hartweg, and which are all well deserving attention. The *C. papillosus* and *C. rigidus* are scarcely less interesting than that we have figured, and are a shade more hardy; indeed, we believe they may be said to be perfectly so. The foliage of *C. papillosus* is much larger than that of *dentatus*, and has its surface covered with pimple-like elevations, to which it owes its specific name. It is of more vigorous growth than the Toothed *Ceanothe*, and may be treated in a similar manner. *C. rigidus* fully equals in interest *papillosus*, but is less branching in its habit. It is, probably, hardy enough for cultivation as a bush or standard in this country. Two species of more recent introduction, *C. floribundus* and *C. Lobbianus*, deserve especial mention as highly ornamental subjects. Both have blue flowers copiously produced.

One species, the *C. americanus*, is known as the New Jersey Tea, from the circumstance of its having been used in the American War of Independence as a substitute for the Chinese plant. Numerous varieties of this deciduous species have been raised in European gardens, some of which are well deserving of cultivation. As we may not soon have occasion to notice this order again, it may be worth while to remark that to the Buckthorn tribe belongs the Lotus of the ancients and the Jujube tree, both of them species of *Zizyphus*, though the articles sold as jujubes probably contain as much of the genuine fruit as the perfumer's bear's grease does of the real Bruin.—W. T.

NOTES ON CHRYSANTHEMUMS.

CHRYSANTHEMUM PROSPECTS IN THE NORTH.—Lately I have had an opportunity of seeing a great many *Chrysanthemum* plants in the neighbourhood of Liverpool, and, judging from their appearance, I look forward to seeing some grand flowers from that locality during the coming season. The weather there has been specially favourable to the growth of the plants, which have had plenty of sun and refreshing showers from time to time. The weather in the south of England has not been near so favourable, as the drought has been so long-continued and the sun more powerful, causing the plants to require more water during the day, which is not always favourable to their well-being, particularly if at all neglected, as is sometimes the case through stress of work in other departments. The plants I saw in the north had made strong growth, while the foliage was leathery, luxuriant right down to the pot, and of a red green colour, a sure indication that they were "doing" as well as could be wished. The buds were being "taken" at a suitable time for the varieties, and were of good shape, not a small item in the successful production of good flowers.

Chrysanthemums are increasing in popularity in that district judging from the number of plants now grown. Liverpool has long been noted for the production of the best specimens of cut *Chrysanthemums*, and now that growers in other parts are running them hard a greater spirit of emulation has set in to maintain the reputation gained in years gone by. The varieties have increased, too, generally, and vast improvements are noted now in the colours, which are much more decided than formerly, and this not at the expense of size or form. I look forward to seeing several new good varieties during the coming season. As interest increases so does the craving for novelties, hence the cause of so many worthless varieties being pushed into commerce; it is a sure sign that they are more appreciated now than was the case some few years since, judging from the number of societies which offer tempting prizes. It has been said that *Chrysanthemum*-growing is only in its infancy; this I question very much. If such great changes are to take place it must be done by the introduction of an entire set of new varieties, as I fancy that all has been obtained of existing varieties that can be had by cultivation; and my opinion in this is shared by many good growers having a wide experience.

EXHIBITING CHRYSANTHEMUMS.—The remarks of "*Chrysanthemum*" (page 245) on exhibiting are well timed and very sensible. It is a question which has puzzled not a few exhibitors. It is a well-known fact that it is much easier to set up a stand of twenty-four blooms in eighteen varieties than to have them all distinct; it is generally the last two or three blooms that spoil an otherwise good stand. I have an idea that the rule of admitting eighteen varieties in a stand of twenty-four blooms has been created by members of committees who know the trouble entailed in staging twenty-four distinct as a way out of the difficulty. The managers of societies also know quite well how much more massive a stand of twenty-four blooms looks than one of eighteen only, while more competitors can be obtained where eighteen varieties in twenty-four blooms are required. Making a show attractive to the ordinary spectator and satisfying all "critics" is difficult to manage successfully in all cases. No comparison can be made between two stands of flowers, one having eighteen varieties only, the remainder duplicates, and the other stand of twenty-four all distinct. I have heard many people say how much superior was one stand of blooms to another when comparing two staged as stated above, but if the duplicate blooms were withdrawn and others substituted

to make it distinct, a great difference would be noticeable as compared with the former occupants. I consider judges are quite right in awarding the prizes to the eighteen variety stand over the one with twenty-four distinct (of course supposing the necessary quality to be there) for the reason that a bloom of Lady Slade, for instance, no matter how good it may be, cannot compare with a duplicate bloom of Lord Alcester or any other of the Queen family. As long as an exhibitor complies with the conditions of the schedule that is all that is necessary. If it is considered to be a fault offering prizes for twenty-four blooms in eighteen varieties, the remedy is quite easy in making the classes for eighteen blooms only, and they to be all distinct. For my part I have no fault to find with the system. I am thoroughly content, as an exhibitor, to leave the decision of awarding the prizes in the hands of the judges.

For the information of "Chrysanthemum," I may say that when I have completed the experiments I have in hand I hope to redeem the promise I made in a former note, as no writings which I have yet seen make the matter sufficiently clear to the inexperienced grower.—E. MOLYNEUX.

EXHIBITING CHRYSANTHEMUMS.—Your correspondent, "Chrysanthemum," in the last paragraph of his note has done what I had thought of doing—namely, given Mr. Molyneux a reminder of the promise he made some months ago, and which up to now he has failed to fulfil. It was just as the Chrysanthemum season was drawing to a conclusion that he treated us to a little lore in the Journal, but since then we have heard nothing from him on the subject, although, no doubt, many like myself have been on the look-out for what he promised. My object of the writer is to induce him to write if he will, although it would not be of much benefit this season to us. I hope Mr. Molyneux is not one of those men who does not intend for others to benefit by his teachings; he may have many grounds for excuse, which no one can deny, but I should hardly fancy he can see "a red light."—A YOUNG BEGINNER.

EXHIBITING CHRYSANTHEMUMS.—With reference to the letter from "Chrysanthemum" in the Journal of the 17th inst., I take it that one object of societies in providing classes for twenty-four blooms of not less than eighteen varieties, is to secure the most imposing stands possible. Therefore it follows almost as a matter of course that a stand of eighteen varieties would take precedence over one of twenty-four varieties, but with some smaller blooms, notwithstanding that in the case of the latter it might be that their natural growth was smaller. If this were not so we should soon have small varieties, say Mrs. George Rundle, taking equal rank with Empress of India.—WORDSWORTH.

CHRYSANTHEMUMS AT THE TEMPLE GARDENS.—The plants at the Inner Temple are looking well, and Mr. Newton is making his usual preparations for the annual display. This will be held in the glass house near the Thames Embankment, a very convenient position for visitors. I am informed that there is to be no public exhibition of Chrysanthemums in the Middle Temple this season, but I hope the rumour is unfounded, for Mr. Wright has so steadily advanced the character of the show there that it deserves to rank amongst the best in the metropolis.—A.

TREE PÆONIES.

(Continued from page 258.)

For this purpose select two or three-year-old wood, with plenty of buds upon it, cutting it to single eyes, and at the same time removing one half of the wood, or, in plainer language, adopt the means employed in budding, excepting that in this case the wood must remain with the bud, and not detached from it: the plants thus raised, though small, are best adapted for pot culture. The next mode is by grafting, which is the best means of all, and attended with such good results generally that for general use it is the most expedient. The present is a good time, as there are plenty of good plump buds ready, and then comes the stock, which is generally to be found in most gardens. *P. edulis* makes the best stock, though they may be grafted upon almost any of the herbaceous section. Select some ordinary-sized tubers of these, and having obtained good buds (avoiding flower buds as much as possible), graft them in the usual way, tying them firmly, and making them air and watertight by means of grafting wax. They may then be potted, using pots according to the size of the fleshy roots; and to avoid using larger pots than necessary, for these roots will not bend in any way, it will be well to select moderate-sized tubers for stocks, for they need to be buried below the graft, which is better performed in the potting than by any after covering. When sufficient has been done they should be placed in a cold frame or pit, and if plunged in cocoa-nut fibre above the rim of the pots, so much the better. They should not be watered for the first few days. This, however, depends on the weather itself at the time the operation is performed, and consequently the operator will have to use judgment and discretion in the matter. They will require to be kept close during the first two or three weeks, and shaded on all sunny occasions. A union between stock and scion will have taken place by this time, when air may be admitted to them. In this place they may remain till spring, and being plunged will require little or no water, and at the same time be safe from frosts. It must not be overlooked that in all cases of after-management care must be taken to bury them below the graft, from which point they will in time emit roots, and consequently be not wholly dependent on the stock for their support. The last means of propagating them is by seeds, an operation of great interest, seeing the success which has attended the labours of some continental florists, and which have

resulted in the gigantic blooms of which I have already spoken. Nor is there any reason why they should rest here. The seeds are best sown as soon as fully ripe, and provided they do not germinate by the spring of the year ensuing, they may be placed in gentle heat. The progress of the young plants will depend to a great extent upon the liberal treatment which they receive.

Before concluding these remarks I have yet one more point in favour of their more general use, this time as pot plants for conservatory decoration. These may be had in flower in the early part of February without undue forcing, and should be protected in frames and brought on gradually. And who will gainsay the telling effect which a few will produce? There is yet time to procure them and give them a trial, for it well repays the outlay; and having once tried them, I feel sure that many will be aroused to a full sense of their usefulness and high decorative qualities, and that ere long these noble plants will be lifted from their now neglected state to that prominent position which their merits entitle them to hold.—E. JENKINS.

CACTUSES.

It is astonishing what an interest the New Orleans Exhibition has awakened in Cacti. True, they only need to be seen to be admired, and yet the majority of florists cannot bear them—perhaps because there is no money in them. I have a collection of about 400 varieties, mostly small plants, but good bloomers; and even when not in bloom they are always interesting to me. To watch the plants grow, develop their many-coloured spines, form their buds, expand their beautiful flowers and bring forth their brilliant seed-pods, is to me just as fascinating as to look over a collection of valuable paintings. When I say florists can't bear them I must except our friend Mr. John Thorpe, who in answer to that imputation writes me as follows: "You are mistaken when you say I hate Cacti; I love them, but in this greed to live there is no opportunity to make Cacti what they will be in twenty-five years. When I tell you that two of my most intimate friends are Pfersdorff of Paris, a man that has actually slept with a Turcs-head for his pillow, and Mr. Peacock of Hammersmith, London, who has had *Cereus cylindricus* for a bed-fellow, you will not say your friend John Thorpe hates Cacti." Mr. Thorpe, by the way, has probably the finest *Pilocereus senilis* in this country. It stands 46 inches high.

Although for some years I have been supplying leading European houses with rare Cacti, yet I found it almost impossible to get anything like a complete collection for my private use; so at last I have concluded to send to Europe for specimens of every variety catalogued there, which amounts to nearly 900. It is probably about the best way to get them correctly named, which is a very important item. I have had much trouble in this respect, with some thirty correspondents in Mexico and out West. Ask them for *Echinocactus Sileri*, *Astrophytum myriostigma*, or the Red Night-blooming *Cereus*, and they answer: "Oh, yes, we have them." When at last you pay ten dollars expressage on a box of samples, you get some *Opuntias* or a *Cereus peruvianus*.

Many Cacti may well be grown for their beauty of form and spines; for instance, *Echinocactus Sileri*, Whipplei, *viridescens*, &c. I think one of the handsomest is *E. Ottonis*; the flower also is splendid although not fragrant. *Cereus* are my favourites, especially the night-bloomers. I have a *C. nyciticaulis*, raised from a 3-inch cutting three years ago, that to this date (July 6th) has opened sixteen flowers this season, and has yet twenty-one buds to open. Until this year I kept it growing to one stem in a 6-inch pot, and trained it along the roof of my small greenhouse, where it received plenty of sunlight during winter. It made a growth of 15 feet in two seasons. I have about ten other varieties of night-bloomers, but I find but little variation in the flowers, except as to size and perfume. The true red bloomer, *Cereus Schmidtii*, has not bloomed for me yet, neither has the variety sent to me from Mexico as a red night-bloomer, and of which I do not know the name.

The *Astrophytum myriostigma*, called in Europe "Bonnet d'Evêque," (Bishop's hood) is a very interesting Cactus, being, I believe, the only one without spines. I don't see how *Aloe longiaristata* could ever have been mistaken for it.—A. BLANC (in *American Gardeners' Monthly*).

THE BURTON CONSTABLE NURSERIES.

BUT few people can have any idea that within so short a distance of Hull there are nurseries so extensive and productive as those which have been established by Mr. E. P. Dixon at Burton Constable. About two miles from the Burton Constable station, on the Hull and Hornsea Railway, there are under the most perfect cultivation ten acres of land which are devoted to the rearing and growth principally of forest trees, ornamental trees and shrubs, fruit trees and Roses, and it was a rare treat we had the other day in going over these well-cultivated and productive grounds, which were formerly the kitchen gardens and the sites of the vineries connected with that palatial residence of the Constables, Burton Constable, which is not now occupied by any member of the family. The whole of the land occupied in the ten acres is under the most complete and scientific cultivation by Mr. Dixon, whose fame as a seedsman has extended far beyond the borders even of his native land, for he does a large export trade to America, Australia, and the Continent of Europe in seeds, shrubs, and fruit trees. Burton Constable is not a great seed-raising ground, but still it may indicate the extent and importance of this trade if we state that on our arrival at these famous nurseries we found that there had just been thrashed out about three tons of Turnip seed, which was about to be despatched to those extensive seed warehouses in High Street, Hull, which have previously been described in our columns. As we have said, however, seed-producing is not the object of these nurseries. They are devoted to shrubs and trees of all kinds, and we saw them in all stages of grafting, budding, and striking. There are acres of standard Roses of the very best varieties known, acres of young

fruit trees, some of them only of last year's grafting, and many of these were bearing most profusely. The grounds are well protected from winds; and although at the time of our visit a fresh breeze was blowing its influence was not felt in the nurseries. There are, of course, some extensive vineries, and the Vines, which comprise some of the best known varieties, are just now in full bearing, and amongst the pendent bunches we noticed several which must have weighed 4 lbs. or 5 lbs. each. As we passed through those portions of the estate devoted to the rearing of ornamental shrubs we could not help thinking that the Special Parks Committee of the Hull Corporation, who are about shortly to plant the new Western Park, would do well to visit these nurseries, for there they would meet with trees and shrubs of all kinds, which would go far to making the new park one of the most attractive places near the borough, and not only attractive, but to a great extent instructive.

Amongst the ornamental trees and shrubs which we saw may be mentioned *Acer Negundo variegata*, *Cornus sibirica*, *Magnolia Soulangiana*, and many examples of *Cupressus Lawsoniana*, *Biota aurea*, &c., also *Picea Nordmaniana*, *Picea nobilis*, &c. There are also many specimens of the *Wellingtonia gigantea*, such as have been from time to time planted by Royal hands at Brantinghamthorpe. Amongst the ornamental shrubs, too, there was one which certainly ought to be more frequently seen in our gardens and parks. We refer to the Golden Elder, which has, as its name implies, a considerable proportion of yellow in its leaves, whilst it produces an abundant white bloom, and set against a dark background is most effective. The flowering shrubs include the *Rhus Cotinus*, *Spiræa* in endless variety, *Ligustrum lucidum*, *Lilacs* in great variety, *Viburnum opulus*, &c.

Amongst the fruit trees there are Grapes, Peaches, Apples, and Pears of the choicest and most prolific varieties, but perhaps the greatest feature of this department is the Raspberries. These are a variety first introduced by Mr. Dixon, and so successful has he been with them that his name is known in connection with them wherever such plants will grow. The name he has given to them is the Baumforth Seedling, and for some years now Mr. Dixon has largely exported the canes to America and the continent, and wherever they have been sent they have given the most complete satisfaction. The fruit is larger than any other Raspberry known, it is also unusually firm, and of the very richest flavour. Upwards of 2 tons of fruit have, during the season just closed, been gathered at the Burton Constable Nurseries. There is an immense variety of Conifers, those most effective plants which are now more fully appreciated for their delicate beauty and rich tints than at any previous time. The standard trees for park and avenue planting include the *Acer Schwedlerii*, *Acer pensylvanicum rubrum*, *gibbosum*, &c., *Limes*, *Elms*, and *Planes*, *Sycamore*, *Birch*, *Beech*, &c. There is also a very large collection of forest trees for cover planting, which are in the best possible condition for autumn planting, whilst the standard and half-standard *Roses* are amongst the best and healthiest we have seen. Any kind of fruit trees may be here obtained, whether standard or trained, and it was a most interesting sight to see the simple, but effective, measures adopted for the training of Apple, Pear, and Peach trees, so that on their removal from the nursery they have the right form for planting against walls or fences. The Burton Constable Nurseries are not the most extensive of Mr. Dixon's grounds, as he has added at least twenty-five acres to his business at Coniston, and it is at this place more particularly that he raises those seeds which have made his name famous all over the world. He has still another department, and that a most attractive one, at Sculcoates, where stove and greenhouse plants are grown in glass houses that cover one acre of land. From this notice it will be seen that Mr. Dixon's business is a most extensive one, and certainly a visit to his several establishments cannot fail to be both interesting and instructive, especially to those who have known the business from its small beginning. It is one that has always been watched over by the master's eye, and managed with that rare skill and tact which has had its reward in the development of what is now the most extensive nursery and seed-growing business in this part of the country.—(*Hull News*.)

THE LATE DROUGHT.—Mr. Robert D. Long has made valuable suggestions concerning the storage of rain water in good time for next year. We have been consulted by many whose gardens, lawns, and parks were in a pitiable condition, in the hope that provisions could be made to impound the excess in rainy seasons. In every district roof or surface water or springs can be stored in abundance during the winter by constructing underground tanks. Pipes with pumps or hydrants and hose are easily fixed and kept in good working order, and may frequently be available for service in the event of an outburst of fire.—MERRYWEATHER AND SONS, 63, Long Acre, W.C.



HARDY FRUIT GARDEN.

Preparations for Planting.—A dripping autumn is good for planting, and the frequent heavy downpour of rain which has been so general

recently has doubtless induced planters to set about the work earlier in the autumn than usual, in order that as many trees as possible may be settled in the soil before winter. Fruit trees are not planted so early as shrubs, but we must now make ready for the work by marking the stations and doing all that is necessary to have the soil in readiness for the trees, so that the planting may be done with dispatch and in the best way when we do set about it. The station for each fruit tree should consist of 72 cubic feet of fertile soil, either resting upon a natural bed of gravel or chalk, or upon an artificial bed of concrete 6 inches deep, or in other words, it must be 6 feet square and 2 feet deep. This station will afford the roots an ample supply of food for three years, and then if the soil around it is poor and thin, it must be deepened and enriched, and if necessary concrete put beneath it; the necessity for the concrete arising from a cold wet subsoil, into which the roots must not penetrate, or barrenness and canker may follow. Let us take, for example, an orchard of pyramids. The stations will be 10 feet apart, so that there will be 4 feet of soil between the stations for treatment in the third autumn after the planting. It is obvious that when concrete is put beneath a station provision must be made for water drainage, and this is done by laying a row of ordinary 2-inch land drain pipes across the middle of the station upon the concrete, pressing the pipes slightly into the concrete before it hardens, continuing the drain from station to station, or else to the nearest soil drain. Excellent concrete is made by mixing one part of fresh slacked lime with six parts of broken stones, enough water being used to impart the consistency of mortar to it. After it is spread evenly over the bottom of the station, it must be left to harden sufficiently to bear the soil being put in upon it. The station soil should consist entirely of sound fertile loam. We are generally supposed to obtain this in the top spit of an old meadow. But do we? No doubt the herbage and roots of the grass afford excellent nutriment for the roots of the fruit tree for a time, but there must also be an ample store of fertility in the soil itself, and we must make sure that it is there, or the growth of the trees will prove weakly and much of our labour be wasted. Let us also see if the soil contains enough gravel or small stones to insure the quick passage of rain water; if not, we can make all safe by a plentiful mixture of coal ashes with the soil. Remember, we cannot be too careful in the preparation of fruit tree stations, for here work well done is literally twice done, and all subsequent lifting of the trees, root-pruning, and ramming hard substances beneath the trees is avoided. Dwarf bush trees may be the same distance apart as pyramids. Standards should be 30 feet apart, wall trees fan-trained or palmette verriers 25 to 30 feet, according to the height of the wall, espaliers about 30 feet. For cordons there must be a trench 3 feet wide and 2 feet deep of prepared soil, the cordons being planted 18 inches apart.

For hush plants, including Gooseberries, Currants, Raspberries, and Blackberries, soil of a good staple, if drained, trenched, and well manured, will answer well, but there are exceptionally poor thin soils where trenches 18 inches deep and 3 feet wide must be made and filled with good soil for each row. We have had to do this, and we found that a liberal mixture of old stable manure and coal ashes with poor soil insured a free strong growth, which was subsequently maintained by an annual surface dressing of stabling or farmyard manure. Black Currants answer best in a deep rich soil, and where this exists naturally no crop is so profitable as this, for in rich soil the bushes become 6 feet high and as much in diameter, only take care to have them without stems, so that they may form large crowns or stools, from which young growth springs every year to take the place of any decaying branches. In our next note we purpose giving select lists of the best sorts of fruit for small and large gardens.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Lifting and Replanting.*—The Peach season is over, except, of course, the very late varieties, the time having arrived for laying the foundation of another year's success, whilst the soil retains sufficient heat to insure the formation of new roots before the trees go to rest. In order to succeed in the production annually of full crops of first-class fruit, trained trees have a tendency to exhaust the soil, as they present a large area of foliage to the sun, therefore require copious feeding either by means of heavy mulchings or liberal supplies of liquid manure, and as these frequent applications destroy the fibre of the soil, rendering it sour, too much care and attention cannot be devoted to the renovation of the borders. The most suitable soil for a Peach border is sound turfy loam from an old pasture where the soil overlies limestone, lime rubble, and charred garden refuse, in the proportion of a tenth of the lime rubble and a twentieth of the charred refuse, thoroughly incorporated and protected from heavy rains, as it will not do to put the material together in a wet state. Provide ample drains with proper fall and outlet, and the drainage should be 9 to 12 inches deep of clean broken stone, brickbats, or other material, and so arranged that 2 feet depth of soil will raise the border to the proper level. Cover the drainage with a layer of sods closely packed with the grass side downwards. Place the soil upon the sods, and beat it well down to prevent settling, also to cause resistance to the roots, increasing their ramifications and insure a short-jointed sturdy growth. Observe great care in lifting the trees, particularly where they have been left undisturbed for a number of years, as their roots will be thick and the fibres few; but the greatest care must be taken of the fibrous roots, which are of the most value to the next year's crop—indeed, if these suffer the next year's crop will suffer in proportion. If there be any danger of this, partial lifting only must be resorted to; indeed it does not always happen that old trees require complete lifting, as being well managed when young, all roots having a downward tendency will have been cut off or trained in a horizontal direction, and when this the case it will not be necessary to do more than form a

trench at the extremity of the border and work inwards until all the principal roots can be raised and relaid near the surface in the new compost. Sound healthy old trees that have become weak from age and heavy cropping may be renovated by having all the hard surface soil removed and new compost substituted, to which about 20 per cent. of bone dust has been added. The compost should be rough, dry, and free from manure, employing the latter as a mulching only, which will keep the surface moist, draw the active roots upwards, and feed them when the trees are carrying heavy crops of fruit. The autumn, just before the leaves fall, is the best time for lifting, as the trees usually form or push fresh rootlets, and are more or less active during the resting period, and ready to cater for the swelling buds and blossom when those are excited into activity by warmth.

Selecting Trees.—An early selection of young trees that have not made strong growth is a safe course to follow, and what is equally important is to have them lifted carefully with all their fibres, and kept moist until they can be planted in the borders that have been prepared for them. Of early varieties the following are useful—Alexander, Hale's Early, Early Grosse Mignonne, and A Bec are fine; Belle Bance and Violette Hative succeed, and are followed by Royal George, Stirling Castle, Bellegarde, and Barrington, all of which are worth a place in every garden. Of Nectarines, have Hunt's Tawny and Lord Napier for early; Elruge, Violette Hative, Pitmaston Orange, and Pine Apple follow, and then there is the fine late varieties, Albert Victor and Victoria, to finish with. Of course there are many others worth growing, some finer in appearance, but the quality of those named is unimpeachable.

CHERRY HOUSE.—The roof lights having been removed as recommended, with a view to check the tendency that prevails in early-forced trees to start into growth prematurely, the fine rains we have had recently will saturate the borders sufficiently to meet the requirements of the trees; but if the roof lights have not been removed the borders will become dry unless they are watered regularly and liberally, and as it is very important that the roots have moisture, an examination should be made so that their requirements may be promptly attended to. Every care should be taken of the foliage to keep it clean and healthy to the last.

Lifting and Replanting.—If any of the trees have assumed a sickly appearance, seek for the cause at the root. If the soil be found in an unsatisfactory state about the roots, by all means remove it, and at the same time see that the drainage is in perfect order. After this is complete lift the roots to within a few feet of the base of the trees, and replant them at once in fresh compost, turfy loam from, if possible, a limestone formation, adding a sixth of road scrapings. The operation should be performed just before the leaves fall.

Making New Borders.—The base being levelled to its proper fall, drains should be laid 6 feet apart, 3-inch being sufficient for the purpose, and these must fall and open into a main or transverse one which will take the water away. Between and over the pipes in the house, to which the border should be confined, 12 to 15 inches depth of drainage should be provided, broken stones or broken bricks being most suitable, and they must be clean, and covered with a layer of turves grassy side downwards. The border may be 27 to 30 inches deep, and the compost put together firmly if dry. If wet it must not be trodden, and must be allowed to settle before planting. In planting, which should be done early in autumn, or if that be impracticable it is well to defer it until early spring, as the winter is the worst time to move trees. In planting keep the roots not deeper than 9 to 12 inches. As regards variety there is none equal to the Black Tartarian or Circassian and Elton, and they ought, if others are to be associated with them, be given the warmest position in the house. May Duke, Empress Eugénie being an excellent early form of it, and Governor Wood, also are fine Cherries, good forcers. Frogmore Early (Bigarreau) is also worth a place, and Bigarreau Napoleon, grand, but these must be given the coolest positions.

PLANT HOUSES.

Hyacinths.—Where these are required at Christmas a number of bulbs should be potted without delay. The two earliest of all Hyacinths are Homerus single red, and La Tour d'Auvergne double white. The first is worth growing for its earliness, and on this account only, for although bright in colour when it first opens it soon fades. The double white variety has large bulbs of the purest white, and should be grown by all who desire flowers for wiring, for buttonholes and bouquets. This variety also makes a very fine spike. The earliest light blue is Charles Dickens. Five-inch pots are large enough for single bulbs, while two can be well grown in pots 1 inch larger. Four and five bulbs are very effective for decoration when in flower, but these should be placed in 7 and 8-inch pots. One crock only need be placed at the base of the smallest size, and over this a little decayed manure. These bulbs do well in a compost of fibry loam, one-third leaf mould, one-seventh of decayed manure, and a liberal dash of coarse sand. In potting it is wise to place a little sand at the base of each bulb, and leave after potting the uppermost portion of the bulb just exposed. The pots containing the bulbs should be plunged outside, covering them with about 6 inches of ashes for five or six weeks until the pots are filled with roots, when removal indoors is necessary. In order to maintain a long supply of bloom some bulbs should be potted about every three weeks until the middle of November. For purposes of decoration the following are good, cheap, and useful:—Single blue: Charles Dickens, Grand Lilas, Baron Van Tuyll, Argus, Mimosa, Marie, General Havelock, and Grand Vedette. Single Reds: Amy, Fabiola, Gertrude, Macaulay, Madame Hodson, Robert Steiger, and Von Schiller. Blush: Norma, Gigantea, Lord Wellington, and Grandeur

à Merveille. Single Whites: Alba maxima, Alba superbissima, Baroness Van Tuyll, Grand Vedette, Madame Vander Hoop, and Mont Blancs. Single Yellows: Duc de Malakoff and Anna Carolina. Doubles: Duke of Wellington, Blocksberg, and the white kind named above.

Tulips.—For early flowering the varieties of Duc Van Thol may be potted at once, placing five bulbs in a 4-inch pot. These dwarf early kinds are more effective in the size pots named than in those of a larger size. The scarlet variety is the only one we consider worth growing, and prefer to wait a few days longer for Canary Bird, yellow, and White Pottbakker than put up the white and yellow varieties of Duc Van Thol. When potted and forced early Tulips generally come into flower very irregularly. The best plan is to place the bulbs about 2 inches apart in pans or boxes and force them into flower in them, lifting out those that produce their flowers to make up good even pots of bloom. This is the only means by which a number of good pots suitable for decoration can be had early in the season. If the bulbs are kept moist after they have been lifted out of the boxes the flowers will last just as long as if established in pots with the whole of their roots attached. For later flowering place the bulbs into 5 and 6-inch pots in the same compost recommended for Hyacinths. Pot the bulbs for succession, reserving the double varieties for late flowering. The following are amongst the cheapest and best for all ordinary purposes, the white variety previously named being one of the very finest for flowering at any season. Single varieties: Chrysolora, Cottage Maid, Joost van Vondel, Keizerskroon, Le Matelas, Vermilion Brilliant, Wouverman, Vander Neer, Rouge Luisante, and Proserpine. Double kinds: La Candeur, Tournesol, yellow, as well as its red and yellow variety; Rex Rubrorum, Duke of York, and Murillo. Parrot Tulips are very useful, showy, and effective for conservatory decoration; Monstre Rouge, Mark Graff, and Perfecta are three good distinct and useful kinds. The Parrot varieties require the same treatment as the others, but should not be forced into bloom, but brought forward steadily under cool airy conditions, or they draw up tall and weakly, and then half their beauty is destroyed.

Polyanthus Narcissus.—The earliest batches of these will be ready for removal from the ashes. Every care must be taken to admit light to them carefully until their foliage has turned green. Pot them at intervals of about one month until the end of December. Four to six bulbs, according to their size, should be placed in each 6 and 7-inch pot. Single bulbs in 3-inch pots are very useful for decoration where effective arrangements are required. The following are amongst the best cheap varieties:—States General, Soliel d'Or, Grand Monarque, Gloriosa, and White Pearl. For the late supply Grand Monarque should be reserved in a position where roots will not start from the base of the bulbs. These, if potted after Christmas and plunged outside in a northern position and grown outside, will yield their useful flowers for cutting and decoration until the end of May. The bulbs can be kept out of the soil much longer than those of Tulips and Hyacinths without injury, and this is an advantage, for they will flower long after the others.

Border Narcissus.—These are really charming when in flower, and should be grown more largely for conservatory decoration than they are. The varieties of Bicolor, such as Empress and Horsfieldii, and Moschatus (albicans) are most serviceable in 5 and 6-inch pots. If only one variety is grown the second named should be selected, for it is undoubtedly the king of Daffodils; it is dwarf, early, and compact, and as beautiful as any variety. These varieties require the same treatment as the Polyanthus varieties, but should be brought into bloom under cool conditions.

THE BEE-KEEPER.

THE STEWARTON HIVE.

THERE is, perhaps, no hive, not even excepting the straw, hive, that has been so abused as the Stewarton; yet for all that it holds its own in every respect, most prominent for beauty in its produce, while, under all circumstances, it cannot be excelled when in the hands of an expert in apiculture.

Instead of the Stewarton being a big indivisible super as is often represented, it is in reality a sectional super, every comb being divisible or of different weights—exactly what is wanted, and suitable for the purses and tastes of the public. Not only was the Stewarton the first divisible hive, but it was the first to carry a section. I observe still hanging in my workshop some all in one piece (except the bars) sectional supers, that I made more than thirty years since for Stewarton hives. Another very important point which must be kept in view is, the fact that to keep the queen out of the supers has perplexed our modern bee-keepers to the utmost, causing them much annoyance and disappointment, to overcome which expense has been incurred in contrivances and inventions, while the Stewarton hive has all these

means within itself. The supers can also be filled alike on any part of its crown.

Then the American idea of reversing the frames for the purpose of filling supers is a part of the Stewarton system, and can be performed to more advantage and with considerable less trouble than with frame hives. To feed back for the purpose of emptying combs is sometimes a necessity; but to lose time, not speaking of the labour in reversing frames, is certainly far from being economical bee-keeping, and bee-keepers should be thankful to your excellent correspondent "Felix" for bringing the question of labour and expense so prominently forward.

When Stewarton hives are properly managed the surplus honey is mostly stored in supers of matchless purity. If it is necessary to reverse frames after being filled with honey, to be emptied by the bees and carried aloft, it proves the system defective and unnatural as well as wasteful both in bee-life and in honey. There is nothing that exercises bees more than feeding, and consequently hastens decay. We are told that it takes 20 lbs. of honey to make 1 lbs. of wax. A writer in a contemporary says 9 lbs., neither of which is correct. From comb containing about 50 lbs. of honey, 1 lb. of wax can be obtained; now the half of that is elaborated on the seals, from which half a pound is got, which means a loss of 10 lbs. of honey from every 50 lbs. extracted by the bees from reversed combs, and the waste of bee-life in performing this unnecessary labour is proportionately large. Surely, then, the hive that can be managed without such waste must be the better one.

It seems strange to me that so few bee-keepers and advocates of the frame hive are in possession of the Woodbury compound frame hive, the best frame with its improvements of any yet made. I suppose the cause of its falling into disuse must be unfair criticism. Some time since a very spirited discussion was commenced on the merits and demerits of the Stewarton *versus* frame hives; but a hive-maker, who edited the paper, interposed an opinion in favour of the frame hive at an early stage of the discussion, thus prejudicing the minds of bee-keepers. The advocate of the frame hive, among other unfair remarks, said that a Stewarton super with the screws withdrawn from the bars, when inverted the combs fell in a mess to the floor—the very thing that would occur according to the laws of gravitation in the ideal pet hive or super he advocated. There is no hive so well adapted for bee-keeping in all places, climate, season, or weather as the Stewarton hive. But bee-keepers should dismiss from their minds the idea that it is the hive alone that is the cause of much honey being gathered, but become impressed with the fact that it is the adaptability of the hive to circumstances, and the facility with which it can be managed by the bee-keeper.

I have, without any aid but what Nature provided, made a bee hive, and I could do the same again, and from that rustic hive I could take the greatest quantity of honey and of the finest quality, fit to be placed on the best table in the world. I have been prompted to write the foregoing through "Felix" asking if I could suggest anything which would be to his advantage in the management of a Stewarton hive. The only thing I can add to what he appears to know is, that one trial with either bees or hives is insufficient to test thoroughly unless everything is equal, and this is often not the case with the queen. When a trial is to be made, attempt to have these of one age and breed, and all else corresponding; make accurate notes, and let us know the results, comparing them one with another, and may we through accurate observation make a united effort to bring bee-keeping to a more economical and consistent system.—A LANARKSHIRE BEE-KEEPER.

PROFITABLE BEE-KEEPING.

"A CAMBRIDGESHIRE BEE-KEEPER," page 194, wants to know "by what magic he will insure skeps swarming, and the swarms giving a maiden swarm after giving a crop of surplus

honey before the stock in the frame hive is ready to swarm." I gave all the "magic" required in the article he takes exception to. Mix plenty of stores in beginning of September to last till next June, a dry straw skep, and I would have an entrance large enough for a rat to run through, and let the bees strictly alone till swarming—in fact, hiving the swarms should be all the attention necessary from one year to another besides feeling if heavy enough to winter.

I carefully avoided giving dates for the hives to swarm, as seasons and districts are so variable; but here this year in an apiary of skeps I packed up last September and never meddled with afterwards, the first swarm in the district came off on May 28th, during Cherry bloom, before Apples were in leaf. All first swarms had come off by June 2nd, and this in the face of the fact that no honey was gathered here till May 26th, and only three or four days previous in which pollen was gathered; yet with plenty of stores brood had been reared, and what bees were in the hives had remained at home and not worn themselves out by working abroad, so that when the weather became settled the hives were overcrowded and were obliged to swarm. Double stocks in frame hives strictly let alone were a month later, while stimulative-fed and brood-spread ones began swarming during the best weather in the Clover harvest, making their owners feel quite doubtful of getting much honey.

A few years ago I thought very much like "A Cambridgeshire Bee-keeper," and used to say if I had a skep stock and a few minutes to spare I would transfer it to a frame hive; but with age comes wisdom, and now with over forty frame hives I say, Stocks in skeps and swarms in frames, the sooner the swarms come the better.

I do not care if one man may get 200 lbs. of honey from a frame hive by means of capital, expense, and attention. If I can get 40 lbs. with one-tenth the capital, one-twentieth the expense, and one-hundredth the trouble, I shall be able to show the greatest nett profit. Much of the nonsense taught by the B.B.K.A. will have to be got rid of by others as well as your correspondent, and bee-keeping looked upon as getting honey with the least capital and expense and trouble, instead of as a feat to get the largest amount of honey from one hive regardless of cost and trouble. How much do you profit a cottager if, say, you teach him how to get 100 lbs. of honey at an expenditure of 100 hours time in the various items necessary if his time is worth 6d per hour, and then tell him he must be content with 3d. to 6d. per lb. for it? And yet the B.B.K.A. when asked to fix a value on the time spent in the Bligh competition to show the cottagers that they could make more per hour for their time spent on bees than growing Cabbages, the climax was reached by declaring they put no value on a bee-keeper's time, treating it as play time, and asking if we ought to want paying for amusing ourselves. I think it is on these lines they consider we ought to be satisfied with 3d. per lb. for our honey.

A successful competitor in the last Bligh competition wrote me at its close that he was going back to black bees and skeps, if not the sulphur pit. Of course, I thought at the time he was either joking or a little "off," but I now see from observation and experience that for the capital, skill, and time employed the old cottage skep system with the sulphur pit will yield a much greater profit than the modern frame system. In one cottage I visited on August 13th I found four skep stocks had increased into seventeen, and though covered with Rhubarb leaves were quite dry, and all but three heavy enough to winter, most being upwards of 30 lbs. weight. The weather, bear in mind, has been very bad since the beginning of July, the Heather harvest also being a complete failure. I seriously question if the same amount of honey and wax could have been got from four bar-frame stocks. In another apiary twenty miles off three stocks had increased to ten, and only two were too light for wintering. These last were within two miles of the Heather, and had the yield from this source been only moderate each hive would have averaged 60 lbs. weight, as they were crowded with bees. These are only fair examples of what a cottage skep apiary will do when hives with young queens and heavy enough to last till June are selected for stocks. In conclusion, I repeat the point to aim at in bee-keeping is not getting the largest amount of honey per hive, but rather obtaining it with the least capital, labour, and expense, and I believe this can only be by means of skep stocks and very cheap frame hives to put the swarms in.—A HALLAMSHIRE BEE-KEEPER.

DRIVEN BEES IN A FRAME HIVE.

I BOUGHT a bar-frame hive of bees three weeks ago; would you give me your advice as to what quantity of food the bees will want through

the winter? They were driven from two straw skeps and united. The weight of bees alone was 8 lbs., and I am told there was about 35,000 bees in the hive. The food they have at present is in seven bars, each 13½ inches long and about 8½ inches deep. Will there be enough food for the winter? What quantity of vinegar and salt is used with sugar and water when making food? and how long is it to boil? Should they be covered now for the winter, or ought I to wait till the end of this month? Should the dummy board at the back of the bars fit close to the bottom of the hive or not, as my board is about a quarter of an inch from the bottom, and very often the bees are out in the back part of the hive? If you will give me your advice on the above I shall feel thankful.—R. C.

[There is no way of determining the number of bees in a swarm by either weight or bulk. The number that would weigh 8 lbs. when full of honey would weigh very much less when empty. About two pints or, more bees, Scotch measure, will make a good stock to stand the winter, if it has not less than 25 lbs. of honey in store; but by the end of April if breeding has been going on briskly previously, it may then have to be fed again, unless honey is plentiful. If the frames are well filled and sealed, each should contain about 6 lbs. You had better give them at least four frames, if not more. Bees always do better in spring with plenty of food in the hive. Neither vinegar nor salt is necessary to be put amongst syrup. Boil one minute, and keep it stirring till all the sugar is dissolved. The quantity of water required for sugar depends on its quality. Cane sugar (proper) put into any vessel, then soft water poured on it until the water stands an inch or more above the sugar, is about the right thing, but rather keep it a little thin than too thick. Hives should always have their coverings. There should be no difference in them during summer or winter. Dividing boards not reaching the bottom of the hive cause a continual current of air to be passing amongst the bees, and has the contrary effect upon the health of the hive than what it was intended for. You will find your bees more healthy and more easily managed if you have the frames at right angles to the entrance.]

TRADE CATALOGUES RECEIVED.

Webb & Sons, Wordsley, Stourbridge.—*Catalogue of Seed Corn for 1885-6 (illustrated).*

Sutton & Sons, Reading.—*Bulb Catalogue for 1885 (illustrated).*

L. Delaville, 2, Quai de la Mégisserie, Paris.—*Catalogue of Bulbs.*

Michael Rains & Co., 34, Mansell Street, Whitechapel.—*Wholesale Catalogue of Bulbs.*

Charles Turner, Slough.—*Catalogue of Roses, Fruit Trees, and Bulbs.*

James Yates, Stockport.—*Illustrated List of Bulbs.*

Isaac Davies & Son, Ormskirk, Lancashire.—*Catalogue of Rhododendrons and Azaleas.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Insects on Chrysanthemums (S. Jones).—The insects shall be carefully examined, and a fuller reply given in a future issue; in the meantime destroy them, as they are undoubtedly injurious.

Trec Carnations (Inquirer).—These plants require a very light house, and when placed in position in the autumn the same temperature and ventilation will be suitable for them in which Pelargoniums would be kept steadily growing, or about 45° at night, with a free circulation of air, a close atmosphere being very prejudicial. When first housed free ventilation is of more importance than maintaining any particular degree of temperature.

Exhibiting Roses (Rosarian).—We fail to see that any benefit would result by publishing your letter. It is well known there are "open" classes at local shows, and a local exhibitor has a perfect right to choose those in which he can stage the best, provided he does not do so in contravention of the regulations. This is indeed what "great" exhibitors do. If other persons in the district have equalled or surpassed the exhibitor to whom you allude, we will readily record any facts with which you may favour us on the subject.

Worms on Lawns (G. R.).—There is no simpler remedy for expelling worms from lawns and borders than clear lime water. Get some lumps

of lime fresh from the kiln and place them in water, stirring well, then allowing the lime to settle and the water become clear. If there is any sediment at the bottom of the vessel the water will be as strong as you can make it, and perfectly safe. About a pound of lime will suffice for ten gallons of water. It is best to apply it during mild showery weather, when the worms are near the surface. If there is no sediment at the bottom of the vessel the lime water will not be strong enough. An ounce of corrosive sublimate dissolved in a little boiling water, then mixed with forty gallons of clear water and applied through a rose, has also been found to expel worms from lawns.

Peaches and Tomatoes—Malt Dust (Vectis).—If your house is well furnished with Peach trees in a good bearing state we should hesitate in making the change you suggest. If you have not had experience in growing fruit trees in pots you might not succeed so well as you anticipate. With ordinary care no harm would ensue by cutting off the few roots to which you allude, but we do not advise the change. There is no better method of growing fruit trees in pots than that described by Mr. Rivers in his book, and recently by Mr. Hawkins in this Journal. We have seen excellent crops of Tomatoes grown in pots in Peach houses. Malt dust resembles brownish sawdust. It is not the dried growth of the Barley produced in malting, but the refuse that passes through the perforated floor to the fire below, and thus becomes carbonised. It is an excellent manure for various plants and crops.

Damping a Vinery—Placing Pears in a Vinery—Cutting off Strawberry Leaves (F. J.).—The vinery should be kept dry, not damping the floor, as the atmosphere will be quite moist enough for the Grapes; indeed the difficulty in a house where fire heat is only given to keep out frost will be to have it dry enough. A little ventilation at all times so as to promote a circulation will be desirable, as a stagnant atmosphere is not favourable to the keeping of Grapes, and hinders the ripening of the wood. Pears should not be placed on shelves in a vinery, but in a cool place, and kept in the dark rather than light, until they become ripe, or until a day or two before they are fit for table, when light improves them considerably. It is not good practice to cut away the head and leaves of Strawberries, as they are essential to the development of the crowns.

Primula and Cyclamen Leaves Spotted (R. C. W.).—The leaves are attacked by a fungus, which is much fostered by a close badly ventilated atmosphere, and is also encouraged by a too rich soil. We should try the effect of some artificial manure as a surface dressing, so as to stimulate root-action, and maintain a genial condition of the atmosphere with a rather free circulation of air. The plants should be syringed with a solution of sulphide of potassium, in the first instance at the rate of half an ounce to a gallon of water; but the chief thing is to get them into better health, and then if the leaves are still spotted, apply the sulphide of potassium at 1 oz. to the gallon of water. Otherwise do not syringe the foliage, and keep the plants near to the glass.

Mildew on Roses (A. G. F.).—Mildew is usually the most prevalent when the roots of Roses are in poor and too dry soil, and the position is more or less low and sheltered. Syringing the plants with water in which 2 ozs. of soft soap is dissolved in each gallon, and while still wet dusting the affected parts with sulphur, is a good remedy; but at this season the ends of the worst shoots may be cut off and burned. Copious applications of liquid manure to the roots would almost certainly be beneficial. Not knowing the nature of the soil we are unable to say whether lime would improve it or not; if it is needed we should apply it in the spring.

Bluebottle Flies (B. G.).—The flies you sent with the Vine leaves are those named above and are plentiful in late summer in most gardens, frequenting walls, vineries, and other places where there is warmth and decaying or cracked fruit. They are best trapped; some soda-water or similar bottles being about half-filled with sweetened beer and suspended by a piece of string or wire tied round the neck in places where they frequent. The flies will enter and be drowned. The bottles require to be emptied when they get full and the contents renewed. The most likely cause of the Grapes on the Muscat Hamburg Vine shanking is the roots being deep in a cold badly drained border, the remedy for which is lifting, removing the old soil, and rectifying the drainage, laying in the roots in fresh soil nearer the surface, which should be done so soon as the leaves give indications of falling.

Passiflora not Flowering (George Murray).—We are unable to account for the Passionflower casting its buds, but it mostly arises from the plant being over-vigorous, the wood not ripening sufficiently. This is common when the plants are grown in a dark position and do not receive sufficient air and light for the solidification of the growth. Try root-pruning or confining the roots, which will give short-jointed wood, and probably the plant will then expand its flowers. Hybrid Passifloras are not by any means unusual, but we do not know of any between the varieties to which you allude.

Retinospora ericoides (G. S.).—The plant is not a Juniper, but bears the name given above. It is easily propagated by cuttings, which strike readily if inserted in sandy soil under handlights out of doors, and if given a good watering after insertion they will not require any farther attention until spring. It will, however, be necessary to cover the frames with mats and similar material in severe weather. Cuttings can also be inserted in pots and placed in a house where the temperature does not fall below 40°, and some plunge the pots in slight bottom heat, but in this case much more attention is needed than for those out of doors. It is not too late to commence propagating the plants this season, and you should have no difficulty in obtaining a good stock of young plants for next year.

Stopping Bouvardias (E. H.).—You may now pinch out the flower trusses that are showing, the present time being quite late enough to have them flower at Christmas as they do not come on so quickly at this time of year as in summer. If you cannot command a higher temperature than 50° by artificial means it would be best to leave the plants as they are and keep them back until early December, when they may be brought into flower by placing in heat. 2, The Narcissus and Liliums may be planted between the pots of Chrysanthemums. The soil will not become too moist for the bulbs if you confine the application of water and liquid manure to the pots. We presume the Chrysanthemums will be moved indoors for flowering in the

course of a week or two, so as soon as the flowers begin to open; the holes from which the pots are taken can then be filled with suitable compost. Cover the bulbs about 4 inches deep.

Outdoor Mushroom Beds (*Earnest Inquirer*).—After a bed has ceased bearing it must be entirely cleared away. Some beds continue productive for more than three months, others do not bear so long. The amount per yard to which you refer is realised in three months by competent growers, often much more, but whether you will succeed in the first attempt or not it is impossible for us to say. Your proposed arrangement of preparing the beds will do very well, and the third bed should be made early, not late in January.

Fruit for Market (*H. S. E.*).—It is next to impossible to name the "best" varieties of fruit without reservation, as some succeed in one district and not in another. The following are generally good:—Pears: Jargonelle, Williams' Bon Chrétien, Louise Bonne de Jersey, Hessel, Fertility, and Doyenné du Comice. Plums: Early Prolific, The Czar, Green Gage, Victoria, Mitchelson's and Kirke's. Apples: Irish Peach, Worcester Pearmain, Cox's Orange Pippin, King of the Pippins, Blenheim Pippins, and Dumbleton's Seedling. Raspberries: Whinham's Industry and Whitesmith. Red Currants: Ruby Castle (Victoria) and Red Dutch. Black Currants: Black Naples and Lee's Prolific. Raspberries: Carter's Prolific and Baumforth Seedling. Strawberries: Sir Joseph Paxton and Vicomtesse Hericart de Thury.

Enlarging Vinery (*An Old Subscriber*).—We are glad to learn that you continue to enjoy your garden and the Journal that you have read for so many years. It is not easy to determine the best method to adopt in furnishing the additional part of the house; but as the Vines are healthy and well rooted we should hesitate to lay the stems in the soil lest the resulting growth should be too exuberant. The alternative plan would answer, but the horizontal portion of the rod would be of no use for bearing. Probably the best plan would be to again lift the Vines, drawing them to the front of the house. They appear to be in excellent condition for removal, and if the work is done at once, taking particular care that the roots are not dried, syringing the Vines and shading the house afterwards if needed for keeping the foliage fresh, they would commence rooting at once and start into growth next year about as strongly as if they had not been disturbed. By this plan you would lose no portion of the rods for bearing, and a much greater extent of the roof would be covered than by either of your propositions of bending the stems. If you do not remove the Vines, we prefer the plan (No. 2 in your sketch) of not burying the rods.

Pears not Ripening—The Congress (*J. H. W.*).—Many varieties of late Pears refuse to ripen when the roots of the trees are in cold clayey soil. The only remedy is to proceed as you have done with the Jargonelles, mulching heavily to keep the soil moist near the surface in the summer. If it gets dry there the roots will certainly strike down into the subsoil, no matter how ungenial it may be. If you place them in good soil near the surface, and keep them there in the manner suggested, we have no doubt the fruit will ripen. All you can do to induce the Pears to ripen is to place them in a close box in a very warm house. A closely observant person having a fair knowledge of Pears may determine the names of several varieties by an attentive examination of their characters with those described in the "Fruit Manual." You, with others who are interested in Pears, should endeavour to attend the ensuing Pear Congress at South Kensington; and we should be very glad if gardeners could be encouraged by their employers to visit a collection that will be highly instructive, as a long time may elapse before a similar opportunity may occur again for gaining knowledge of the nature indicated.

Ash Tree Roots in Vine Border (*A Single-handed Grower*).—Provided you were careful to remove all the roots of the Ash, or the woody portions of them, there is no reason why the Vine roots should not thrive in the border. The Ash roots would no doubt have greatly impoverished the soil, which you will in some measure have enriched by working in "a quantity of good stable manure," which may be advisable in your case, though not generally so, as the manure for Vine borders is best given at the surface as a mulching. If, however, the roots of the Ash have not been removed, there is danger of fungus being produced and passing from the decaying Ash roots to those of the Vines. You would be acting wisely in removing the surface soil down to the roots in the inside border, picking the soil from amongst the roots without injuring them, substituting good turfy loam, to which has been added about 12 per cent. of bone meal or dust. Do not mix any manure with the soil, but mulch the surface with 3 inches thickness of short fresh stable manure. It will not be safe to lift the whole of the roots, but a portion may be lifted without prejudice to next year's crop, though it must be done with care, and as soon as the wood becomes ripe, to lift the roots confined to the inside border would certainly tell disastrously upon next year's crop.

The Nutmeg Tree (*J. C.*).—The Nutmeg Tree (*Myristica moschata*) is a native of the Moluccas and neighbouring islands, but is now cultivated in Java, Sumatra, Penang, the Isle of Bourbon, Mauritius, and other parts of the East, and in Cayenne, Martinique, and some of the West India islands. It attains the height of 30 feet, with a straight stem and a branching head. The juice is acrid, viscid, and abundant; of a red colour, and dyes linen a permanent colour. The leaves are oblong-oval, glossy on the upper surface, and whitish beneath, and with an aromatic taste. The flowers are male and female on different trees, insignificant, and of a yellowish colour. The fruit is round or oval, about the size of a small Peach, with a smooth surface, green at first, but becoming yellow when ripe. The external covering, which may be called a husk, is thick and fleshy, containing an anstere, astringent juice; becoming dry by maturity, it opens in two valves, and discovers the nut covered with its aril, or mace, which is of a beautiful blood-red colour; beneath the mace is a brown shining shell, containing the kernel or nutmeg. A plantation of Nutmeg trees is always made from seed, and it is not till the eighth or ninth year that the trees produce flowers. The sexes being on different trees, after the plants are two years old they are all headed down and grafted with scions taken from the female tree, reserving only one male stock for fecundation. The natives of the Moluccas gather the fruit by hand, strip off and reject the pulpy husk, detach the mace carefully and expose it to the sun, which soon changes its beautiful

blood-red colour to a light brown; it is then sprinkled with sea water to render it flexible and preserve it. The nuts are first sun-dried and then smoked, until the kernels rattle against the shell. This shell being removed the kernels are dipped twice or thrice in lime water, laid in heaps for two or three days, wiped, and packed in bales or barrels. There are two varieties of the Nutmeg, distinguished as the "green" and the "royal;" the royal is larger, and produces mace longer than the nut, while that of the green extends only half way down.

Names of Fruits (*T. C.*).—1, Souvenir du Congrès; 2, Jargonelle; 3, Windsor; 4 and 5, not known, too unripe; 6, Winter Nelis. (*County Dublin Subscriber*).—1, Diamond Plum; 2, Prince of Wales; 3, not known; 4, Windsor Pear; 5, Beurré d'Amanlis; 6, not known, too unripe. (*H. Hutchinson*).—1, Peach; 2, Hampden's Bergamot. (*H. Hewat Craw*).—White Astrachan. (*J. R.*).—Plums, red one Victoria, the three yellow ones Jefferson. You will find the history and descriptions of those you mention in new edition of the "Fruit Manual." (*Lieut.-Col. Ward*).—The Apple is quite new to us, and is one you would do well to preserve. It is very beautiful, but we cannot form an opinion of its merit, as it is long past its best and is quite mealy. If it is of good flavour, its appearance and earliness are great accompanying recommendations to it. (*T. W. Sanders*).—Jersey Gratioli. (*X. Loughgale*).—1 is undoubtedly Dutch Codlin. The Royal Codlin is quite distinct, and if you refer to the new edition of the "Fruit Manual" you will there find it described; 3 is Court Pendu Plat. Your specimens of Royal Codlin are certainly small. (*George Picker*).—1, White Doyenné; 2, Fondante d'Automne; 3, Van Mons Leon Leclerc; 4, Durondeau; 5, Duchesse de Bordeaux; 6, Beurré Sterckmans. (*Sandbeck Park*).—Spanish Warden.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. O.*).—1, Clematis tubulosa; 2, not recognisable; 3, Selaginella Martensi variegata; 4, S. caulescens; 5, Polypodium aureum; 6, Davallia canariensis; (*W. A. M.*).—1, Selaginella Kraussiana; 2, Ceanothus divaricatus; 3, Adiantum concinnum; 4, Selaginella Wildenovi. (*A Young Gardener*).—1, Asplenium formosum; 2, Polypodium pectinatum; 3, Polystichum aculeatum; 4, Dracaena indivisa; 5, Viburnum montanum. (*A. S., Bedale*).—1, Probably the variety of Hop is the Coldgate; 2, Viburnum montanum; 3, Lychnis diurna flore pleno; 4, Campanula Trachelium.

Unfilled Sections (*A. G. F.*).—You may keep the unfilled supers and place them on the hive next year at the time you propose—that is early in the summer, when blossom is abundant and honey plentiful. If your hive is not heavy now the bees should be fed for the winter.

COVENT GARDEN MARKET.—SEPTEMBER 23RD.

TRADE heavy, with prices still lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 0 to 3 6	Melons	each	1 0 to 1 6
Cherries	½ sieve	0 0 to 0 0	Oranges	100	8 0 to 12 0
Cobs, Kent ..	per 100 lbs.	24 0 to 26 0	Peaches	per doz.	1 6 to 6 0
Currents, Red ..	½ sieve	0 0 to 0 0	Pears, kitchen ..	dozen	0 0 to 0 0
" Black	½ sieve	0 0 to 0 0	" dessert	dozen	1 0 to 1 6
Figs	dozen	0 8 to 0 9	Pine Apples English ..	lb.	2 0 to 4 0
Gooseberries ..	½ sieve	0 0 to 0 0	Plums	½ sieve	1 3 to 2 6
Grapes	lb.	0 6 to 2 0	Strawberries ..	lb.	0 0 to 0 0
Lemons	case	15 0 to 21 0	St. Michael Pines ..	each	3 0 to 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 0
Asparagus ..	bundle	0 0 to 0 0	Mushrooms	punnet	0 6 to 1 0
Beans, Kidney ..	lb.	0 3 to 0 0	Mustard and Cress ..	punnet	0 2 to 0 0
Beet, Red	dozen	1 0 to 2 0	Onions	bunch	0 2 to 0 0
Broccoli	dozen	0 9 to 1 0	Parsley	dozen bunches	2 0 to 3 0
Brussels Sprouts ..	½ sieve	0 0 to 0 0	Parsnips	dozen	1 0 to 2 0
Cabbage	dozen	0 0 to 1 0	Potatoes	cwt.	4 0 to 5 0
Capsicums	100	1 6 to 2 0	" Kidney	cwt.	4 0 to 5 0
Carrots	bunch	0 3 to 0 4	Rhubarb	bundle	0 4 to 0 6
Cauliflowers ..	dozen	2 0 to 3 0	Salsify	bundle	1 0 to 0 0
Celery	bundle	1 6 to 2 0	Scorzonera	bundle	1 6 to 0 0
Coleworts	doz. bunches	2 0 to 4 0	Seakale	per basket	0 0 to 0 0
Cucumbers	each	0 3 to 0 6	Shallots	lb.	0 3 to 0 0
Endive	dozen	1 0 to 2 0	Spinach	bushel	2 0 to 4 0
Herbs	bunch	0 2 to 0 0	Tomatoes	lb.	0 4 to 0 0
Leeks	bunch	0 3 to 0 4	Turnips	bunch	0 4 to 0 0



THE CLERGYMAN'S FARM.

(Continued from page 242.)

ANIMALS of the farm are generally spoken of as live stock, even poultry being included by this comprehensive term. For our small farm of 80 acres or less, the number of animals required cannot be large. This, however, is a matter entirely dependent upon the size of the family. For example, the dairy may consist of two or three cows, or it

may require seven or eight if there is a large family of children, and in a calculation of numbers, failures of cows must be taken into account. We cannot reckon upon having an unfailing supply of milk from a given number of cows, but must always allow a fair margin for shallow milkers, poor milk, barrenness, and sickness. There is no better plan than having one or two heifers to calve in spring, for they always command a ready sale, and can easily be sold should there be no failure among the old cows. If there is, how gladly do we take our best heifer into the herd and so prevent any lapse in our supply of milk. It is no light matter to be so pressed for milk as to be obliged to purchase a cow, for who will part with a really good cow at a reasonable price? It is true enough that plenty of cows are to be had at every cattle fair, but few, if any of them, are worth having. In making a calculation of the number of cows required, we may take the daily yield of milk of an ordinary herd at an average of 10 quarts per head. If Channel Island cows are had, the per-centage of cream will be large, as much as 25 per cent. having been obtained from the milk of Jerseys; but it is seldom that we obtain such results from other breeds. Yet we have had very rich milk from the hardy little Kerry cows.

Of the general care of cows we may notice briefly the most important points. At the present time of year they should be gradually withdrawn from open pastures, being always taken into the yard at night, where there should be plenty of soft dry litter, both in the open yard and in the lodges. Delicate Jersey cows should be shut into close lodges at night from the present time until they are able to lie out again at night next summer. Nothing must be left to chance, or some so-called accident may cost us dear; illness or death among cows not unfrequently arising from some apparently trivial cause. Do not let cows eat walnut leaves as they fall in autumn, or an unpleasant flavour will be imparted to both milk and butter. Care must be taken at all seasons of the year that they have sweet and wholesome food. We never give them turnips or linseed cake, the dietary after they are taken off the grass into the yards for winter consisting principally of the best meadow hay, with bran, Carrots, Cabbages, Mangolds, and silage. As spring draws nigh they have Thousand-headed Kale, and then comes the early cut of Rye. Weak and delicate cows may require a few crushed Oats, but strong healthy cows do not want anything more than the simple fare enumerated. Undoubtedly they do like a change of diet, and it is good for them. Large, yet snug lodges, soft dry litter for bedding, pure water, wholesome food, careful milking, and, above all things, gentle kindly treatment, go far to insure good health and an abundant yield of milk. If a cowman is worth his salt he will be fond of the animals under his charge, and he will probably have certain little mysteries in his treatment of them into which it is unwise to penetrate farther than to assure ourselves that they are harmless.

"Calves thrive faster in May than in March on a given allowance of milk, simply because the weather conditions are more favourable." The truth of this quotation is obvious enough, and we apply the lesson it conveys by taking especial care to keep calves warmly housed in the early months of the year, and to keep them well fed, avoiding the long fasts to which they are subjected under careless, thoughtless management, and which so frequently brings on indigestion and scouring. After weaning, when they are old enough to eat—say in May or June—they should be taken to a lodge opening into a little yard and paddock of good sound pasture, where they can have green food, exercise, shelter, warmth, and be subjected to no fright or harsh treatment from older animals. Bull calves and inferior cow calves should be fattened and sold for veal, as that is the most profitable way to dispose of them, a prime fat calf being worth almost as much as a yearling.

Of pigs it is desirable that there should always be a certain quantity upon the farm, so that skim milk, butter

milk, house wash, refuse vegetables, and roots may all be turned to account. There should always be a regular supply of home-cured hams and bacon forthcoming from the farm, for swine are unclean animals, eating such foul garbage if they can get it, that it is unpleasant to have to contemplate the possibility of having to purchase bacon or pork. Sheep can hardly be required here, except a few old ewes be purchased in August for folding on second growths of Clover, with corn and cake, being subsequently passed on to the butcher.

Poultry of all sorts should be kept for a supply of chickens, turkeys, geese, ducks, and pigeons, as well as of eggs. Good management tells in this matter as in others, and with it there can be no question about poultry keeping being profitable. Perhaps the most vexatious matter in connection with poultry keeping is the having no eggs in winter, and yet we have only to save enough early poult to have an ample supply.

WORK ON THE HOME FARM.

Wet weather has caused much sprouting among late Barley that was mown and left in the swathe, and the grain is spoiled for malting. We shall turn it to account for home consumption, either whole or ground with other corn for sheep and pigs. Grass and root crops have thriven, and our prospects of autumn and winter food are much improved. Harvest is now over on all our farms with the exception of some Rivett's Wheat sown late on heavy land, and we are now doing our best to get the land clean and to sow green crops and winter corn. We have done our best to plough in as much White Mustard for manure as we could, but it was only the early sowings of Mustard that were really successful, later ones having suffered from drought. We got about half a crop to plough in of sowings made in May, and shall have to add a little artificial manure. Glad indeed are we to find more and more attention being given to this important matter of ploughing-in green crops, which, weight for weight, are almost equal to farmyard manure. We are now ordering our autumn supply of artificial manure to give half dressings to Wheat and Oats, the quantity per acre being a quarter of a hundredweight of nitrate of potash, three-quarters of a hundredweight of nitrate of soda, quarter of a hundredweight of steamed bone flour, quarter of a hundredweight of superphosphate, quarter of a hundredweight of coprolite, and the other half dressing will be applied in February when we put artificial manure upon the grass. The manure is now applied as a surface dressing by hand, broadcast, after the drilling-in of the seed, and before the harrows are passed over the land. It soon dissolves in the moist soil, which thus becomes charged with fertility for the roots of the young corn plants. Do not let the idea that there is some risk of loss of nitrogen from the soil in winter prevent you from the application of artificial manure in autumn. Depend upon it, if we are to have good corn crops the soil must be stored with a reasonable amount of fertility, so that from the germination of the seed there may be an ample provision of food for the plants. We have put this to the proof year after year, and the result has invariably been so successful that we can now be positive in our assertions. Lamentable is the ignorance of farmers generally of agricultural chemistry. "Muck," or farmyard manure is still in full force, notwithstanding the heavy outlay in its manufacture. When will dung mixers and carting of manure be a thing of the past? There is still so much blind faith in bulk. Something that is substantial is what appeals to and lays hold of the mind ignorant of the laws which govern these things. We much fear that the ordinary farmer will for some time to come continue to solemnly cart his half-decayed litter saturated with moisture in the blind faith that what was good for his forefathers must be equally good for him.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.					Rain.
1885. September.		Barometer at 32 nd and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
									Inches.	deg.	deg.	
Sunday	13	30.015	60.0	54.8	N.W.	55.9	66.7	54.1	95.9	48.4	0.010	
Monday	14	29.974	61.7	60.7	S.E.	56.2	69.6	49.6	105.4	41.4	—	
Tuesday	15	29.919	63.0	59.5	S.E.	57.3	76.5	58.3	113.6	54.0	0.013	
Wednesday ..	16	30.109	58.8	55.3	S.W.	58.2	68.4	55.0	95.8	50.5	0.732	
Thursday	17	29.973	53.5	52.8	N.	47.8	60.9	51.8	73.4	52.3	—	
Friday	18	30.060	52.7	52.2	N.	57.0	63.6	47.1	94.3	40.4	0.067	
Saturday	19	30.018	55.3	54.6	S.E.	56.6	58.7	49.1	64.2	40.2	0.093	
		30.010	57.9	55.7		57.0	66.3	52.1	91.8	46.7	0.965	

REMARKS.

13th.—Fine and pleasant all day.
 14th.—Overcast with drizzles early; fine afternoon.
 15th.—Fine bright morning.
 16th.—Overcast early; fair day; rain in evening and night.
 17th.—Very wet early; rain till 10 A.M.; fine afternoon.
 18th.—Fair morning; fine bright afternoon and evening.
 19th.—Wet morning; fair after.
 Rather warmer and much damper.—G. J. SYMONS.



COMING EVENTS

1	TH	Sale of Bulbs at Protheroe's Rooms, Cheapside.
2	F	
3	S	Sale of Bulbs at Stevens' Rooms, Covent Garden.
4	SUN	EIGHTEENTH SUNDAY AFTER TRINITY.
5	M	
6	TU	
7	W	[Exhibition. Crystal Palace Show of Hardy Fruits (two days). International Potato

SEPTEMBER IN THE FLOWER GARDEN.

THE welcome showers of the past few weeks have seemed to rouse up many of the occupants of the beds and borders, and caused them to burst into blossom again. Shrubs and the hitherto scorched lawns are also looking much the better for these genial rains. Perhaps Kent and Sussex have suffered more from the effects of the late trying drought than any other county, in consequence of the gravelly and chalky subsoils. Particularly noticeable were the effects of the drought on the shrubs, trees, plants, and grass at and around Goodwood a week or ten days ago. There the grass was quite brown, and shrubs were dying for want of moisture. No rain had fallen since the first week in July. The upper stratum of soil is very shallow there, the chalk cropping up to the surface. Happily it was not quite so serious in this district, although it was very difficult to keep the occupants of our shrubberies, borders, and beds supplied with the needful moisture. Powerful hydrants and a good hose, intelligently used, proved our best friends through the trying ordeal, and if every garden was similarly well provided, the saving in labour, besides other advantages, would soon pay for the outlay involved.

Turning to the plants used in the embellishment of the garden, there has not been much cause for complaint with regard to abundance of flowers on the hardy plants, also on Pelargoniums and other flowering bedding plants. Pelargoniums have been unquestionably good this season, the plants blooming very freely and retaining a more sturdy, compact habit of growth than is usual with them in damp seasons; and even now, drawing towards the end of September, the plants are all that could be desired. Lobelias are still flowering freely. Cannell's Swanley Blue, which we have grown for the first time this season, was one of the prettiest soft, delicately coloured blue Lobelias we have seen. It is compact in habit and exceedingly floriferous. The varieties known as Emperor William and Brighton No. 1 are also very good. For growing in masses, in the mixed border or on ledges of rockwork, we prefer grandiflora and speciosa raised from seed early in the season. In taking up these plants for store purposes, many fail to keep them during the winter through neglecting a very simple precaution, which is the removal of the flowers and seed vessels by means of a pair of shears about a fortnight before the plants are lifted. By cutting off the seed vessels the plants are induced to make a little growth before their roots are disturbed.

There are so many means employed now in the decoration of the flower garden, some preferring carpet and geometrical bedding generally; others hardy plants in many different forms, from the complete collection down to the select and mixed styles. Here we give preference to the two latter styles, and we have no reason to be dissatisfied therewith, as from early spring until now (September 22nd), by judicious selection and planting, we have had a constant supply of beautiful blooms, and this will continue more or less until far into November. We have no wish to despise carpet and

geometrical bedding where skilfully and tastefully carried out, as at Hampton Court, and many private gardens too, but these styles of bedding have been overdone, consequently there is an almost endless repetition and sameness. A due proportion of these styles should exist in suitable situations, as, for instance, in proximity to the mansion and along terraces; but nothing looks more incongruous than borders with beautiful backgrounds of noble trees and shrubs filled with lines of yellow Calceolarias, flaming Pelargoniums and Pyrethrums. Far more interesting and far more beautiful would these borders be were they tastefully filled with hardy plants. Delphiniums, hardy Lilies, Pentstemons, Campanulas, and a host of similarly beautiful hardy flowers, would certainly be in better harmony with trees and shrubs than the formal rows of Pelargoniums and Calceolarias.

It is surprising to what extent a garden of small dimensions may be made beautiful by the exercise of intelligence and good taste. It is not the thousands of plants employed, but the way in which they are selected and disposed, that makes the most effective display. We make trees and shrubs play an important part in combination with hardy flowers in the decoration of the flower garden—that is to say, no flowering plants are placed in any part except in combination with trees and shrubs. Every border of hardy flowering plants has a suitable background of trees and shrubs, and these are planted in such a form as to create suitable nooks and crannies for the growth of valuable Lilies and other choice hardy plants. Thus, in one part we have an irregularly formed bed of Rhododendrons and Ghent Azaleas, the latter planted amongst the former, and around the margin is a border varying in width from 2 to 8 feet. At the back of one of the widest of these curves is a group of Hollyhocks; a little on the right a strong group of Chrysanthemum maximum; on the left a group of Delphiniums; standing out boldly is a group of Liliun candidum, double purple and white Rockets, Delphinium cashmerianum, Polemonium Richardsoni, Helianthemum pumilum, Campanulas, Gladiolus, Tigridias, and other hardy plants, whilst the foreground is filled with masses of Zinnias, Stocks, Asters, Petunias, Salpiglossis, Coreopsis, Gilias, Godetias, Alyssums, Virginian Stocks, Marigolds, Verbenas, &c. In another nook will be a fine well-established group of Liliun auratum in the background, with single Dahlias, Pentstemons, Helianthemums, Liliun aurantiacum, Rudbeckia Newmanni, and so on. Another group will have a Portugal Laurel, Weigelas, Berberis Darwini, Aucubas, and Conifers for a background, with groups of Lilies, single Dahlias, Lobelia cardinalis, Pentstemons, Foxgloves, hardy Fuchsias, and Hibiscus, Gladiolus, Carnations, with Stocks, Asters, and other annuals in the foreground. Immense slopes thrown up to hide unsightly objects have their summits crowned with now lofty trees of Poplars, Cedrus Deodara, Cupressus Lawsoniana, double Hawthorns, Lilacs, Aucubas, and lower down choice Rhododendrons and Azaleas, with Liliun croceum, Solomon's Seal, Anemone japonica and Honorine Jobert, patches of Helleborus niger, common Primroses, and Lily of the Valley, growing under their shade; whilst here and there the margins boldly develop into large borders filled with the choicest Roses, carpeted with Mignonette in summer and Primroses in winter and spring. Similarly planted is every shrubbery border, either with Roses, hardy herbaceous plants, or annuals. Bold rockeries too are formed for alpine plants. These are a few examples of what can be done by means of hardy plants alone.

Respecting the hardy annuals and biennials in bloom at the present time, they are giving us the fullest satisfaction possible, a great number of them being capable of furnishing blooms for some time yet. Particularly showy are large groups of Cannell's lemon and orange African Marigolds, bearing immense flowers, and not less so are groups of Webb's brilliant strain of Petunias, which have been blooming freely since June, and seem likely to continue for some time yet. Old worn-out birch garden-brooms are turned to account by

using its wood to support the Petunias from trailing along the ground. Godetia Carter's Spotted Carpet is a charming dwarf free-flowering variety of this lovely annual, and is still blooming freely. Verbenas make fine border plants when planted in irregular masses near the margin of the border, and not pegged down, but allowed to grow freely. We have a beautiful display of seedling plants raised from Messrs. Webb's Pride of Kinver strain. Most lovely, too, are a mixed strain of Coreopsis. These flower and grow just as freely on a north as a south border; also they are not in the least particular as to growing in the shade. Zinnias (single and double), French Marigolds (Carter's tall and dwarf striped), and Tagetes pumila are still the life of the garden, conspicuous by the brilliancy of their flowers. So also are the Dianthus Eastern Queen and Crimson Belle, Heddewigii, and the Indian Pink. These, although biennials, should be retained for one year only, as they succeed much better if raised annually from seed. The many varieties of Emperor and German Stocks are still flowering freely, as also are the Asters. The Pæony and German quilled, Emperor and Victoria, are fine. Sutton's Miniature is a pretty dwarf strain, and so is Carter's new dwarf crimson bedding Aster. We grew our seedlings in a cool frame this season, and we found this plan much better than sowing them in heat. The varieties of Phlox Drummondii are especially showy, the variety known as coccinea being brilliant. *Lilium grandiflorum rubrum* is another lovely annual still in bloom. The red, white, and crimson varieties of the Valerian are very showy. These are but seldom met with except in cottage gardens in the west of England, where large clumps of them are seen in bloom. They are easily raised from seed.

Hardy herbaceous plants still continue to do the chief share in decorating the borders. *Rudbeckia Newmanni* is a mass of blooms, its bright yellow florets with dark centre rendering it a very showy plant. *Chrysanthemum maximum* is another capital free-flowering autumnal plant, together with *Pyrethrum uliginosum*, similarly white-flowered. *Lobelia cardinalis* is a grand autumnal bloomer, as also is *L. syphilitica*, with flowers of various hues. *Campanula pyramidalis* is a noble plant. Its beautiful spikes of blue flowers are charming. Of the many beautiful autumnal flowering plants few can surpass *Senecio pulcher*. This will last in bloom until frost sets in. *Pentstemons* are most useful and showy plants. Our seedling plants are just commencing to flower. These will follow the older plants and keep up a succession of bloom. We have a few *Delphiniums* still in flower, but these are seedling plants of last autumn, planted in the borders in May, and which did not commence flowering until the old-established plants had ceased doing so. It is evident, therefore, that if frequent sowings were made it would be possible to keep up a succession of blooms for a long time. We have upwards of 300 seedlings just pricked out in a store bed in readiness for transplanting into the borders next spring. Herbaceous Phloxes are still flowering freely. The Queen, a lovely white, bearing immense spikes, is a most effective late-flowering variety, as also is the Countess of Breadalbane, a rosy carmine variety. *Gladiolus brenchleyensis* and *gandavensis* are flowering freely. These are noble border flowers, especially where afforded generous treatment and planted in groups of not less than a dozen corms. Hardy Fuchsias are splendid plants for growing either in isolated positions or in the mixed border. In the latter position they are most effective for dotting about—one well to the front, another a corner plant, and one in a nook or recess in the borders. In such positions their graceful habit of growth renders them specially suitable for breaking the uniformity of outline in the arrangement of the plants in the border.

We have still a good show of yellow Carnations. This variety originated from seed in the garden here some years ago, and is one of the finest hardy, free-flowering yellow border Carnations we have yet met with. Lovely groups of *Lilium auratum tigrinum* fl. pl. and *lancifolium album* and *rubrum* are still in full bloom. The *L. lancifolium* varieties

are not permanently planted out, but are grown in pots until May, and are then planted. This lovely Lily is not sufficiently hardy to withstand the winter out of doors—at least, such is our experience; hence we lift the bulbs in autumn. The *L. auratum* succeed well with us. We find a somewhat high and well-drained position is the main secret of success in their outdoor culture. We hear that the *auratum*s planted among the *Rhododendrons* on the well-drained slopes in the charming grounds of Oldlands by the able gardener, Mr. Luckhurst, a year or so ago, have flowered magnificently this season. Notes on the method adopted by him have appeared from his pen in the last volume of the Journal. Ours are growing in various positions—the summit of rockeries, on rock beds, and in suitable nooks and corners of the borders.

Single Dahlias are grand just now. We have discontinued growing the double varieties, except the Cactus, Constance, and Juarez. These do not bloom at all satisfactorily; therefore we shall not attempt to grow them another season. Of the single type Harlequin, Darkness, Lucifer, White Queen, Walton Ware, Paragon, and lutea grandiflora are grand free-flowering and showy varieties. Sweet Scabious in various colours are also very showy and effective. Hollyhocks are on the wane, but we still have a few good clumps in bloom—seedlings of last autumn. We shall in future grow our stock from seed only, as we find the plants better able to stand the disease than when raised from cuttings, the plants being more robust and healthy. The queen of flowers has still a little of her royal lustre left to grace the closing days of September. That grand Rose, *Souvenir de la Malmaison*, is still bristling with lovely buds and blossoms. With us it is the first to bloom on a warm wall and the last in the borders. *Gloire de Dijon* is still blooming on a standard 12 feet high and on dwarfs in the borders. *La France* and *Baroness Rothschild* have still some queenly looking blooms, and so has *Magna Charta*, *Beauty of Waltham*, *Abel Carrière*, *Miss Hassard*, and *John Hopper*. The fragrant *Mignonette* with which the Rose beds are carpeted is delightful, and compensated for the absence of Roses.

Last and not least are the glowing colours of crimson and gold diffused through the fading green of the dying foliage of deciduous trees and shrubs. How beautiful are the fading leaves of the Ghent Azaleas peeping here and there out of the sombre green of the *Rhododendrons*! The deep crimson, gold, and warm brown diffused through the snowy *Mespilus*, the golden foliage of *Weigela Looymansii aurea*, and beautiful variegation of the Hollies—these and many more similar examples of Nature's autumn painting show how necessary it is that skill and taste should go hand in hand in the selection and planting of our shrubberies and woodlands. To the student of Nature there is as much beauty in the contrast and harmony of foliage as in the blending of colour in our bedding, and yet how little do we study this essential point! But enough has been said for the present on the subject of the flower garden in September.—A KENTISH GARDENER.

HOW WE CLEARED OUR VINES OF MEALY BUG.

WHEN I took charge of these gardens in June, 1884, the Vines were infested with mealy bug, and the Grapes, which were a very poor sample, were just beginning to colour. Now there is not one insect of this kind to be found in the vineries. Possibly it may be useful to some of the readers of our Journal if I describe how we managed to banish the pest, as it is impossible to grow good Grapes where it is present, and now is the best time to commence operations if all the fruit is cut.

Some of the bunches were free from the pest, and a piece of cotton wool tied tightly round the stems kept them clean until they were ripe, when they were all used as quickly as possible, and then we commenced action in earnest. The Vines were rather old, the borders and roots in very bad condition, spurs very long and only about 9 inches apart on each side of the rods. The laterals after one stopping had grown into a thicket; half of the spurs were sawn off, leaving the cleanest and best, and the

shoots shortened, leaving about five joints and one joint of the sub-laterals. We then cleared all rubbish out of the house and syringed well with water in which petroleum had been mixed 1 oz. to the gallon and the same quantity of softsoap. This syringing was repeated occasionally until all the leaves had died. The Vines were then pruned rather closely, all crevices in the rods cleaned with a knife, and all loose bark removed. The walls were thoroughly scraped, and, with the woodwork, were syringed with boiling water containing 4 ozs. softsoap to the gallon. The houses were closed and well fumigated with strong brimstone; the walls were whitewashed with hot lime, sulphur, and carbolic acid, all glass and woodwork being painted with petroleum, working it well into the crevices. The Vines were scrubbed twice with hot softsoap water 6 ozs. to the gallon. Some tar was obtained from the gas house and some stiff clay; the latter was thoroughly dried and reduced to a powder and then stirred into the tar, making rather a stiff kind of paint. This was then thoroughly worked all over the Vines with a stiff brush, taking especial care to stop all the holes and crevices in the rods. Four inches depth of soil was taken off the border, and as the outside roots had been all lifted, the inside ones were disturbed as little as possible, some good decayed manure, bones, and fresh turfy loam were put on again, and we thought we might say good-bye to the mealy bug after that.

The Vines were started steadily on January 5th and appeared secure until February 13th, when the leaves were unfolding and the sap in rising had slightly swollen the rods, causing little fissures in the tar-and-clay mixture round the spurs. On examining these a few bugs just hatched were found in two or three places, and it was evident our enemy was not killed. A gallon of warm water was obtained, and into this we put half a pound of softsoap, five wineglasses of petroleum, and five wineglasses of carbolic acid, and then painted all the Vine rods thoroughly, working it well round the spurs, but taking especial care not to touch the young shoots; this was a drop too much for the little white-coated visitors, and not one has survived.

When using the petroleum we were always very careful to keep the mixture well stirred; the carbolic acid used was the common dark brown kind, which can be obtained at 4s. 6d. per gallon, and which we find very useful for many purposes.—W. H. DIVERS, *Ketton Hall*.

ROSES—CONFUSING NOMENCLATURE.

SHAKESPEARE has a great deal to answer for. He rashly suggested that "A Rose by any other name would smell as sweet," and, as if to prove him a prophet, Roses have been given almost every other name conceivable. But the bard said "any other" name, and those who in desperate vindication of his scer-ship have given a Rose the same name as that of one already in existence are likely to be considered, like some other zealots, tiresome.

For instance, we have Comtesse de Paris (E. Verdier, 1864), a pretty enough H.P., though too thin to be of real value, where-upon Levêque, in 1883, sends out another Comtesse de Paris, which in spite of being a first-rate Rose, by some considered better than Countess of Rosebery, is likely to get less notice than it deserves owing to a confusion with a comparatively worthless variety. In the same way Jules Chrétien (Schwartz, 1877), a really good, vigorous, free-flowering, dark H.P., especially as a garden Rose to grow as a standard, makes its appearance to confuse growers who have discarded the indifferent variety of the same name distributed by Damaizin in 1869. It is only by the specification of his earldom that the beautiful but delicate Earl of Beaconsfield (Christy, 1880) escapes nominal identity with Lord Beaconsfield (Schwartz, 1878); while E. Verdier's two seedlings, Madame Prosper Laugier (1875) and Prosper Laugier (1884) run a considerable risk of getting mixed, as do the two Teas Madame Margottin (Guillot, 1866) and Madame Jules Margotten (Levet, 1871).

Sometimes, no doubt, it is only a regetable coincidence when two Roses appear in the same season with the same name, as when in 1877 Nabonnand, called a pretty light H.P. Madame Anna de Besabroff, a name which Gonod simultaneously bestowed upon a dark red seedling from Charles Lefebvre. François Louvat and François Levet, as well as Levet's two Teas, Madame Berard and Madame Bernard, are two pairs of names very liable to confusion, but this may be perhaps best avoided by growing only the first-named of each couple, F. Levet and Madame Bernard being of little value.

Happily many Roses thus afflicted have gone out of cultivation, but Vernet keeps up the complication by this year dis-

tributing Baronne Nathaniel de Rothschild to get mixed with Baron Nathaniel de Rothschild (Levêque, 1883), regardless also of the fact that this makes the sixth Baron(ne) Rothschild sent out. Perhaps the best way to avoid a muddle in this case will be to adopt Mr. George Paul's plan of translating the lady's title at once to Baroness Nathaniel de Rothschild.

The giving of the same name to two Roses that are in different classes is less reprehensible, but still inconvenient, for if anyone wishing for Nabonnand's pretty red Tea Duchess of Edinburgh (1874) should receive instead Dunand's H.P. of that name, probably remarks would be made of the kind that is not usually fully reported, while vituperation would inevitably ensue on the receipt of Nabonnand's Tea Duchesse de Vallombrosa (1879) when Schwartz's beautiful H.P. had been desired. So that it may not be altogether useless to indicate the following chief instances of this malpractice:—

Jules Finger.....	{ H.T. Lacharme, 1879.
	{ T. Madame Ducher, 1879.
Madame Hippolyte Jamain.....	{ T. Guillot, 1869.
	{ H.P. Garçon, 1871.
Duke of Connaught	{ H.T. Bennett, 1879.
	{ H.P. Paul & Son, 1876.
Duchess of Connaught	{ H.T. Bennett, 1879.
	{ H.P. Noble, 1882
Madame Eugène Verdier	{ H.P. E. Verdier, 1878.
	{ T. Levet, 1883.
Princess of Wales	{ H.P. Wm. Paul, 1864.
	{ T. Bennett, 1882.
Princess Beatrice	{ H.P. Wm. Paul, 1872.
	{ T. Bennett's new Tea.
Henry Bennett	{ H.P. Lacharme, 1875.
	{ T. Levet, 1872.
Madame Ducher	{ T. Ducher, 1869.
	{ H.P. Levet, 1879.

The last two names may be excused as being but little cultivated. Levet's Madame Ducher, although a fine flower, being such a wretched grower and a victim to mildew.

After so considerable a work as the publication of their illustrated catalogue, the Committee of the National Rose Society will probably be glad to let such matters rest for a time, but when next the question of synonyms is gone into, the authoritative judgment of the Committee on the following very-much-alike Roses, quite apart from their worthiness of inclusion in the catalogue, will be gladly welcomed:—

La Reine, Reine du Midi, Alice Dureau; Duc de Rohan, Mrs. Jowitt; Souvenir de Spa, Comtesse de Camando; Antoine Ducher, Edouard Pynaert, Marie Louise Pernet; Madame Berard, Mélanie Soupert; Alfred Colomb, Wilhelm Koelle; Elise Boelle, Madame Noman, Mlle. Bonnaire, Madame O. Kerchove; Madame Maurin, Madame Denis, Adèle Pradel Bougère, Clothilde; Narcisse, Enfant de Lyon.—THETA.

APHIDES AND THE DROUGHT.

I HAVE deferred writing for this Journal some notes on the extraordinary migration of aphides (vulgo "fly" or "blight") that occurred last July, because I was desirous of ascertaining whether in those localities where numbers of these insects were noticed travelling through the air they were subsequently found infesting plants in gardens to an unusual extent. So far as I know up to the present time, such was not the case upon the Hops, and of course upon various cultivated plants there have been aphides during the later summer, but not generally in abundance, but they were very plentiful in many places through the early part of the season undoubtedly. The prompting cause of this migration was, to all appearance, the dryness and comparative coolness of July, owing to which the plants that had afforded food to the aphides failed to yield the needful supply of sap. As a consequence, these insects (at least, certain species), ceased to multiply in the wingless form, and a brood emerged of the winged type, which then set forth to seek fresh provender with questionable success.

For the information of some readers, I may state briefly that it is customary for the insects of this tribe, or the majority of them, to make two yearly migrations—one in the spring, the other in the autumn, the particular date depending upon the weather. It is on these dull, somewhat oppressive days, of which we get several both in spring and autumn, that, from the check given to the flow of sap, the food plants of the aphides no longer furnish abundant food. The unwinged insects no longer appear, the winged emerge, and then follows a migration, when people say, and truly, "there is a blight in the air." An easterly wind has been credited, amongst other mischiefs, with that of bringing aphides, but I do not think facts support this, for I have seen them flying with the wind from every quarter. As a rule, they

prefer to migrate on a day that is rather calm. Still, it may be true that the east wind, by its chilling influences, often produces an effect upon vegetation that sets the aphids hosts adrift. How far they travel in these migrations is a debateable point. The late Mr. Walker, and other observers, state the distances are usually short, but it seems probable, as I will show, that they may go a mile or more, ill-adapted as they seem for flight. In that case, it is likely they move along, not so much by any effort, as by yielding themselves to the force of the breeze.

How far the aphid migration of July last extended over the British Islands I cannot say, doubtless it would be most marked in the counties that suffered greatly from drought. It was noticed by myself in the districts of Middlesex, Essex, Kent, and Surrey; it has been reported from the Midlands, and I trust one result of this article will be the publication of further particulars in reference thereto. This migration was remarkable, not only for the month of its occurrence, but for the long time it lasted (a fortnight, or about that), and the aphides were, contrary to custom, on the wing while a strong wind was blowing upon several days. They came also to us in North Kent from all directions, frequently in such numbers as to be an annoyance to passengers along roads or across fields, sometimes entering the eyes, ears, and mouth. Having to be in London on one of the last days of July, I crossed from the eastern suburbs to the western, and in every street there were aphides wafting about. The most singular scene, however, was on the morning of August 1st, along the High Street, Gravesend, and some of the thoroughfares adjacent. Here every by-passer exhibited them upon his clothes by scores, and along the angles of doorsteps and similar places the insects laid in little green heaps, seemingly driven to the ground by exhaustion.

With regard to these, and some observed near the Kentish shore on previous days, it is a fair conclusion that they must have crossed from Essex, a distance of at least three-fourths of a mile. And a part of those that had thus made their way across the Thames very possibly travelled a mile overland in Kent and Essex, if not more. As to the species, two were conspicuous—a green aphid that I take to be *A. Humuli*, or its variety *Malahab*, an insect occurring not only upon the Hop, but on fruit trees and various Rosaceous plants. The other was a small blackish aphid, in much less numbers. Of its identity I am uncertain, it resembled a species often abundant on aquatic plants. Of these aphid hosts I believe few survived. They either died *en route*, or in reaching new food-plants found them as sapless as those they had left.—J. R. S. C.

TOMATOES.

THIS valuable vegetable is rapidly growing in popularity, and an enormous trade is done throughout England in this article of consumption alone, to the extent of a great many tons annually. We have now such a host of varieties that it is an important question which pay the best, and if growers give their experience in various localities, your readers will be able to judge for themselves which they may prefer for their own growing.

There is now an extensive trial of Tomatoes at Harefield Grove, near Rickmansworth, the residence of George Webster, Esq., where 5500 plants are now fruiting, and have been in bearing for some time, all cultivated under glass, and with the exception of the two early houses no fire heat has been used. In one of the early houses Hathaway's Excelsior, planted last September, and in bearing since March, will be discarded to make room for Harefield Grove Red, originally a selection made by Mr. Gough's father many years since from the Old Red, and since carefully selected by Mr. Gough, the manager of the Harefield Grove Gardens, and a fixed character obtained. It is large and handsome, highly corrugated, and of a rich bright colour, of short, sturdy habit and short-jointed, and a prolific cropper, and regarded by Mr. Webster and Mr. Gough as the premier variety of the collection. A long span-roof house has recently been planted with this variety for the winter supply, and the plants are now 2½ to 3 feet high, strong and vigorous and already fruiting, and all have been struck from cuttings.

King Humbert.—This is extensively grown there, and is a favourite, but at present it is of a very sportive character and wants selecting. Mr. Gough intends using cuttings from the true variety, which is oval in shape, of medium size and deep red in colour, fruiting profusely in clusters, and is a handsome ornamental variety of medium height. In a range of frames this variety is planted out and growing in the soil and fruiting abundantly.

Chiswick Red.—A good cropper both in pots and planted out, and is like King Humbert in form and habit, but the fruit is far less solid and heavy. In fact it is of a woolly substance, and Mr. Gough does not intend growing Chiswick Red again.

Williams' Improved Orangefield.—A very fine prolific variety, not very smooth, but of good size and weighs heavily, of dwarfish habit, and is regarded by Mr. Gough as second best to Harefield Grove Red.

Sutton's Perfection.—A very large handsome and short fruit; a

fine late variety and a good cropper, but not so heavily as the Harefield Red or Improved Orangefield, but a good exhibition variety.

Sutton's Maincrop.—This shows some very large fruit, but is not a good bearer under glass. In form it closely resembles Harefield Red, but crops thinly, and has very distinct foliage which frequently burns under glass. Probably this variety will do much better out of doors.

Viel's Criterion.—Oval-shaped, but not so large or so good a cropper as Criterion Improved.

Viel's Criterion Improved.—This has a rounder and flatter fruit than its parent, not so rich in colour as many kinds, but is a good cropper early and late.

Sutton's Conqueror.—A ribbed flat red, a fine variety, good cropper, not equal to Harefield Red, and not so early or so handsome.

American Perfection.—Sent to Harefield by Mr. Bennett of Potters Bar, and 100 plants are now fruiting in pots, is a good grower, smooth, and showing fruit freely, and is evidently a large, handsome, promising variety, showing in clusters, but not yet coloured.

Jackson's Wonderful.—A tall-growing variety, very similar to if not identical with Hepper's Goliath, and not worth growing compared with Sutton's Perfection as a late variety.

Phillips' Perfection.—One of the handsomest in cultivation, and a long way ahead of all the Hathaway's Excelsior type, a capital cropper, and well worth growing.

Hackwood Park.—A bad setter early, but an extraordinary cropper late, large in size and of smooth form, some slightly corrugated, bright colour, and a heavy, solid fruit. One of the best varieties grown.

Harefield Golden Gem.—A seedling raised here and largely grown now, of medium height; fruit of good size, handsome and slightly ribbed, and it frequently reaches 6 to 8 ozs. in weight. It is an excellent cropper, early, and a constant bearer. Colour, bright golden yellow, and is really a first-class new variety.

Other varieties are also under cultivation at Harefield, but those enumerated stand out prominently as the best.—SOLANUM.

PREPARING FOR SPRING.

THE summer is now on the wane, and attention must be turned to those plants which produce such pleasing effects in early spring. Daisies are extensively employed, but how they have suffered! killed in some instances, and in others a few straggling half-withered stems are but the remnants of those effective spring bedders. Some, I feel sure, will have difficulty in procuring sufficient supplies, and those who may be thus placed will do well to bear in mind that a very useful spring-flowering plant may be found in *Limnanthes Douglasi*, of which a stock may quickly and cheaply be raised. It is one of the best of annuals for autumn sowing, and when of sufficient size should be planted in the beds or borders in which it is intended to flower at about 4 or 6 inches apart. It forms spreading tufts of leaves, from which in spring issue in great profusion its pleasing and effective white and yellow flowers. It is not too late even now to sow this, but which should be no longer delayed. It thrives in most soils made fairly rich. Then there are Primroses and Polyanthus, Forget-me-nots, Silene, Wallflowers in various colours, and many more which will need to be in fair sized plants now; and then when sending off bulb orders do not forget when ordering Hyacinths, Tulips, Crocuses, and Snowdrops, the bright gems of spring such as *Chionodoxa Luciliae*, *Iris reticulata*, *Scillas bifolia* and *siberica*, *Trillium grandiflorum præcox*, *Muscari lingulatum*, *Anemones blanda*, *apennina*, *coronaria*, and *fulgens*, *Narcissus Bulbocodium*, *Triteleia uniflora*, and the variety *lilacina*. These, and many more too numerous to mention, will all assist in making the display much more diversified and full of interest than even the most sanguine may anticipate.—E.

SHOW AND FANCY DAHLIAS AT THE NATIONAL DAHLIA SHOWS.

THERE is one most striking and interesting feature which these analyses bring out more and more clearly every year, and that is the prominent positions that are being assumed and retained by varieties of recent introduction, thus indicating that a decided and somewhat rapid improvement is taking place in the character of this grand autumn flower. This is more particularly noticeable in the Show classes. On carefully comparing the following lists with those published in the *Journal of Horticulture* last year, it will be seen that the newer varieties have, as a rule, during the past twelvemonth kept their positions better than those which have been out, say, six or more years. Although the abnormally dry summer through which we have passed has evidently affected some varieties much more adversely than others; yet as this would apply to both the newer and more established Dahlias alike, it can hardly have influenced the results to any appreciable extent. As regards the Show flowers there are six which have fallen three places since last year—viz., James Vick, Burgundy, James Service, Rev. J. Goodday, Ovid, and W. H. Williams; while John W. Lord and Criterion have both gone down four places: Alexander, Cramond, John Wyatt, Modesty, and George Dickson five places: and Royal Queen (apparently one of those least able to resist a long drought) no less than seven places. Pioneer, George Smith, Rosy Morn, and Duke of Connaught do not appear at all in this year's list, although six additional names have been added to it. On the other hand, George Rawlings, Mrs. Harris, and Thomas Goodwin have each gone up three places; while Chris Ridley, Champion Rollo, Joseph Green, John Standish, Sunbeam, Miss Cannell, James Stephen, Harrison Weir, Lady Gladys Herbert, and notably that chastely tinted and exquisitely formed

variety Mrs. Gladstone, obtained no mention at all in the tables published last year. Indeed, if this year's exhibition were to be alone considered, Mrs. Gladstone would stand second only to the leading flower—i.e., the Hon. Mrs. Percy Wyndham.

The changes in the relative positions of the Fancies since 1884 will be seen on comparison of the two lists to have been, generally speaking, but slight; indeed, the only one among them all that has lost more than two places since last year is John Forbes, which has gone down three places, while Professor Fawcett and Miss Lily Large have both risen four places, and Chorister five. Peacock, James O'Brien, Polly Sandell, Maid of Athens, and Wizard make their appearance for the first time in any of these tables. It should, however, be mentioned that five more Fancy varieties have been tabulated this year in the Journal than in 1884. In 1883 no fewer than thirty-eight Fancy flowers were exhibited in the Show classes, but at this year's Show there were only thirteen. During the present autumn the following would seem to have been the least constant:—

James O'Brien.....	exhibited 4 times as a Show and 5 as a Fancy.
George Barnes.....	" 3 " " 5 "
Flora Wyatt.....	" 5 " " 10 "
Rev. J. B. M. Camm ..	" 4 " " 13 "

SHOW DAHLIAS.

Number of times shown				Name.	When sent out.	Raiser's Name	Colour.
1883	1884	1885	Tot.				
21	21	26	68	Hon. Mrs. P. Wyndham	1881	Keynes & Co.	Yellow and scarlet
19	24	19	62	Henry Walton.....	1873	Keynes.....	Yellow and purple
18	21	19	58	James Coaker.....	1871	Keynes.....	Purple
15	13	15	43	William Rawlings....	1881	Rawlings ..	Purple
16	15	15	46	Goldfinger.....	1881	Fellowes....	Yellow and red
15	16	15	46	Joseph Ashby.....	1879	Turner.....	Orange
12	14	20	46	Mrs. Harris.....	1873	Harris.....	White and lilac
13	17	14	44	Shirley Hibberd.....	1881	Rawlings ..	Crimson
16	13	14	43	Prince Bismarck.....	1879	Fellowes....	Puce
14	15	12	41	Ethel Britton.....	1880	Keynes & Co.	White and purple
18	12	9	39	James Vick.....	1881	Keynes & Co.	Maroon
9	14	16	39	Prince of Denmark ..	1881	Fellowes....	Maroon and crim.
12	9	15	36	Vice-President.....	1883	Keynes.....	Orange
9	12	13	34	Mrs. Dodds.....	1881	Keynes & Co.	White and lilac
1	9	24	34	Mrs. Gladstone.....	1884	Hurst.....	Pale blush
6	19	7	32	Burgundy.....	1877	Turner.....	Puce and purple
10	12	8	30	Flag of Truce.....	1888	Wheeler.....	White and lilac
11	11	8	30	John N. Keynes.....	1871	Keynes.....	Yellow
7	9	12	28	George Rawlings.....	1882	Rawlings ..	Maroon
5	12	11	28	Mr. Harris.....	1881	Rawlings ..	Scarlet
7	12	8	27	Clara.....	1879	Rawlings ..	Peach
10	8	9	27	Julia Wyatt.....	1869	Keynes.....	White
10	7	9	26	John Bennett.....	1875	Rawlings ..	Yellow and scarlet
10	15	1	23	Royal Queen.....	1875	Eckford.....	Cream and crimson
14	7	4	25	A. Cramond.....	1872	Keynes.....	Maroon
6	13	6	25	James Service.....	1873	Keynes.....	Crimson
12	8	5	25	John William Lord ..	1877	Keynes.....	Buff
6	7	12	25	Thomas Goodwin.....	1873	Goodwin.....	Maroon
2	11	10	23	Imperial.....	1883	Keynes & Co.	Purple
7	8	8	23	Mrs. S. Hibberd.....	1877	Rawlings ..	Cream and pink
7	11	5	23	Rev. J. Goodday.....	1879	Rawlings ..	Maroon and purple
6	10	6	22	Herbert Turner.....	1873	Turner.....	White
6	8	7	21	Lord Chelmsford.....	1880	Keynes & Co.	Maroon
7	9	5	21	Ovid.....	1874	Turner.....	Purple
5	7	8	20	Constancy.....	1878	Harris.....	Yellow and lake
2	8	10	20	James Stephen.....	1882	Keynes & Co.	Scarlet
6	11	3	20	John Wyatt.....	1877	Keynes.....	Scarlet
8	3	8	19	Emily Edwards.....	1879	Keynes.....	White
3	7	9	19	Harrison Weir.....	1883	Rawlings ..	Yellow
3	9	6	18	Lady Gladys Herbert	1835	Keynes.....	Orange and crimson
3	8	7	18	Miss Cannell.....	1881	Eckford.....	Cream and crimson
2	6	10	18	Sunbeam.....	1881	Fellowes....	Buff
8	5	5	18	Walter H. Williams..	1881	Keynes & Co.	Scarlet
5	3	9	17	Champion Rollo.....	1881	Keynes & Co.	Orange
6	1	10	17	Joseph Green.....	1881	Keynes & Co.	Crimson
5	3	9	17	John Standish.....	1872	Turner.....	Crimson
7	3	6	16	Annie Neville.....	1863	Keynes.....	White
5	5	6	16	H. W. Ward.....	1881	Keynes & Co.	Yellow and crimson
5	8	3	16	Modesty.....	1881	Fellowes....	Blush
2	9	4	15	Chris. Kidley.....	1877	Turner.....	Crimson
6	5	4	15	Criterion.....	—	Edwards....	Rose
5	7	3	15	George Dickson.....	1882	Keynes & Co.	Chestnut

FANCY DAHLIAS.

Number of times shown.				Name.	When sent out.	Raiser's Name	Colour.
1883	1884	1885	Tot.				
16	23	19	58	Gaiety.....	1879	Keynes.....	Yellow, red, & white
15	16	17	48	Mrs. Saunders.....	1872	Turner.....	Yellow and white
9	14	13	36	Rev. J. B. M. Camm..	1873	Keynes.....	Yellow and red
6	17	10	33	Flora Wyatt.....	1871	Keynes.....	Orange and red
14	14	5	33	George Barnes.....	1873	Keynes.....	Lilac and crimson
11	13	9	33	Fanny Sturt.....	1868	Pope.....	Red and white
7	10	13	30	Chorister.....	1881	Keynes & Co.	Fawn and crimson
8	10	12	30	Professor Fawcett....	1881	Keynes & Co.	Lilac and brown
12	12	4	28	Henry Glascock.....	1875	Keynes.....	Buff and crimson
5	11	12	28	John Forbes.....	1882	Keynes & Co.	Maroon
7	11	8	26	Miss Lily Large.....	1876	Keynes.....	Yellow and crimson
7	13	6	26	Egyptian Prince.....	1873	Keynes.....	Orange and red
10	9	7	26	Hereules.....	1877	Keynes.....	Yellow and crimson
5	12	7	24	Miss Browning.....	1880	Keynes.....	Yellow and white
2	17	5	24	Hugh Austin.....	1881	Keynes & Co.	Orange and red
14	8	4	23	John Lamont.....	1875	Keynes.....	Maroon and black
4	6	13	23	Oracle.....	1877	Fellowes....	Yellow and crimson
10	4	8	22	Peacock.....	1877	Turner.....	Maroon and white
5	11	5	21	Mrs. N. Halls.....	1881	Rawlings ..	Scarlet and white
3	10	5	18	Florence Stark.....	1879	Keynes.....	White and purple
2	10	5	17	James O'Brien.....	1881	Keynes & Co.	Yellow and crimson
10	2	5	17	Edward Peck.....	1881	Keynes & Co.	Lilac and maroon
1	5	11	17	Jessie McIntosh.....	1880	Keynes & Co.	Red and white
2	10	5	17	Polly Sandell.....	1882	Keynes & Co.	Yellow and white
3	7	5	15	Rebecca.....	1883	Keynes & Co.	Lilac and crimson
3	9	3	15	Maid of Athens.....	1878	Keynes.....	Maroon, red, white
				Wizard.....	1878	Fellowes....	Fawn and maroon

I find that at the three Exhibitions which have been held by the

National Dahlia Society there have been in all 3332 flowers staged for competition—viz.,

In 1883	692 Shows, and 239 Fancies.
" 1884	754 " 425 "
" 1885	837 " 335 "
2283	1049

Also that in these three years the Show kinds were on an average exhibited in about 160 different varieties, and the Fancy flowers in about seventy varieties.

When taking down the names of the Dahlias at these exhibitions I could not help noticing the very untidy and generally unsatisfactory way in which many collections were named. It occurred to me at the time how easily the appearance of these stands might be improved by the adoption throughout the Exhibition of a neat label of some neutral tint and of uniform size. These labels should, of course, for the convenience of the judges and visitors be secured to the stands immediately beneath the different flowers.

I am indebted to Mr. A. Turner of Slough and Mr. W. H. Williams of Salisbury for supplying me with nearly all the dates which were wanting in the tables published last year.—E. M., *Berkhamsted*.

TACSONIA MANICATA.

THE Passionworts comprise some of the most gorgeous of tropical climbers, but there are few, even of the tender species, which surpass or equal in beauty this magnificent plant. Although it is brought to us from



Fig. 46.—*Tacsonia manicata*.

equatorial regions, yet, from the altitude at which it is found growing (often 7000 feet above the level of the sea), it is a greenhouse climber.

In their habit of growth the Tacsonias resemble very closely the common Passion-flowers, being, like most of them, of vigorous growth, the shoots extending 10 or 20 feet in a season, according to the age of the plant. The resemblance between the two genera is indeed carried so far, that some of the most acute botanists of the present day are unable to give the precise grounds for the separation of the Tacsonias from the true Passion-flowers.

The chief interest of these plants centres in their elegant scarlet flowers. These are, at a glance, seen to consist of ten segments or divisions, the lower portions of which are united into a tube, surrounded at its base by three leaf-like bodies termed bracts. These bracts, which are shown in the engraving, are common not only to the Tacsonias, but also to nearly all the other Passion-flowers, though in a few species they are placed at a considerable distance below the flowers and are extremely small. In one or two species they are cut into hair-like segments, and give a very interesting appearance to the flower, as in the *Passiflora ciliata* and *P. foetida*. These bracts are not much larger in *T. manicata* than in many other Passionworts; but from the shortness of the tube

which is almost concealed when the flower is expanded, "it may not unaptly be compared to an arm thrust into a large loose glove;" from which circumstance it is presumed that Jussieu gave it its specific name of *manicate*, or gauntleted.

The fruit is not the least remarkable part of the plant. In *Tacsonia pinnatistipula* it is 5 or 6 inches in circumference, spherical, and when ripe of a yellow tint, hanging by the very long peduncle to which the remains of the flower are usually attached. The seeds are surrounded with a pulpy arillus of an edible nature, especially in a few species, which are not unfrequently cultivated for the sake of their fruit, as *P. edulis* and *P. quadrangularis*.

T. manicata may be increased by cuttings either of the old wood in spring or of short young shoots in summer, under a bellglass with a little bottom heat. When grown under glass most of the *Tacsonias* will ripen seed, from which they may be readily increased.

The specific name has been already explained; the name of the genus appears to be a latinised form of *Tacso*, that by which the plants are known in Peru. There are several species besides *T. manicata*, those best known being *mollissima*, *pinnatistipula*, *princeps*, *Van Volxemi*, and *grandis*.

We must not omit to observe that the shoots of the *Tacsonias* do not require shortening, but if they are too crowded they may be thinned out while young. When the growth is too rampant and sterile of blossom, a flowering habit may often be induced by training the shoots horizontally, or nearly so.—W. T.

GRAPES AND GRAPE JUDGING.

A RECENT article on the above, and the Grape Exhibition at South Kensington, have caused me to put a few thoughts on paper. I have again re-read my article in "our Journal" for October 13th, 1870, page 279, with some pleasure, for it seems to strike at the root of Grape exhibition. I have now several points to note, but first I would ask, Has not the judging at the last few Grape shows favoured the huge clusters of unripe, or, at least, not the ripest fruit, rather than the medium or smaller bunches of presentable size, colour, and ripeness. All honour is due to those who by their skill and perseverance can produce such clusters as I have seen of late, which must be very profitable from a market point, but are such bunches what we ought to see on the exhibition table?

The South Kensington Exhibition, good as it was, must have been disappointing. No doubt some of the Grapes from having been at the Palace did not look so fresh, and there was a weakness in several classes. As the aim now is to get the finest possible berries, this is sometimes done at the expense of colour. My contention, however, is that medium bunches with larger and better coloured berries are passed for the monster bunches with smaller berries and less colour. At the above Show judging should have been comparatively easy, the Grapes being staged in their own classes, as they should be whenever practicable. Judging mixed Grapes is a very different and difficult matter. No doubt the small number of entries in some of the classes was caused by the fact of growers, more especially private growers, not having their Grapes fit for table; market men have always the advantage in this respect. What we want is a good show in December, say the week before Christmas, just to see what is in perfection then. The South Kensington results were very gratifying to me so far as that goes, so I am not complaining of my own exhibits, but the opinion of several good men was the same as my own, though nothing pleases the general public better than the prizes going to the largest bunches. I should like to make a note of the two splendid bunches with large berries of *Gros Guillaume*, which when first cut must have been superb, now these were not clusters or double bunches.

When *Madresfield Court* is shown in a mixed class with *Alicante* and *Black Hamburgh*, at first sight the *Alicante* would have first place, but considering the quality of *Alicante* with either of the others, and *Alicante* would not have a place. I am fully aware of the qualities of *Alicante* as a late Grape. I had it in March of the present year next to *Lady Downe's* for flavour. As regards berries, *Madresfield Court* will generally surpass *Alicante*, but not in colour. Now, to my idea, *Madresfield Court*, if ripe, with good berries, even if slightly deficient in colour at the top, should stand before *Alicante*, and *Black Hamburgh* generally will stand last unless the bunches and berries are good. The *Madresfield Court* exhibited at the July Show, South Kensington, were grand. This variety is first-rate as a summer or autumn black Grape when well done, and now the culture of it is getting understood it will hold its own. Its two weak points are its liability to crack and want of finish in colour. The first defect, with patience, can be overcome by extra ventilation and less water at the roots. From the time mine show the least signs of colour, not only do I withhold water, but also cover the border with a good layer of straw to stop the damp rising, and the roots are entirely inside. Colour, or, rather, want of colour, is caused, I believe, not so much by overcropping as by want of fire heat. In other years, when I started them earlier, consequently using more fire heat, I had them much better in colour than I have now with starting late, but I gain this time by heavy crop of sound fruit. There is nothing like a good crop to keep them from

cracking, and if Vines are healthy it is astonishing the weight they will carry. Two Vines last year ripened 70 lbs. of fine fruit.

I expect *Gros Maroc* will be the general Grape in time, as it crops well and colours without any trouble.

Exhibiting is a trade of its own, and the large London shows represent the growers for market generally, but there is nothing like a good local exhibition. At these shows Grapes are only staged that are fit to place on the table, so that if not perhaps very large, there is quality.—STEPHEN CASTLE, *West Lynn, Norfolk*.

I CONSIDER that Mr. Iggulden has done gardeners generally a good service in bringing this subject to the front. It is one that badly wanted ventilating, for I cannot help thinking that many gardeners who are allowed to exhibit are doing wrong by cutting Grapes for exhibition in July and August, which "A Young Exhibitor" says "ought not to appear before the judges until September has well nigh passed into October." There are two sentences in Mr. Iggulden's article, on page 251, which I hope may be impressed upon the mind of every gardener who may chance to read them. They are as follows. After his able criticism on "S's" remarks on his former article on this subject, he says:—"It is quite certain that he would get no reward for them (meaning unripe Peaches, Nectarines, &c.) if he exhibited them; and exhibitors of unripe Grapes ought also to be made to feel that it is a very unwise proceeding to cut them." Again, he says, "Are they fit to send to table after the show is over? and, if not, ought they to be sacrificed?" These are questions which might well be asked when Grapes as green as grass are seen set up in the classes for white Grapes, and *Gros Colman* and *Alicante* staged in the classes for any other black in July. If there is one thing more likely than another to disgust employers and cause them to prohibit their gardeners from showing fruit we think this is it. I well remember seeing some so-called white Grapes staged at one of our large provincial shows, and could not help wondering what they would be used for after the show was over.

I hope now that the subject has been started that it will be thoroughly well threshed out, for it certainly is one of considerable importance. I am particularly glad to see *Madresfield Court* so justly praised by "A Young Exhibitor," and I consider that every possible encouragement should be given to growers who, even if they only produce this grand Grape in what may be termed second-rate condition, for, after all, are not Grapes for eating? Do not misunderstand me, for I am one of the strongest advocates for sending fruit to table perfectly clean and finished in every way, but the fine flavour of *Madresfield Court* should make up for any little deficiency of colour at the footstalks. However, I suppose that the Judges at the late Taunton Show will disagree with what has been written on this subject, and I fear also that very many of the framers of schedules are not aiming solely at the advance of horticulture in the highest sense, otherwise so many societies would not be completely wrecked by a wet day. I think it a pity that prizes are not offered solely for *Madresfield Court* at our summer shows. This would greatly encourage growers to persevere with it, and I feel sure that many who have almost lost heart on account of the berries splitting, would, by paying more attention to atmospheric conditions, eventually succeed. At any rate, such examples of judging as Mr. Iggulden quotes require some explanation, for even if we say nothing about the flavour of *Madresfield Court*, all will admit that there are hundreds of growers who annually produce good examples of *Alicante* who have not, so far, been successful with the former. Such adjudication is most certainly calculated only to aggravate the evil of which we complain.

I hope that the remarks from Mr. Iggulden and "A Young Exhibitor" will have the effect of mending matters in this respect.—WM. JENKINS, *Aldin Grange, Durham*.

THE excellent exhibitions of Grapes held recently in London and Edinburgh indicate the vast amount of interest taken in this superb fruit, and it must be a source of much gratification to many to find the Journal devoting so much space to the subject of Grape culture. There is hardly a week passes without some important hints being recorded, and the weekly questions which appear in your correspondence columns relating to the Vine show that the matter never flags; indeed Vine culture may be placed at the top of the list of interesting fruit subjects. Of late the notes on judging and exhibiting have commanded attention. Mr. Iggulden, in his complaints at page 204, wishes it to be understood that he does not grumble through being a disappointed exhibitor. He cannot be suspected of this, but let me ask him one question, Has his *Madresfield Court*, or any other of his summer Grapes, been passed once this season in favour of later varieties? "No one, I think," writes Mr. Iggulden, "will dispute the fact of the great superiority of *Madresfield Court* over *Alicante*." I will. Where there is one *Madresfield Court* grown for either private or market use twenty *Alicantes* may be placed against it. The *Alicante* is everybody's Grape. It will grow most luxuriantly either in the hands of professional or amateur. It never fails to produce bunches in the utmost profusion. They always set well, swell freely, colour superbly throughout, and keep sound and in splendid condition for months. Its value on the table may be reckoned from the quantity grown everywhere, and the great demand for it in the market. Such is the character of *Alicante*. *Madresfield Court*, on the other hand, frequently fails to form its berries properly, numbers of them split before they are ripe. When the points are black the back ends are often perfectly green. It is impossible to keep it for any length of time after it is ripe; and what with its splitting, inferior colouring, and non-keeping properties, it is distrusted by professional gardeners and shunned by amateurs.

In my opinion there is just as much credit in having the Alicante, or any other late Grape, in faultless condition in August or September as in having the early ones in good condition then. In fact the former takes more culture than the latter, and when the usefulness of the varieties is taken into consideration the late ones have it wholly. If Grape shows were held every month in the year "A Young Exhibitor's" ideas, page 251, might be worth something, but to speak of passing all Grapes not in season, irrespective of their condition, is a suggestion which no good judge would entertain. Madresfield Court is "A Young Exhibitor's" favourite black Grape. Most growers of experience prefer the Black Hamburgh to it. Scores of judges whose knowledge of Grapes is as deep and wide as that of Mr. Iggulden, are annually in the habit of awarding prizes to these late Grapes when they find them worthy of it, and this meets with the approval of the majority of cultivators.

Alicante is certainly a standard Grape. Madresfield Court is nothing of the sort, and never will be. At the Palace Show on September 4th only four examples of Madresfield Court were staged in its special class. The third-prize bunches were inferior, while amongst the eleven examples of Alicante shown the quality was so good that some extra prizes were awarded. I find that varieties which are in the habit of winning prizes are soon sought after and planted by the public generally. Those who follow this rule with Madresfield Court will be disappointed, but no one will ever regret planting the Alicante. I know one instance where it is grown in the garden of a marquis in this county. It is started early into growth, matures its fruit under the influence of the August sun, and from the beginning of September until March it eats like a crisp Black Hamburgh.

Grapes generally have been uncommonly good this season. I have seen hundreds of bunches in different parts of the country, and I cannot remember a year when colouring was so perfect. It is extraordinary the quantity of water Vines require at the root when in full growth, and this seems to be better understood now than many years ago.

Mr. Stephen Castle always writes instructively and interestingly on Grapes, witness his notes page 246. The cases of burning he cites are peculiar; many Vine growers experience the same thing, but few can fully explain the cause. One Vine of ours, a Gros Colman on its own roots, went in much the same way in August. Another of this variety, grafted on Foster's Seedling, and growing next to the burnt one, is perfectly green in the foliage still.

I am particularly fond of the Foster's as a stock for Gros Colman. A friend of mine who owns two fine vineries, was induced by me, when planting them four years ago, to put in a rod of Golden Queen. It has always made wonderful shoots and leaves and larger bunches than I ever saw at Chilwell, but just when it begins to ripen the berries commence to show little black spots, which spread until the berries quite decay and fall. My experience or observation has never led me to ascribe such a character to Golden Queen, and I cannot understand it. Has anyone else observed any defect?

Golden Champion and Duke of Buccleuch do not make headway. I shall never forget the superb condition in which I have seen them at Dalkeith and Clovenfords, but the bunches generally seen at shows now-a-days are too ragged and small to be impressive.

The other day I read that buckets of gas tar placed in vineries would disgust the wasps and keep them out. Having charge of the gas-making here, I at once resorted to the tar-pump, filled some tins, placed them in the vineries, and after a week's trial the wasps are huzzing about inside as busy as ever. I know a gentleman who, in having his new vineries finished a few years ago, had the ventilators carefully covered with perforated zinc with holes just wasp-proof. They remain on always, and I believe they will soon pay for the little extra expense incurred in placing them there.—A KITCHEN GARDENER.



A MEETING of the Executive Committee of the PEAR CONFERENCE was held at Chiswick on Tuesday last. John Lee, Esq., in the chair. Present: Messrs. Veitch, Lane, Shirley Hibberd, A. Dean, Bunyard, Woodbridge, Roberts, and Dr. Hogg. It was decided that the Congress will be opened on the 21st of October and close on the 4th of November. Mr. Barron, the Secretary, reported that he had received notice of a very large number of entries, and that he anticipated the extent of the collections would be as great as were those at the Apple Conference, if not greater.

— A MEETING of the FRUIT COMMITTEE was held on Tuesday at the Chiswick Garden of the Royal Horticultural Society, John Lee, Esq., in the chair. Present: Messrs. Rivers, R. D. Blackmore, Bunyard, Lane, Woodbridge, Sutton, Silverlock, Roberts, Burnet, Willard, Veitch, and Dr. Hogg. A large number of new varieties of late Potatoes were dug and examined, and some of them were cooked; but, as in the opinion of the Committee it was too early in the season to judge of the merits

of late Potatoes, a further examination was proposed to be made after Christmas. The Committee then proceeded to an examination of the new Grape called "John Downie," which was growing in the early vinery, and they were unanimously of opinion that it is identical with Alnwick Seedling.

— At the City of London College a course of LECTURES ON AGRICULTURE, beginning on Oct. 6th and ending in May, will be given on Tuesday evenings by Mr. Bernard Dyer, F.C.S., F.I.C. The lectures will treat of soils, plant life, crops, manures, tillage operations, live stock, food, &c. Students are eligible to compete for the Lubbock scholarship of £10, the science studentship, and numerous college and other prizes. The Saddlers Guild also offer a prize of £5 5s. to the student who passes the best examination in chemistry and agriculture.

— "W. G." asks if any of our correspondents can advise him as to the best DRILL FOR BEET AND TURNIPS suitable for market gardening; also as to the best early Turnip snitable for northern climate and time for sowing? We shall be glad to publish the information requested.

— Mr. G. CUMMINS has sent us from Mr. Smee's garden, The Grange, Hackbridge, specimens of SUTTON'S WHITE CZAR RUNNER BEAN. We have never seen finer pods of any variety. Some of them are a foot long and 1½ inch wide, thick, fleshy, crisp, and excellent when cooked. The variety, we are informed, bears abundantly, and is regarded by Mr. Cummins as a valuable acquisition.

— Mr. WILLIAM HOLMES, Frampton Park Nurseries, Hackney, Hon. Sec. of the NATIONAL CHRYSANTHEMUM SOCIETY, has sent us samples of the new silver and bronze medals the Society is offering at their annual Show in November next, and which are also supplied to the affiliated societies. The die is a very artistic one, representing in relief the different sections of Chrysanthemums; incurved, Japanese, Pompon, Anemone, Anemone Japanese, and single varieties being arranged in a graceful wreath with foliage. The medals are extremely tasteful productions highly creditable to the Society, and will undoubtedly be greatly valued by the fortunate recipients.

— THE WEATHER has suddenly become very cold and winterly in the south of England, north and north-east winds prevailing. In the neighbourhood of London on Saturday morning a temperature 8° below freezing point was registered. In Dorsetshire and neighbouring counties there have been storms of snow and hail, also in Yorkshire, Lincolnshire, and the north generally. Dahlias and other tender plants show the effects of the frost, and the summer beauty of flower gardens is now destroyed.

— A CORRESPONDENT writes:—"In your report of "SOME THOUGHTS AND SUGGESTIONS ON FRUIT AND FRUIT-GROWING" on pp. 266 and 267 of the last number of the Journal, it is stated that the most popular variety exhibited at the National Apple Congress, held in October, 1883, was APPLE LORD SUFFIELD, but by referring to your issue of December 18th, 1884, p. 544, it will be seen that, in point of fact, B'enheim Pippin was the most popular Apple, it being classed in both culinary and dessert sections, obtaining an aggregate of 115 marks, or fourteen in excess of those recorded in favour of Lord Suffield."

— IN reference to a note on the MIDDLE TEMPLE CHRYSANTHEMUMS in our last issue, we are requested to state that though an exhibition of them will not be held this year the stock of plants will be retained. They have all been cut down for the production of cuttings. It is not generally known that the Temple authorities do not purchase Chrysanthemums for the Gardens, but the gardeners obtain all the newer varieties at their own cost, and have the privilege of disposing of cuttings to recoup themselves for the outlay. It is unfortunate that a show is not to be held this season, as the plants before being cut down were finer than have been seen in the Gardens for years, and an imposing display would have been produced. It does not follow that a Chrysanthemum show will not be held another year in the Middle Temple Gardens.

— "I HAVE just seen the beautiful new SACCOLABIUM HEATHI," says an Orchid grower; "and it is certainly a valuable addition to the always admired species of this genus. It bears some resemblance to Saccolabium Blumei majus, the spikes being 12 to 18 inches long, on which the white flowers are crowded, forming a dense cylindrical spike of much beauty, and particularly useful for comparison with the dark-flowered species. S. Heathi, I consider, will become a favourite in all the leading Orchid collections."

— Mr. W. ROBERTS, The Gardens, Slynagwern Hall, Macbrynall

Monmouthshire, writes respecting the WEATHER IN WALES as follows—“Frost has made its appearance in this part of Wales rather earlier than usual. On the night of Saturday the 26th, the temperature registered 4° below freezing point. It has played sad havoc with outside flowers, such as single Dahlias, Sweet Peas, Tropæolums, and other flowers most valuable this time of the year. Iresines and Mesembryanthemums amongst the rest have suffered. It has been rather hard on vegetables such as Dwarf Beans, Scarlet Runners, &c.”

— A DINNER to celebrate the twenty-first anniversary of the EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY took place in Lyric Hall, Ealing, on Wednesday evening, 23rd inst. The officers and friends of the Society, and all classes of exhibitors at the Society's shows, to the number of 160, assembled. The Hon. Secretary, Mr. Richard Dean, presided, and was supported by the Right Hon. Spencer Walpole, the President of the Society. A very pleasing feature in the evening's entertainment was a presentation to Mr. Dean, which consisted of an illuminated address and a marble fourteen-day timepiece, presented by the gentlemen's gardeners and cottagers exhibiting at the Ealing, Acton, and Hanwell Horticultural Society.

— MR. C. ORCHARD, The Gardens, The Leigh, Coombe Warren, Kingston-on-Thames, writes:—“I have sent you a flower of *ARISTOLOCHIA GIGAS*, which is a curiosity, as are all the species of this genus. It is not often seen, as it is not very common. I saw the plant growing on the back wall of a greenhouse in the garden of a friend of mine at Claygate when on a visit to a few Chrysanthemum growers. It is a suitable plant for a lofty warm greenhouse or intermediate house on account of the fine foliage, and the curious shaped flowers is always an attraction to visitors.” The flower received is a fine one, and very distinctly veined with maroon on a pale yellow or creamy ground; it is one of the finest coloured forms we have seen, though much inferior to the remarkable *Aristolochia Goldieana* figured in this Journal, page 456, June 10th, 1880.

— MESSRS. COLLINS BROS. & GABRIEL, 39, Waterloo Road, S.E., send us a flower of *LILIUM SPECIOSUM RUBRUM CRUENTUM*, which they state is “a Japanese form. Several large beds of the variety at our nurseries, Hampton, are really grand, the plants being from 4 to 5½ feet in height against the Dutch variety only 2½ feet. Another fine variety is album *Krætzneri*, pure white, altogether superior to the ordinary Album, which has a dark red streak on back of petals.” The variety is a most handsome one, of an intensely rich crimson colour extending nearly to the tips of the petals, which have a narrow margin of white, and a green line in the centre. The white margin brings the rich colour of the petals into splendid relief, and in company with the white variety named it must have a beautiful effect.

— “CAN any of your readers give me any information about *MIGNONETTE MACHET*?” writes a correspondent. “I have been told that a very fine variety is grown under this name on the continent, and that it has been introduced this year to England. It is described as of a strong floriferous habit, with tall compact spikes of extremely fragrant flowers, superior to any other variety yet grown. This is such high praise that I am very doubtful as to its accuracy, especially as we have so many fine strains now.”

— REFERRING to the APPLE CROP IN AMERICA, a Connecticut paper observes—“Apples have never been known to be more plentiful in this State, though here and there the crop has been blighted by insects. A ride in any direction will disclose tree after tree laden with Apples so that the limbs fairly bend beneath their weight, in some cases to the point of breaking. Even the miserable, scraggy, gnarly trees growing by the roadside have the fruit strung upon their branches as thickly as Onions suspended from a string in a country store. Under the circumstances it is likely that there are more Apples than can or will be consumed by the market, and as other States share this abundance with Connecticut, it is presumable that thousands of bushels will find their way into cider mills.”

— A MEETING of the West Wycombe Horticultural Society was recently held to make a PRESENTATION TO MR. G. T. MILES, gardener to Lord Carrington, Wycombe Abbey, in recognition of the services he has rendered to the Society as Judge during fourteen years. A handsome Chippendale cabinet of local manufacture was selected as a fitting object, and this was presented to Mr. Miles by Lady Dashford in complimentary terms, to which the recipient suitably replied. A complimentary dinner

was subsequently held, at which sixty gentlemen were present, the Rev. H. T. Young presiding.

— THE twenty-second Exhibition of the BRISTOL CHRYSANTHEMUM AND SPRING SHOW SOCIETY will be held in the Victoria Rooms, Queen's Road, Clifton, on Wednesday and Thursday, November 18th and 19th. Sixty-two classes are enumerated in the schedule for Chrysanthemums, miscellaneous plants, cut blooms, and fruit. A silver cup, value four guineas, is offered for six Chrysanthemums in pots; the National Chrysanthemum Society's silver medal, and the Royal Horticultural Society's Knightian bronze medal are also included, and numerous prizes are offered by local friends of the Society. The Secretary is Mr. Alfred Polkenhorn, 96, Egerton Road, Bishopston, Bristol.

— AROUND the central beds in the house devoted to succulent plants at Kew a BORDER OF *STREPTOCARPUS* was planted last year and has attracted much attention this season. The most noticeable has been the lilac purple flowered *S. Rexi biflorus*, but groups of the small but profuse white *S. pauciflorus* and the free lilac-flowered hybrid between that and *S. multiflorus* have also been greatly admired. Another remarkable species which is unnamed, and presumably has not yet flowered, is one that is said to grow at an elevation of 3 to 6,000 feet in the Transvaal. This produces a single leaf, which, when fully developed, is 6 to 9 inches broad and 12 to 15 inches long, very prominently veined. If the flowers are as distinct and striking as the leaves it will be an important addition to the genus. The border devoted to these plants is only about a foot wide and consists chiefly of peat, but it is astonishing what a number of flowers have been produced, and how much it has improved the appearance of the house.

— IN the same house *CEREUS NAPOLEONIS* is bearing a number of its handsome fruits, which are globular in form, 2 inches in diameter, and of an exceedingly rich crimson colour. Of several species of *Cereus* which produce ornamental fruits this is one of the best. *Cereus triangularis*, the Strawberry Pear, has had several of its enormous flowers, and *Pilocereus latefrons* has been bearing its white or yellowish flowers freely.

— THE SOUTHBEND-ON-SEA CHRYSANTHEMUM SOCIETY will hold their first Exhibition on November 10th, this year, in the Public Hall, Southend. Twenty-six classes are provided, for Chrysanthemums in pots, cut blooms, miscellaneous plants and fruits, the prizes being mostly of moderate amount. The Hon. Sec. is Mr. J. C. Johnstone, Creevelea House, Southend.

— THERE were recently several pretty and useful ORCHIDS IN FLOWER AT KEW, though this is not the best season for such plants, but the condition of the Orchids in this establishment seems to be steadily improving, and in the warm house the appearance of the side stages is much better now there is a carpeting of *Selaginella* and *Panicum*. The only objection to this is that it forms a harbour for insects, slugs, and other pests, but with care and watchfulness on the part of the cultivator such evils can be avoided, and anything is preferable to the bare stages and shelves too often seen in such houses. The handsome *Oncidium varicosum* had a grand panicle of its large yellow flowers, and near it also in the cool house was a plant of *Oncidium incurvum* bearing three panicles, each 3 to 4 feet long, with numerous small white and purple flowers. *Stenoglottis fimbriata* is a curious Orchid, with purple-spotted leaves and rosy purple flowers, the lip in three narrow segments. *Zygopetalum Wendlandi* is a good distinct form with white flowers, the lip tinged with purple. *Satyrium Wightianum* is a member of an interesting genus of terrestrial Orchids far too seldom seen in gardens; this is a very pleasing species with bright rosy flowers in a close spike. *Eria stellata* has white flowers in a spike 8 or 9 inches long, but is chiefly remarkable for its delicious fragrance. A plant of *Saccolabium Blumei majus* had four handsome spikes of highly coloured flowers, and *Dendrobium formosum giganteum* had unusually large flowers 4½ inches in diameter, and eight in a spike.

— MR. W. BOTTING HEMSLEY states in *Nature* that the FORSTER HERBARIUM, a portion of the collections of Cook's second voyage, has been acquired by exchange from the Liverpool Corporation for the Kew Herbarium, and it will be incorporated in the general collection. Sir Joseph Banks and Dr. Solander accompanied Capt. Cook on his first voyage round the world; John Reinhold Forster and George Forster, father and son, were the botanists of the second voyage (1772-75), and Mr. Anderson, the surgeon of the expedition, collected a little on the

third voyage. From a statement in Sparmann's "Travels in South Africa," it seems that Forster the elder undertook the duties of naturalist to the expedition for the sum of £4000, and he took his son with him, then only seventeen years old, as an assistant. On arriving at the Cape of Good Hope they fell in with Sparmann, who at the instance and expense of Forster, was added to the scientific staff, and continued with them until the return to the Cape in 1775. Considerable collections of plants were made in New Zealand, many parts of Polynesia, and the extreme south of America, and smaller collections in some of the Atlantic Islands, including St. Helena, Cape Verd Islands, and Canaries. The collection now acquired for Kew is excellently preserved, and the plants mostly named and localised. It comprises altogether 1359 species, 785 of which were collected on the voyage with Cook, and the rest from various parts of the world. Roughly, there are 187 species from Polynesia, 119 from New Zealand, twenty-one from the extreme south of America, twenty-three from the Atlantic Islands, including all those described by Forster from St. Helena, and nine from Australia. Besides the foregoing, which are all phanerogams, there are thirty-six Ferns.

— AN American paper gives the following upon SUNFLOWERS AS FUEL. A correspondent having tried "turf," coal wood, and Sunflowers has settled upon the last named as the cheapest and best for treeless Dakota. He says: "I grow one acre of them every year, and have plenty of fuel for one stove the whole year round, and use some in another stove besides. I plant them in hills the same as corn (only three seeds to the hill), and cultivate same as corn. I cut them when the leader or top flower is ripe, and let them lay on the ground top for three days; in that time I cut off all the seed-heads, which are put into an open shed with a floor in it, the same as a corn-crib; the stalks are then hauled home and packed in a common shed with a good roof on. When cut in the right time the stalks when dry are as hard as oak, and make a good hot fire, while the seed-heads with seeds in make a better fire than the best hard coal. The seed being very rich in oil it will warm better and burn longer, bushel for bushel, than hard coal. The Sunflower is very hard on land. The piece of ground selected to plant on should be highly enriched with manures. In the great steppes (prairie region in the interior of Russia and in Tartary), where the winters are more severe than here in Dakota, the Sunflowers are, and have been for centuries past, the only kind of fuel used."

— A CORRESPONDENT of the *Tropical Agriculturist* thus refers to WATERCRESS IN CEYLON:—"In Moon's time—1824—the common Watercress (*Nasturtium officinale*, L.) was pretty well naturalised in Ceylon, and since then nearly every stream running through the estates in the Kandyan country has the Watercress growing in it, the plant being known to the Sinhalese as kakkutu pala. In reference to the idea of natural selection, we some time ago alluded to the facts recorded by Sir J. Hooker, that the Watercress introduced into New Zealand found such a congenial climate there that it grew to a length of 12 feet and 1 inch in diameter, and it cost Government £300 per annum to keep the mouth of one of the rivers clear of this introduction to enable the stream to be navigated. A correspondent who took a stroll on the banks of the Dambagastalawaoya from Cymru as far as Elgin a few days ago, informs us that seeing a dense mass of green vegetation on the other side of the river, covering the banks up to the level ground on the top, and not recognising it, he got a handful of it picked by one of the men in the lines close by, when he found it was a bed of Watercress, one of the top bits of which measured upwards of 3 feet in length and one-third of an inch in diameter, and he believes that entire plants in that bed measure 6 feet and half an inch, so that we can grow Watercress in Ceylon one-half the size attained in New Zealand!"

— THE sixth annual CRYPTOGAMIC AND BOTANICAL MEETING of the ESSEX FIELD CLUB will be held as previously announced on Friday and Saturday, October 2nd and 3rd, 1885, in the northern section of Epping Forest (Epping Lower Forest, High Beach, Monk Woods, Chingford, Buckhurst Hill, &c.). The head quarters for the meeting will be "The Roebuck Hotel," Buckhurst Hill, Epping Forest, and the following botanists, among many others, have promised their aid as Referees and Directors at the meeting. *For Fungi*:—Dr. M. C. Cooke, M.A., F.L.S.; Rev. Canon Du Port, M.A.; Mr. James English; Dr. Spurrell, F.R.M.S., &c.; Worthington G. Smith, Esq., F.L.S., M.A.I.; Dr. H. T. Wharton, M.A., F.Z.S., &c.; Arthur Lister, Esq., J.P., F.L.S. *For Mosses, Lichens, Algae, and Phanerogams*:—Professor Boulger, F.L.S., F.G.S.; Rev. J. M. Crombie, M.A., F.L.S., F.G.S.; Dr. Braithwaite, F.L.S., F.R.M.S.;

Henry Groves, Esq.; Charles A. Wright, Esq., F.L.S., F.Z.S.; F. J. Hanbury, Esq., F.L.S.; E. M. Holmes, Esq., F.L.S.; David Houston, Esq., F.L.S.; F.R.M.S.; W. W. Reeves, Esq., F.R.M.S.; A. Vaughan Jennings, Esq. The management of the microscopical department will be in the hands of Frederick Oxley, Esq., F.R.M.S., assisted by Messrs. E. Letchford, F.R.M.S.; Charles Thomas, F.R.M.S., F.G.S., A. P. Wire; W. T. Christian, F.R.M.S., and many other members of the Club. An exhibition of specimens will be held in the large ball-room attached to the "Roebuck Inn," Buckhurst Hill. Exhibits of fresh and dried botanical specimens, microscopes, and microscopical objects, diagrams, drawings, &c., will be very welcome. The Exhibition will be confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. The Friday's assembly is intended to be a students' and collectors' day in the woods, the evening being devoted to the naming and arranging of specimens. Saturday morning and early afternoon will be similarly occupied, and Saturday evening's meeting will be of the nature of a *conversazione*. Ample time will thus be afforded for careful examination of the specimens by the visitors present, and all possible facilities will be given to exhibitors. The members of the party on Saturday are requested to assemble at four o'clock at the "Roebuck," where the customary Club tea will be served at five o'clock; after which an ordinary meeting of the Club will be held solely for the proposal and election of members. The following papers will be read:—"The Uses of Fungi," by Dr. H. T. Wharton, M.A., F.Z.S.; "Some Botanical Mares-nests: chiefly Fungological," by Worthington G. Smith, Esq., F.L.S., M.A.I., &c. A series of large diagrams, illustrating the fungoid diseases of plants, being original drawings by Mr. Worthington Smith, have been most obligingly lent for exhibition by Messrs. Edward Webb & Sons, seed merchants, Stourbridge.

STEPHANOTIS AND GARDENIAS.

WE are all accustomed to hear these two plants praised so much that it would be something new to hear of something against them, but considered in some ways I think there might be more said in the latter way than the former. The pure colour and fragrance of both may be thought pleasing, but the fragrance of the Gardenia especially is so strong that not one person in a dozen can really enjoy it. The stems, particularly of the Stephanotis, are so short, that unless for wreath or cross-making they have to be wired before they can be used, and then there is nothing uncommonly attractive about them when mixed with other flowers. The flowers, however, may be good enough, and if they cannot be disparaged, what about the plants? It would be absolutely impossible to find two equal to them for harbouring insects, such as mealy bug, and I am of opinion that, considering the time it takes to keep them clean, in the majority of cases it would be profitable to be without them. We may clean the plants as thoroughly as possible to-day, and in a few weeks' time they are again smothered with mealy bug and other pests. Where men can be kept to do little else but sponge the plants may be fairly clean always, but in under-handed places and amateurs' houses they are a perpetual nuisance. I have heard the latter repeatedly say that they were never troubled to any extent with mealy bug until they bought in a Stephanotis or a few Gardenias, when the whole of their plants were soon infested. This should be well considered by all before introducing these two plants, and if no other place can be found for them than in a house with other plants or fruits, it would be much better to do without them. There are plenty of other flowers which are just as pretty and sweet, which require no more space, and certainly much less attention, that might take their place. I have thrown our Gardenias away, as they harboured so many insects; their fragrance was not appreciated, and by the time they reached London their pure white petals had become almost black. The *Encharis amazonica*, which now fills their place, is much more appreciated. The Stephanotis may share the fate of the Gardenias, and if I had my way I would not grow either of them in any house where other plants or fruits were being cultivated.—J. MUIR.

GARDENS NORTH AND SOUTH.

I WAS once travelling across the German Ocean with an American tourist who had left his "great country" to see the sights of little Europe, and what appeared to astonish him the most was the changes he was constantly experiencing, in what was to him a very short journey. "As to the weather," he remarked, "you never know what is coming in a day's run; and as if that is not enough to make one uncomfortable, you just go across a ditch like this, and your tongue is of no use except for 'liquoring.' I have had all sorts of weathers in a fortnight, and found three languages in 500 miles; but in my country, sir, we can calculate almost exactly about the weather, and can travel 3000 miles without having our baggage searched, and with one lingo—things seem badly managed in this old country." The Customs' regulations had irritated, and a slight attack of *mal de mer* upset my loquacious companion; but he was, nevertheless, right in the main. The changes are great over a

limited area in Europe, and especially is the character of the weather widely different in different and not far distant parts of our sea-girt isle; still we are so accustomed to them, and to act accordingly, as not to seriously complain of the "management."

The gardening press and London newspapers have given the world to understand how exceptionally hot and dry the season has been this year in England, and how difficult has been the task of farmers and gardeners in keeping their crops alive. "Scarcity of vegetation" has been the stereotyped cry. It has indeed been scarce enough in the south, but the "cry" must have had a peculiar sound to some northerners who have often had more rain than they wanted, and instead of being roasted by heat, they could tell of luxuriant, yet tender crops, being cut by frost in summer, and this within a radius of 200 miles.

A short time ago I had the opportunity of observing the great difference in the appearance of fields and gardens in the south with those in the north-midland part of the country. The change was very striking. In consequence of the extreme heat and protracted drought lawns and pastures were brown for miles in the south. Fruits could not swell in any satisfactory manner, vegetables could not be planted for weeks, flowers faded rapidly, trees were defoliated prematurely, and water vanished from streams and wells. It has truly been a trying and exhausting season to all engaged in the cultivation of the soil in the south of England; but a few hours' journey northwards and a change welcome and refreshing was experienced. Trees clothed with rich foliage, fields green, fruit fine as well as plentiful, vegetables abundant, flower beds full, water flowing freely in the streams, and—how different this from the south—Potatoes, Kidney Beans, Heliotropes, and Vegetable Marrows killed by frost in August.

I was not on a gardening tour, but rather kept out of gardens as much as possible, and left my note-book at home; but being in Bath at the time of the flower show the opportunity of visiting two "good men and true"—Mr. William Taylor and Mr. William Iggulden—was too great to be resisted, pouring rain preventing a call at Longleat by the way, and the kind invitation of Mr. Pratt could not be accepted.

Mr. Taylor's work in the gardens of Mr. Alderman Chaffin has been recently alluded to by "W. I.," and criticised by "J. S. W." Both those correspondents had justification for their remarks, for Mr. Taylor's new start in Vine culture is strikingly satisfactory, but cutting down Vines to within 14 inches of the ground is not the "extension" system, and an explanation was needed and given. The Vines so cut down were propagated and planted late and had not time to ripen, hence they were cut down to where the wood was firm. They have now made splendid canes and developed foliage of great persistency, with bold brown huds in the axils of the leaves. The Vines appear to have been stopped when they attained a length of some 10 feet, and the laterals pinched to one or two leaves as in the preparation of Vines grown in pots. That length of cane is ripened throughout, and only a foot or less will be cut off in pruning—just the portion where the main huds have elongated by the pressure of the sap. Many persons would cut more than half the growth away in the belief that a length of "4 feet is enough to leave for one year." Some others would "fetch them down" much lower, with the object of producing canes of startling dimensions next year, and in the hope of having "grand Grapes" the year after. Mr. Taylor is one of those gardeners who aim at producing sturdy canes well stored with nutrient matter, not to be cut away, but utilised; his method is not limitless, but what may be termed a modified form of the so-called extension system, and he is satisfied with the results, and well he may be, as the Longleat Vines were grown on that principle, and Mr. Pratt has had a triumphant season this year. His predecessor has also done excellently in his present charge, for he, too, has achieved a triumph in growing Muscats in pots, and on exactly the same method of pruning he is growing the permanent Vines planted out.

A word as to these splendid Muscats. I have had the advantage of seeing the best fruiting Vines in pots at the metropolitan and many provincial shows, but never saw any to equal Mr. Chaffin's examples. Mr. Bardney will be glad to hear that they have been grown in the manner that he has practised so successfully, and which a few years ago he first advocated so strongly in this Journal. They were raised from eyes in March, 1884, grown well during the season, and shifted into 18-inch pots last spring, when the growths were an inch or two long. With sound judgment in watering, that being of vital import, much finer Grapes are produced on Vines so repotted than if left to fruit in the pots in which they were grown, no matter how they may be top-dressed and supported with liquid manure. Repotted and well attended to, the bunches and berries are as fine as on Vines in borders, at least that was so in the case of the Black Hamburghs grown by Mr. Bardney at Norris Green, while finer Muscats than those cut from the Vines under notice have seldom been seen. I should scarcely venture to say so much in the absence of corroboratory evidence. This was afforded by Mr. Coleman of Eastnor Castle, who was one of the fruit judges at Bath, for he publicly stated at the luncheon that the best Muscats in the show were undoubtedly those in Mr. Chaffin's collection of Grapes, and if they had been placed in the Muscat class they would have defeated the fine examples from Longleat, which the second best pair from the pot Vines pressed closely. The best bunches were about 4 lbs. in weight, of perfect shape, full, and the berries superbly finished, "looking," as a critical examiner remarked, "as if a light was shining through them." They were not so large as the Longleat berries, but their superior quality was apparent, and good judges like Messrs. Coleman and Challis are not carried away by bulk, but give, as all judges ought, due weight to quality and "finish."

Nor were the Vines exhausted by the crop; on the contrary, it would

be difficult to find any Vines that have made stronger and better growth than these wonderful potted examples, and they will be fruited again next year. This year's wood of the extension cane I have no doubt is 3 inches in circumference at the present time, and the lower portion of the rod 4 inches. "Rooted through the pots perhaps," some may imagine. No, that is impossible, for the pots were stood over the hot-water pipes all the season. But how do I know that the exhibited Grapes that won such a high encomium as that referred to were produced by the Vines under notice? Doubts were expressed at the Bath Show as to their having been cut from pot Vines, and I may therefore as well set the matter at rest. As each bunch was cut by Mr. Taylor it was handed to me and passed over to Mr. Chaffin, who affixed them on the stands, and the manner in which they were staged showed that he was an expert at this work, as not a speck of bloom was removed in the process. I hope to see similarly fine bunches and well-finished fruit on the same Vines next year, but with larger berries, and then they will "take some beating."

As was stated in the report of the Bath Show, all the other Grapes exhibited from the same garden were cut from Vines from which all the roots had been chopped off to within 6 feet of the stems two years ago for the production of fresh fibres in fresh soil. The crop on these Vines is an excellent one, and the great number of bunches of Madresfield Court must be searched in vain for a cracked berry, yet all the roots are outside, but there is no damp air inside, and the grower is evidently of opinion that moisture in the atmosphere will cause tender-skinned Grapes to split.

Mr. Chaffin's patented system of glazing is eminently worthy of note. It is thoroughly distinct—durable, efficient, good in appearance, and, in the end, economical, as it obviates the necessity of painting. Strips of felt are attached to the bars on which the glass rests; others are attached to stout strips of galvanised iron an inch wide, which are screwed down on the glass, making it perfectly secure. The squares are 3 feet by 13 inches, and so arranged that the glass does not quite touch at the laps, so that there is a filtering of air through the roof, condensed moisture can find its way outside, averting "drip," and if a square is accidentally broken it can be removed by drawing two screws and another square put in in a minute. The plan is extremely simple, and its durability has been tested in the structures that have been erected for years; indeed, if the system had not been thoroughly good it would not have been adopted in the noble structure last erected, the owner of which is very practical and very earnest in promoting high-class Grape culture. He has been a leading public man in Bath for years, having been thrice mayor of the city, and the esteem in which he is held is embodied in valuable presentations, including a splendid oil painting of himself in his robes of office. His garden is his delight; his desire to see his skilful assistant prosper. The readers of the Journal will be glad to hear that there is good prospect of his doing so, and that he has so far nothing to regret in relinquishing his charge at Longleat.

Now for a few moments' reflection on a few pleasant hours spent with Mr. Iggulden at Marston. As has been previously stated, Lord Cork's residence is beautifully situated. The trees are grand, which means the soil is good, so good that the garden will grow anything without trenching, and better without it than with it on its substratum of clay, for the crops on a part that had been trenched were inferior to those on land that had been dug a spade deep. The manager of this garden has been taken to task for his denunciations of trenching, but so far from his practice being wrong, it would not be easy to find a better supply of excellent vegetables. There was, as he stated some time ago, "plenty of everything," and there is no fear that the abundance will not be maintained. A hot summer exactly suits such land, as the sun is continually drawing up moisture from the earth stores for the benefit of the crops; but on a dry subsoil there is nothing to draw, and the moisture from a foot of cultivated soil is necessarily sooner exhausted than from a bulk twice that depth, so that the peculiar character of the land must be taken into consideration in determining whether it can be beneficially trenched or not. There is danger in overtrenching some soils, whereas in others deep cultivation is essential for productive crops. Mr. Taylor found trenching worse than useless at Longleat, and it is precisely the same at Marston.

This garden has been wonderfully improved during the past four years. The Vines at the commencement of that period were what many persons would have regarded as beyond renovation, but by chopping off old roots and filling new soil with new, reducing the spurs on the old and training in new rods, Grapes are now produced fit for any nobleman's table, and some of the bunches, though not large, have secured many prizes in the best competition, the size, finish, and superior quality of the berries having, as they deserved, received the recognition of competent judges. The Muscats were "too far gone" to yield to the same treatment, and new Vines will have to be planted before first-class fruit is produced. Peach trees that I saw on a previous visit almost dead with the "yellows" have been restored, and now yield fine fruit abundantly. The evil was at the roots, and fresh roots in fresh soil have effected the cure. As the present is the best time for action in the renovation of exhausted Vines and enfeebled trees, an allusion to what has been accomplished is not unseasonable.

There is a fine wall of cordon Pears at Marston. These had a very worn-out appearance a few years ago, the leaves being yellow and fruit small. By removing some of the old soil from the base of the wall, adding fresh and mulching heavily with manure, the trees have been invigorated, the foliage is green and fruit good. It is dry exhausted surface soil that drives the roots of trees downwards into wet, cold, and unfertile subsoil, and the degeneration of the trees follows. The crop of Apples was good on bush trees, yet so large that ladders are needed for gathering the fruit.

Some time ago a statement of Apples bearing on "last year's wood" was questioned and a discussion ensued thereon. The best crop and finest

so well matured, and fruit buds do not form as a rule till the second year. That is perhaps the explanation of the difference of opinion that has been



FIG. 47.—APPLES ON LAST YEAR'S WOOD.

fruit are not unfrequently seen on wood of the previous year's growth in the south of England. In cold, high northerly districts the wood is not

expressed on that subject. Some varieties, it may be further remarked, bear more freely on the young wood than others do. The example figured

represents in a reduced form the crop of Hawthornden on wood produced last year at Marston, the branches being quite bent down with the weight of their load. Where the growths are fully exposed to the sun and air throughout the season fruit buds form freely enough on trees in favourable positions. Thinning early in summer is far more important than pruning in winter in the production of fruit buds; and if cultivators were to thin more and shorten the shoots less there would be more fruit on many trees.

Plants under glass are in excellent condition throughout. A very simple method of striking tuberous Begonia cuttings may be noted. A few inches of light sandy soil is spread on the north side of a wall, and the cuttings dibbed in it in the summer. Kept moist they root quickly, and form good tubers by the autumn. Some hundreds of plants were rooted in August and growing freely. A notable feature of the conservatory are Zonal Pelargoniums as wall-covering plants, Guillon Mangilli, Wonderful, and some others being ablaze with flowers from base to summit, and it is a question if any other plants could cover the space so effectively. On the outside of the mansion are some grand old Magnolias which produce their handsome flowers freely; and on the lawn is one of the finest Golden Wellingtonias in the country, the tasselled drooping sprays resembling at a distance plumes of yellow Celosias. Lord Cork takes great pride in his garden, and it is certain he would have a difficulty in finding a better all-round gardener than his present one, who in turn is well assisted by his foreman, Mr. Coombe, who will make a good gardener for someone by-and-by. A little gardening in the north will be referred to in a future issue.—J. W.

AMERICAN BLACKBERRIES.

THOUGH Mr. J. Muir should "more than once" have "decried" the Kittatiny and other American Blackberries, yet somehow they still live. No doubt after being so repeatedly denounced it must be very annoying to think that this "decried" fruit should find supporters who, strange though it may seem, still like them and still will have them, yet it is so. It is not to be expected that the Editor would like us to "air" our introductions in any other than in the advertising columns; but, as the introducers into this country of the Wilson Junior Blackberry, we would like to say that, if acceptable to Mr. Muir, we shall next year be very pleased to send to him a dish of this monstrous and, as we claim, greatly superior Blackberry. As Wilson Junior was not introduced until after 1884 (which was the year Mr. Muir says he planted his) he, of course, has not grown this magnificent variety, and we are assured that when he does even he will change his opinion.

Amongst many other items as to the first-class qualities possessed by American Blackberries, we beg leave to quote verbatim a passage from what we think all practical men will consider a most sensible lecture. We are alluding to "Some Thoughts and Suggestions on Fruit and Fruit-growing," delivered at Wrexham, September 11th, before the North Wales and Border Counties Pomological Society, by Mr. E. J. Baillie, F.L.S., and which, as it happens, appears also in that week's issue (September 24th) of the *Journal of Horticulture*, page 266.

In commenting upon the American Blackberries this gentleman concludes as follows:—"The Blackberry presents another feature which should commend it. As a decorative plant for old walls or old fences it has few equals, and whilst pleasing the eye for the greater part of the year, as it is always interesting and attractive, from its first early leafage in spring to its rich autumn foliage, which is not impaired by ordinary conditions more or less affecting other ornamental plants, and the leaves do not fall, as a rule, until quite late in the season. The varieties of this fruit best adapted for cultivation are the Wilson Junior, Dorchester, Lawton, and Parsley-leaved."—VICCARS COLLYER & Co., Leicester.

CHRYSANTHEMUM NOTES.

THE BEST METHOD OF STAGING CHRYSANTHEMUMS.—Two interesting classes are provided in the National Chrysanthemum Society's schedule of the Show to be held on November 11th and 12th at the Royal Aquarium, Westminster—namely, for "the best method of staging Chrysanthemum blooms for exhibition without cups, and with or without boards." One is for twelve incurved and the other for the same number of Japanese, a prize of two guineas being offered in each, and it is especially provided that the prizes may be withheld "unless a method of general practical value be submitted." We have had some inquiries respecting these classes and therefore give the full particulars, as there are probably others who are interested in the matter. Unquestionably it would be a great advantage if a less formal method of showing the blooms could be adopted than is at present practised, or if it could only be applied to a few classes it would serve to diversify the effect.

CHRYSANTHEMUMS AT CAMBERWELL.—Active preparation is being made at Mr. Davis's nursery, Camberwell, for his annual exhibition of Chrysanthemums, there being about 2000 specimen plants of the best varieties. Some of these are already being placed under glass in the handsome show house which is now devoted to them, and they all look as promising as could be wished. The foliage is vigorous and the growth strong, but not too

luxuriant, and the buds look clean and free. The early-flowering varieties are still beautiful, and it is impossible to over estimate their value at this season when flowers are becoming scarce. It is unnecessary to repeat the names of the varieties as they have recently been described in the *Journal*, but a word of praise is due to Madame C. Desgranges and its beautiful yellow companion, G. Wernig. Both are floriferous varieties and come grandly under glass, the blooms being larger and purer in colour than when out of doors. Indeed, I am told one grower has been selling blooms of Madame Desgranges for some weeks past at 3s. per dozen, and that he has cut as many as twenty dozen at one time from a small house.

Numbers of new varieties are under trial and no doubt some will be found meritorious, but a rigorous system of selection is being adopted, and all that are not distinct will be destroyed. The early-flowering bronze-coloured Mons. Pynaert Van Geert is proving a variety of sterling value, being extremely free, of a pleasing hue and pretty form. Bouquet National is a good companion for it, of a rosy crimson tint and equally free.

MANURE FOR CHRYSANTHEMUMS.—Various practices are recommended by different growers in the supply of manure, either liquid or otherwise, to Chrysanthemums, and with care no doubt they can all be made to produce similar results. One of the simplest and most efficacious stimulants is that employed by Mr. Davis with great advantage. This is sulphate of ammonia, which is used for weak-growing plants or when the applications are commenced at the rate of half an ounce to the gallon of water, increasing the strength of the liquid to 1 oz. to the gallon. It readily dissolves and is quick in its effects upon the plants. Clay's Fertiliser is also useful for these plants, and is strongly recommended by many.—A.

LATE CHRYSANTHEMUMS.—I see by the schedule of the National Society that an exhibition is to be held in the middle of January for late Chrysanthemums, and no doubt it will prove very interesting. It will enable the public to see that the Chrysanthemum season can be extended over at least six months of the year, and it will also show what varieties are the best suited for late flowering. Might I suggest that a few prizes for late Grapes offered at this Show would add greatly to its usefulness and exactly meet the wishes of many gardeners?—A SURREY GARDENER.

TOMATOES FROM CUTTINGS.

I CAN hardly agree with "Kitchen Gardener" on taking cuttings from Tomatoes for early use in spring and in the autumn. As he does not state which cuttings we ought to take, some might be misled. I have cut ripe Tomatoes in March, and I hope my few hints will be useful to others.

In the first place I sow seed of the Old Red the first week in September, place the pots in a warm house until the seedlings appear, then remove them into a cool house, where they will get plenty of light and air. As soon as they are ready I pot them into small 60's, keeping them shaded till they get hold of the fresh soil. At the end of the month they will be ready for large 60's. In this size I keep them until the first week of the new year, when the plants will be about 9 inches high. And now for the cuttings. Where am I to get them from unless I cut the plants down? This I do, taking care to leave about three eyes on the plant, and these come in for succession. I take the head off the plants for my cuttings, because my experience as a Tomato grower has shown me that the best fruits were had from the leading growth. But this practice I only recommend where Tomatoes are grown in pots and where they are wanted early in the year.

The Tomatoes sent to you with this note are grown in boxes on the north side of my early vinery, which is a span-roof house, and are cut from my second plants this season, my early plants being over in June. These are grown in boxes in the open, and are brought into the vinery as soon as the old plants are cleared out.

My reason for writing this note on Tomatoes from cuttings is to point out which cutting ought to be taken to get early fruit. No Tomato pays me so well as the Old Red, for fancy sorts will not fetch any more in price, and where I get a pound of one of them I can cut six of the Old Red.—J. W. L.

[We have seldom if ever seen finer fruits than those sent by our correspondent.]

SEASONABLE HINTS ON FLORISTS' FLOWERS.

AFTER a very trying season it will now be necessary for all growers of florists' flowers to make ready for the coming winter, and to be prepared for all eventualities, as it is impossible to forecast, although the probability is that after two such mild winters it will be better to be prepared for a severe one.

AURICULAS.—Although I shall not myself move any collection into winter quarters just yet, many will in cooler latitudes be ready to move theirs. I do not think that I have had a larger per-centage of autumn-

blooming plants than usual, notwithstanding the hot and dry weather that we have experienced, although we are more subject to this than those who grow them in the cooler climate of the north of England, and I can quite understand how it is that Mr. Horner has a smaller per-centage of them than Mr. Douglas. I believe neither method of cultivation or time of repotting makes any difference, but just simply the climate in which they are grown. It will, however, now be necessary to carefully examine the pots, and see that after these heavy rains we have had the frames have been watertight and no plants are waterlogged, or the drainage have been disturbed, for of all the enemies to the successful culture of the *Auricula* none is so fatal as excessive wet, especially if the drainage have been disturbed. As after the summer the surface soil of the pots will probably have become caked, it will be well to stir it up with a blunt stick, and examine carefully the collar of the plant for woolly aphids, for although we have perhaps overrated the injury that this pest does to our plants it will be as well to get rid of it there. I found that although at repotting time there was hardly a trace of it on many plants, I have now got it on several of them; and although its injurious effects to the roots have been denied, yet all seem to think its room better than its company about the neck of the plant. Those who may have a desire to commence their cultivation, or add to their collections, have now a better opportunity of doing so, as I see that the collection of the late veteran grower, Mr. Alex. Meiklejohn, is in process of sale, and in it the crack sorts such as George Lightbody, Rainsham Hero, &c., are to be had for 5s., and older sorts at greatly reduced prices.

CARNATIONS AND PICOTÉES.—Notwithstanding the dry season I find that layers of these have rooted well. The time has now arrived to prepare for wintering them. They may either be potted singly in small pots or in pans, which is the most usual way—in 48's. The compost for this purpose should be the simplest possible—good loam, with an admixture of road grit or coarse gravel. To keep it open is the best, as the object is not so much to stimulate growth, but to keep them in a sound healthy condition during the winter months. Those who, like myself, grow them in heds will now be preparing to plant them out. It is easier to do so in the autumn than in the spring, and I have found that there are very few losses during the winter. I always keep a few in pots for the purpose of making up deficiencies. The heds should be 4 feet wide, and the plants placed at about a foot apart. When they are planted it is well to put a small stick to each, tying the plant loosely to it, so as to prevent its being loosened by the wind. For the same reasons they should be planted firmly in the soil. As I have before said, these instructions are not intended so much for exhibitors as for those who desire the enjoyment of the flowers in their own gardens. For exhibition purposes to grow them in pots is almost a necessity. A good garden soil which has been well cultivated previously is admirably suited for them.

DAHLIAS.—The first frost will destroy the beauty of the various sections into which the Dahlia is now divided; but although the foliage is destroyed it will not be necessary to immediately lift the roots. However, the operation cannot be much longer delayed. A dry day should be chosen for it, so as not to have too much earth adhering to the tubers. They should then be placed in an airy situation free from frost to dry for a time before storing.

GLADIOLI.—These, too, are now losing their beauty, although they are not so susceptible of frost as the Dahlia, and need not be lifted yet; indeed, it is better to defer that to the latter end of the month (October), but the beds should be carefully gone over, and when seed is not wanted the flowering stems should be cut off, for there is little doubt that the seeding process weakens the corms. Where any corms have gone wrong it is better to take them up at once.

PANSIES.—This has been a trying season, in the south of England at any rate, for these plants, the long drought having completely destroyed the plants, which no amount of watering seemed able to save. This no doubt is one of the reasons why the Pansy is not so popular as it used to be about London. I had last year a very pretty collection, but have been unable to save more than three or four kinds. Where they are grown in pots the plants will now be ready for potting off into thumbs, and after remaining close for a few days until they are rooted may then be transferred to a frame facing south at present. Should, however, the weather be warm and sunny it may be as well to leave them in a north aspect for a little while longer.

PINKS.—Rooted pipings from the propagating frames or heds may now be planted out into beds prepared for them. This is another of the old florists' flowers which has fallen on bad times as far as the south of England is concerned. Mr. Turner, indeed, occasionally lets us see a stand, but otherwise it is almost unknown in the south; in Scotland it is still cultivated with more or less of success. The beds should be prepared as for Picotées, but the plants do not require to be so far apart.—D., Deal.

SOME THOUGHTS AND SUGGESTIONS ON FRUIT AND FRUIT-GROWING.

[A Lecture delivered at Wrexham, Friday, September 11th, 1885, before the North Wales and Border Counties Pomological Society, by Mr. E. J. Baillie, F.L.S.]

(Continued from page 267.)

The different methods of cultivation have an important bearing, and it is both astonishing and amusing to find how doctors differ upon the points at issue. I read a most interesting account in one of the daily papers a few days ago of the surface system adopted with such success by Mr. Walter Kruse. He has carried on a very inter-

esting and instructive experiment in fruit farming during the past four years in the county of Kent, and the results have been so satisfactory that the system adopted may be considered, in the opinion of competent judges, to be worth the study of those interested in fruit-growing. Its peculiarity consists in this, that cultivation in all its forms is applied only to the surface of the ground. No digging is allowed. The garden hoe and the pruning knife are practically the only implements used on the farm. Not much work is found for the latter, as Mr. Walter Kruse, the originator of the system, and who at present stands alone in carrying it out, is of opinion that to get a large crop of fruit there must be plenty of wood for it to hang upon. The hoe, however, is freely employed to "tickle the ground," and the result seems to be that it "laughs into a harvest." The objection to digging is founded mainly on the injury which is commonly done to the roots of trees, especially at their extremities, where they are often torn and broken by the spade. As manure is only used as top-dressing, there is, of course, no necessity for digging in order to admit the fertilisers into the subsoil. The dressing is very rapidly absorbed, and consists to a great extent of phosphates in the form of bones crushed to quarter-inch size. The yearly expenditure for manure comes to from £10 to £13 per acre. By this superficial culture the roots are encouraged to keep near the surface, and take advantage of the upper and more nutritive soil; while, by the undisturbed formation of fine fibrous growths, innumerable feeders to the sustenance and health of the trees are produced. It has long been an axiom of fruit-growing in Kent that the roots of Cherry trees must not be interfered with, and in many old orchards a broad circle of green turf may be seen surrounding them, designed for the protection of the roots; but the curious and unintelligent part of the procedure is that the patch of grass only extends where the roots are thick and strong, and hardly liable to injury; while further out, where they are tender, the spud or the plough is used unmercifully. Mr. Kruse makes a great point of carefully protecting all this delicate growth. An advantage claimed for this system of surface culture is that, the soil being never broken up for more than an inch or so, evaporation is comparatively slight, and in dry seasons the reserve of moisture in the soil does not become easily exhausted.

Upon this question of cultivation there is an interesting pamphlet published by Pitman, of Paternoster Row, and issued by the Vegetarian Society, Manchester, the work of Mr. E. A. Kynaston, who writes under the title of "Head Gardener." This pamphlet is unique, and in every sense of the word original. Many practical growers will not accept his views; but whatever may be thought of the theories there advanced, his methods have, according to Mr. Kynaston's statements, invariably resulted in securing fruit in abundance and of excellent quality. The secret of the system is careful feeding. Mr. Kynaston maintains that trees subjected to the treatment he recommends are endowed with a constitution which enables them to resist the often disastrous late frosts which tell so seriously against trees not so strengthened. We have no time to pursue this question here. One remarkable fact I should like to mention with regard to Mr. Kynaston's method is this, the trees are not checked by removal as is ordinarily the case, but almost invariably come into immediate bearing. I quote from a letter which I received in June, 1884, as follows:—"June 19th, 1884. Dear Mr. Baillie,—I forward you by parcels post a sample of fruit gathered from trees that were growing in Messrs. F. and A. Dickson & Sons' nurseries at Chester as late as the middle of January last. Five Cherry trees were sent, and all are bearing well; and other fruit trees that were forwarded towards the end of January have mostly set their fruits, many of them with the abundance of old-established trees. . . . Many on reading this might say, 'Ah! but you must have had fine weather.' This, however, was not so, for the spring with us has been characterised by late frosts, cold nights generally, bitter east winds, and excessive drought. Now all this shows (1) what really good trees can be made to do when carefully planted and thoroughly cultivated; (2) that it is a great mistake to suppose that weather alone is responsible for the destruction of our fruit crops." Mr. Kynaston is an enthusiast in the matter of fruit cultivation, and his own little garden always gives evidence to the successful home application of his methods. It is at any rate evident that for the proper production of fruit we must have a careful cultivation, and I believe that were our fruit trees fed and tended carefully we should hear less of the climatic difficulties which terrify many and prevent a more rapid extension of the orchard of hardy fruits.

There were one or two other aspects upon which I wished to touch—i.e., storage of fruits, the decorative character of some kinds, shelter, and the planting of wastes such as hedgerows and railway embankments; but I feel I must have reached the limits of your patience, and will only ask you to bear with me whilst I briefly refer to one of the most important elements in the matter we have discussed this evening. I allude to the education of the people in relation to the dietetic value of fruits. At present they are regarded as luxuries, or as an addition to a meal that is essentially complete

without them. This ought not to be so. Fruit must be recognised as a staple article of diet before fruit-growing will claim its proper place in the national economy. I do not plead the claims of the Vegetarian Society, but I would strongly urge those who have opportunities for moulding the thought and practice of others to give some amount of study to the principles advocated and facts adduced by that Society. They constantly invite and urge the attention of all earnest patriots and politicians and of all holders and occupiers of land to the importance of the cultivation of fruit as an auxiliary food supply, and urge the planting of fruit trees in all gardens, hedgerows, and on waste lands as a suitable, profitable, productive, and healthful industry; and in these times of scarcity of food, diseases among cattle, and great national distress, especially commend to landed proprietors and public corporations, on the grounds of both utility and beauty, the systematic planting of fruit trees along railways, roadways, river ways, canal ways, and wherever practicable. It is to be hoped that fruit will be made so popular as to be found not only upon the silver salvers of the wealthy, but upon the everyday table of the middle classes and upon the plates of the poor.

But in conclusion, to return to the more immediate work in which you are engaged. I have asked myself the question what a local pomological society ought to do. Well—

1, It ought to make a kind of survey of its district, indicating upon a map and noting on its record the places where fruit is grown and the areas of such places.

2, It ought to have a reliable record of the kinds of fruits grown upon these farms and gardens, under what conditions, and with what results.

3, It ought to see that the horticultural papers and the standard gardening works are readily accessible to the public as far as this may be possible, say through the medium of the free library or otherwise.

4, It ought to keep a kind of meteorological journal, giving reliable data of the weather and climatic changes, so that observations could be made and facts of so much importance reliably registered.

5, It ought to encourage fruit culture through the medium of local exhibitions, offering prizes, not in money, but in fruit trees of good kinds, for the best exhibits.

6, It ought to undertake the naming and classification of fruits submitted to its officers by growers.

7, It ought to educate the cottage population and families of the poor in the matter of food and household thrift by means of leaflets, pamphlets, and lectures, pointing out how fruit may enter much more generally into daily use as an article of absolute dietetic value.

8, It ought to experiment as to different modes of treatment and methods of cultivation, carefully noting and recording results.

9, It ought to endeavour to establish centres of sale. This should be one of the most important and helpful of its duties, as under existing circumstances fruit is carelessly gathered and picked up in the country districts at a price which cannot be remunerative, whilst it is sold in the large towns at prices placing it beyond the reach and free use of the poor.

10, All these facts ought to be carefully embodied in periodical reports and journals, to be circulated amongst the members of the society, and the book would thereby become a valuable work of reference and guidance for all interested in pomology.

I hope your Society will recognise the importance of its work, the extent of its mission. The extension of these principles is the extension of what Bacon has designated "the purest of human pleasures;" whilst the diffusion of these principles among the poorer classes will be adding materially to the most important of the benefits of a rightly directed occupation. There are few who will not readily engage in the work when convinced of the comfort, health, and gains derivable from it. There is in the principles we have been advocating everything that tends to endear a man to his home and make him patriotic in the best sense of that much-misunderstood term. Therefore the success of every such Society as yours means direct gain not only to the social but to the national economy.

[The lecture was illustrated by specimens of fruits of most desirable kinds for the district, and by a series of beautifully executed drawings of Pears and Apples. The Chairman, Thomas Chilton, Esq., of The Elms, Gresford, complimented the lecturer, and gave some most interesting particulars bearing upon the subject before them; and remarks were afterwards made by several gentlemen, including Mr. T. Bennion, Acton, Mr. Humphries, Mr. G. Cromar, Mr. Jones, Secretary of the Society, and others. The usual votes of thanks brought a most interesting meeting to a close.]

NOTES ON PLANTING SHRUBS.

ALTHOUGH, in the general routine of gardening operations, each season has its peculiar duties, which, if not done then, often tell for the

remainder of the year, or rather until the return of the same period again, yet there are periods in which certain operations seem to call for more special attention than others, as those relating to the spring and early summer. The progress then making renders it imperative for good cultivation that every seed or plant then requisite to commit to the earth should be done without delay, in order to meet the requirements of after-times; and a little more than the usual energy displayed at that time will, in most instances, be rewarded with corresponding success, and more after leisure. Now, though it would be wrong to say that the present season, September, has not important duties of its own to be performed, and these increased, too, by the wet weather we have had, and may still have, yet, when circumstances render any extensive outdoor alteration necessary, this is not a bad season to get on with it; for the most of our shrubs, especially the evergreen ones, move and plant with the best chance of success just now; and when we consider the many advantages which early operations have over late ones, it behoves all those contemplating such change to be on the alert, in order to avail themselves of all the advantages fine weather commands, which is certainly more likely to occur in this month than the two succeeding ones.

Wherever, therefore, new shrubberies are to be made, old ones altered or remodelled, or solitary specimens taken up and replanted, the present is certainly better than a later season.

Turf may also be included in the same category. Flower beds, however, that are perhaps under a heavy crop of plants, still ornamental, must be left alone for some time, unless under special care, when they might be sacrificed to the sweeping effects of a change; however, the arrangement of them, and the remodelling of a flower garden, whether on the geometric or desultory plan, I willingly leave to others; suffice it to say that the more formidable work of making new walks, roads, shrubberies, or of levelling and laying down turf, cannot be done at a more suitable time than the autumn; besides which, the commencement of such things sufficiently early in the season gives greater hopes of their being finished in time, should adverse weather or other circumstances intervene; but it certainly is advisable to get all the planting of shrubs and trees done as early as possible, in order to gain all the benefits which the autumn affords to their attaining fresh roots; and being in other respects established in their proper quarter before winter sets in. In addition to this, turf that is laid down now will unite and grow before winter prevents it, and present that uniform appearance so much desired. Deciduous trees had, however, better remain until their foliage be a little more ripe; it is not necessary that it should all have fallen off, but sufficiently matured to drop off without force; but the whole class of hardy evergreen shrubs might be planted now with a better prospect of their doing well than if the operation was done at any other time, other things being the same.

Prior to the commencement of any large alteration it would be advisable to consider well the various points on which such alterations bear, as it would be gross mismanagement to bury all the good soil in a large hole or hollow place merely for the purpose of rendering a certain spot of ground level, or otherwise agreeable to the eye; such an alteration might suit the purposes of a road surveyor or builder, but not the cultivator of plants. This point may therefore be borne in mind at the beginning, so that by arranging the trenching, all the good soil be retained at the top, and if it be in turf or pasture some of the bulk might be preserved for any purpose it may be wanted for, whether that be to relay again or decay for use on the potting bench. Of course its removal is so much loss to the ground it came from, and it need not be done in those places where it is wanted for the benefit of the plants, &c., intended to be taken there. However, these matters must be determined by the nature of each respective case; only one thing we would strongly urge, that when it is removed for any purpose its place ought to be supplied by something else that is good added to the ground, for if the well-being of the shrubs, &c., be an important point (and it often is so) a liberal allowance of substantial food must be allowed them to grow in; this may often be secured to them without the importation of much fresh material when the most is made of what is there. This we therefore strongly urge on our young friends to see to without delay, and before they commence operations, for it will often happen that ill-directed labour buries and destroys much valuable matter before it be aware of the uses it might be applied to. However, on ground approaching the extremes of stiffness, or dry, hungry lands, the addition of matter of a contrary description will be attended with a beneficial result, while in these extreme cases the selection of plants suitable to each ought also to be carefully studied, in order that the best may be made to meet the individual cases.

Thus, certain plants delight in a dry, gravelly, or chalky soil, others preferring a stiff loam, while the beautiful class called American plants like moist peat, but do not object to grow in a cool soil of another description, but have a decided objection to chalk, or soil in which lime predominates. This latter substance, being directly opposed to that in which they thrive, ought never to form an item in the same mixture as peat, for, though a peat bog may be ploughed up and the admixture of lime may do much for destroying that fibrous matter with which it is bound together, yet we are far from certain whether this is not affected by the annihilation of some of its properties most necessary to retain for the purposes of plant culture; if, therefore, your gardening operations extend over any tract of ground of this description, you may rest assured that you have found out the best possible site for the most beautiful class of flowering shrubs we possess, and before anything else is done, consider well how much of it you can allot to this section, for some expensive alterations will be necessary to make it available for other plants, which, after all, would not look so well.

Turning from the peat-bog or morass to one of a decidedly opposite nature, "the sand-bank," the number of plants available here is limited; yet we have seen a large embankment formed by a railway cutting rendered very interesting by such plants as Box, Furze, Yew, common Laurel, certain Privets, &c. Not that they all presented a thriving appearance, for, excepting the wild Juniper, few did not give signs of wishing for more nutritious food; yet they grew and looked tolerably well, and which would in any other case have been a barren mound became an interesting clump, for even grass would not have grown on it in anything like a satisfactory manner, for the least drought would have turned it brown and unsightly.

Even hills of entire chalk are scarcely sterile, as the common Yew and Juniper are found wild there where the coating of earth is very slight indeed, while such a position would be death to the Rhododendrons. Now, as each class presents ample variety, it behoves the careful cultivator intending alterations or adding new features to his grounds to consider well the various plants adapted to each particular case, and to act accordingly; for be assured that no after-management, however skilful, can so far alter the condition of a plant as to reverse its constitutional habits and wants.—R. N.

EXHIBITING CHRYSANTHEMUMS.

HAVING been desired to explain the manner in which Chrysanthemums are arranged in stands and conveyed to exhibitions, we requested Mr. Molyneux to favour us with a sketch of his stand and travelling box. He has obligingly complied, and the engravings and specifications will, we

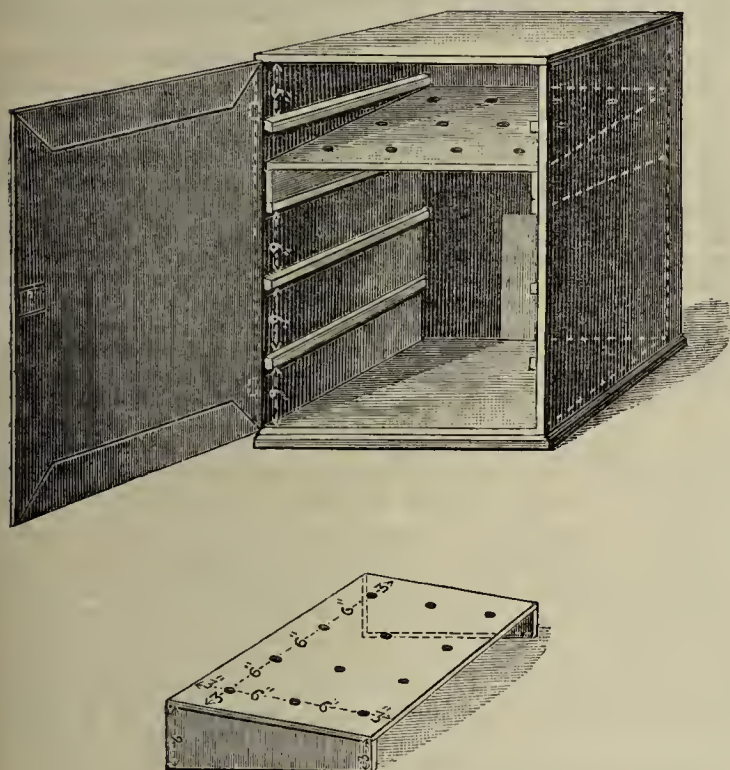


Fig. 48.—Chrysanthemum Box and Stand.

trust, enable intending exhibitors to provide themselves with the articles represented. The stands for twelve blooms are 2 feet long, 18 inches wide, 6 inches high at the back, and 3 inches in the front. This is mentioned here, as the figures on the stand are somewhat indistinct. It will be seen that there is sufficient height for the blooms when the stands containing them are placed in the box, the space being one-eighth of an inch wider and longer for their reception.

SPECIFICATIONS FOR CHRYSANTHEMUM BOX AND STAND.

The box to be made in cupboard-form of three-quarter-inch well-seasoned American pine, dove-tailed together at the angles, the sides, top, and bottom to be rebated for the back. Plant a rounded nosing as shown to the top of the box and a small chamfered plinth round the bottom.

The door to be clamped top and bottom, as shown on sketch, and to be hung to fall in flush with the sides of the box, the door to be hung with one pair of 2½-inch butt hinges, and to be fitted with a cupboard lock with, say, two keys. Fix a strong chest handle on each side of the box. It will be noticed that when the stands are placed in the box the door closes tightly against them, thus preventing any movement during transit.

The clear inside size of the box should be 2 feet 8½ inches high, 2 feet ¼ inch wide, and 1 foot 6½ inch deep from back to front. The box is intended to hold four stands, each stand arranged to hold one dozen

blooms. The stands are made with tops half an inch thick, and the two sloping sides three-quarters of an inch thick, the holes to be spaced as shown on sketch. The runners for stands to be seven-eighths of an inch and half an inch, and screwed to the sides of the box as shown.

It may be noted that the sizes of the stands as figured on the sketch are the regulation size insisted upon at the principal shows.

OLD AND NEW FLOWER SEEDS.

"Sow seeds as soon as ripe" is the advice generally tendered, and that it is essential with some seeds there is no doubt, while with others the case is not quite so clear. New Primula seed, whether it be of the sinensis strain or some of the many hardy species, is in all cases preferred; but I think that failure is not so much the result of the age of the seed as the conditions under which it has been kept. That seeds may be kept under certain conditions for any length of time without losing their original vitality may be amply illustrated if occasion requires. At present, however, I will only call attention to one or two cases—first, of seeds buried in the earth at 3 feet deep; secondly, of seeds in packets, kept for a number of years; and, thirdly, of others sown as soon as ripe. A case in point of the first instance was brought under my notice some few years ago by Mr. Latham of the Birmingham Botanical Gardens. who, having occasion to supply fresh soil to one of the sickly specimens of the Fir tribe, opened a trench 3 feet deep, at which depth a hole was made under the tree, and a seed pan filled with the soil was taken out, watered, and covered over with glass to prevent anything falling on to it. In a few days signs of life were apparent, and ultimately some thirty species, mostly weeds, were counted. On inquiry, Mr. Latham discovered that the tree had been twenty-seven years planted, and that a quantity of old potting soil had been used in planting it. This shows clearly that the two great essentials, light and heat, were absent, the seeds at this depth remaining uninfluenced by external conditions. The second instance is that of Primula seed, the species in question being *P. verticillata*, which, after having been placed among others in a box for several years wrapped in newspaper, germinated at the rate of 95 per cent., and this in less than three weeks after sowing. A quicker result could hardly be expected from seed of a current year's crop. I have, however, had a good crop of seedlings of *P. sinensis* from seed sown as soon as dressed in about three weeks from the date of sowing.

The third case is that of *Omphalodes Luciliae*, which is particularly slow in vegetating. I have sown seed of this as soon as ripe which has taken two years to germinate, and of its ripeness there can be little doubt, as I always left the seeds till ready to fall before I collected them. Instances, too, have been recorded of old Cyclamen seed having vegetated several days before the new seed, both having been sown at the same time and treated alike, so that it is not policy to discard seeds of valuable plants too readily. Palm seeds, and seeds generally of an oily nature, are best sown as soon as ripe, and even these in some species are very slow in germinating. Anyone desirous of keeping seeds of choice plants may do so either by placing them in bottles tightly corked, or in oilskin paper, both very simple and effectual. It is the constant exposure and varying changes of atmosphere, sometimes hot, cold, dry, damp, and so on, which cause seeds to lose much of their original vitality, and which are, as a consequence, almost valueless.—E. J.

SHERWOOD LODGE.

AMONGST the many charming residences of the picturesque forest of Sherwood is Sherwood Lodge, the Nottinghamshire seat of Lieut.-Col. Seeley, M.P., which is delightfully situated, and commands an extensive view of the surrounding neighbourhood. When entering the grounds a visitor feels isolated from the busy world, although but a few miles from several of the most extensive collieries and ironworks in the midland counties. Although a comparatively new garden, it is well worth a visit from any enthusiastic horticulturist, who, if he does not derive much pleasure and instruction thereby, must be singularly deficient in his powers of observation.

The mansion is built in the Elizabethan style, and is of moderate dimensions. It is closely surrounded by noble trees and shrubs of luxuriant growth, and is well furnished with a choice collection of climbers, amongst which we noticed *Clianthus puniceus* in flower. Attached to the house on the south side is a very pretty conservatory (built by Messrs. Messenger of Loughborough), and it contains, amongst other good plants, a remarkably fine pair of *Dicksonia antarctica*, planted out, the head of which measures about 20 feet across. The roof is lightly drooped with *Lapagerias* and other climbers, whilst a pretty fountain occupies the centre of the house. At one end stands a pair of *Araucaria excelsa*, the side stages being devoted to various small flowering plants, amongst them being some fine Cockscombs.

Sherwood Lodge is noted for its fine collections of Conifers and other trees and shrubs. Though the soil in many places is poor, much of the success attending the growth of these is due to the care and attention of Mr. Swanwick, the able gardener, who has spared no trouble in draining and improving the soil where the more delicate kinds are planted. The pleasure grounds are charmingly situated on a gentle slope, terminating in a valley, from which arises on the opposite side another slope of equal extent. They are laid out in a picturesque style with much boldness of design. Broad expanses of open, well-kept lawns and walks, with graceful flowing curves, noble Elms, majestic Oaks, and spreading Cedars, attract

the eye when we stand in the front of the mansion. Very little bedding-out is practised, but what is done is simple and effective. Each side of a long twining carriage drive is judiciously planted with a number of beautiful trees, such as *Picea lasiocarpa*, *P. Pinsapo*, *P. grandis*, *Pinus Coulteri*, *Abies Douglasii*, *A. brachyphylla* carrying a number of fine cones, *Araucaria imbricata*, and many perfect specimens of Golden and Silver Hollies and Yews. There are many noble Beech and Elm trees, whilst in various parts of the grounds are placed large variegated Aloes, which impart a very pleasing appearance.

The kitchen garden is situated to the right of the mansion, and has two great disadvantages, in having no walls and a north-east aspect. Notwithstanding these drawbacks, Mr. Swanwick manages, with the exercise of much skill and attention, to produce excellent crops of both fruit and vegetables. The Beet, Onions, Celery, Cauliflowers, &c., were excellent. Asparagus is well grown. Apples and Pears are grown on the espalier principle, and adorn the margins of the principal walks, and are carrying heavy crops of excellent fruit.

The glass houses are numerous, but not extensive. They are mostly old, and have not the same appliances as modern erections. Notwithstanding this, Mr. Swanwick grows both fruits and plants well, and is a very successful exhibitor at many of the leading horticultural shows in the neighbourhood. The stoves contain a good representative collection. Allamandas and Bougainvilleas are well grown. Several huge specimens are at the present time profusely flowered, whilst others have already played their part. Plants for table decoration are largely grown, and special attention is paid to them. The following are a few of those most esteemed—*Crotons Warreni* and *interruptus aureus*; *Aralias gracillima*, *Veitchi*, and *regina*; *Dracenas Ernesti*, *nigro-rubra*, and *Sydneyi*; *Cocos Weddelliana*, *Geonoma gracilis*, *Areca Baueri*, and *Pandanus Veitchi*, are a few of those most largely employed. Another house contains some good Queen Pines around the side beds, whilst the centre is devoted to a general collection of useful stove plants, amongst which are some well-coloured *Crotons* and a healthy plant of *Anthurium Andreanum*. The vineries contain a good average crop of well-finished Grapes, *Gros Guillaume* being especially noticeable. Other houses contain a number of Azaleas, Camellias, and other winter-flowering plants. General good order prevails throughout every department of the garden, which proves Mr. Swanwick to be one of our most able horticulturists, and his courtesy is as marked as his undoubted ability.—J. H. WALKER.

EARLY PRUNING VINES—LAYERING VINE RODS.

MR. IGGULDEN'S letter on the subject of cutting bunches of Grapes is timely, and will be of service to amateurs and diligent readers of the Journal like myself, if it should elicit the opinion of recognised authorities on Grape culture. It is a question that has been exercising my mind for some weeks past. I cannot help thinking it a mistake to cut off the foliage while still grass green, in the wholesale manner that must prevail when the bunches are cut with a portion of the lateral, and I am intending, for my future guidance, to mark my Vines and observe the effect next year on the produce from spurs where the laterals have been so shortened as compared with those left at greater length until the leaves have fallen.

May I also say a word on your reply to a correspondent (who is about to enlarge his vinery) on the subject of pegging down the stems? You may be, and probably are right in advising him not to do it. My experience, however, is in favour of the practice, particularly in the case of Vines where the roots can easily run away from the prepared borders.

My Vines have been planted eleven years; the borders inside and outside were all made but not confined. The Vines are vigorous and annually produce heavy crops of good fruit, and I have consequently never troubled about the roots. They are grown on the extension system, and some of the Vines have half a dozen main rods.

Two years ago, in order to get a rod into a more convenient position, I pegged it down in the borders just within the house. Roots were at once made, and this year the berries on the bunches on that particular cane have been far finer than from any other on the Vine, or on any other Vine in the house. I presume the new roots of this cane are all in the border proper, which gets a good annual top-dressing, while probably many of the feeding roots of the others are quite beyond the border. My intention is to treat several other rods in a similar manner next spring.

For the encouragement of brother amateurs I may say, that although confined to the desk every day until five o'clock, I manage, with assistance only in thinning the berries, to grow annually about 500 lbs. of Grapes, and sixty to seventy dozens of good Peaches and Nectarines—plenty of work, but a "labour of love."—E. BROWN, *The Grove, Lincoln*.

[We are well aware of the advantage that often results from layering Vine rods, but every case must be judged on its merits, and there is danger of overcrowding resulting from great luxuriance in a very small house. We have this year observed most satisfactory examples of layering Vine rods by Mr. Bardney at Norris Green, who has made weak Vines strong by that method, and in the place of a light crop of small Grapes produced a heavy crop of first-class fruit;

but with Vines strong to begin with, and the roots working freely in a new border, it by no means follows that layering the rods would be advantageous, and especially where there is little roof space for the growths to cover. We congratulate our correspondent on his success, and are glad to publish a letter so encouraging to amateurs.]

MALT AND KILN DUST.

WILL you allow me to correct a slight mistake in one of your answers to correspondents—"Vectis"—in last week's Journal. You state that malt dust is not the root growth of the Barley in process of malting, but is what passes through the kiln perforations whilst drying. This is not so. Malt dust is the root growth of the Barley screened from the finished malt after it is thrown from the kiln, and is a valuable food for cattle. That portion of the rootlet which passes through the kiln floor in the turning of the malt, and which is mixed with the dust from the fire, is termed kiln dust, an excellent and most valuable manure, much sought after by gardeners and farmers.—JAS. BARTLETT, *Warminster Brewery*.

[Our correspondent is quite correct, the word "malt" was accidentally inserted instead of "kiln." We have used both malt and kiln dust for the purposes indicated, and found both very good.]

CULTURE OF HYACINTHS IN BEDS.

It has now become quite general in both large and small gardens to have one or more beds of Hyacinths out of doors, and very welcome their flowers are in the early spring before the beds are needed for summer plants. A few hints upon the subject may therefore be useful, especially as planting time will soon be here, and bulbs should be procured at once.

SOIL.—To grow Hyacinths well in beds the soil should be rich, light, and deep, supposing the soil of the garden is a sound loam and well drained. Then fix upon the beds intended for these bulbs and excavate it to the depth of 15 inches. Level the bottom, and place a layer of small stones or brick-ends broken small, 2 inches thick. Cover this drainage with 2 inches of littery dung; then mix the soil that has been thrown out with some well-decomposed cowdung, some leaf mould, and plenty of river or sea sand, well screened. The proportions to be one part cowdung, one part leaf mould, to six parts of loam. Should the substratum be clayey or gravelly, that part must be wheeled away and as much good loam added as will replace it; then mix the compost well together, and fill the bed with it; let it be 4 or 5 inches above the former level, to allow for settling; lay it perfectly level, so that it may have the full benefit of the rain that falls upon it. This preparation of the beds should be done immediately. If there is time it would be all the better for a turn over before planting. I may just remark that if cowdung cannot be procured hotbed dung well decayed will do; but I greatly prefer the former, because it is of a cooler nature, and, generally, has less straw amongst it. I have used cowdung gathered out of a pasture with capital success.

PLANTING.—The best time for planting is the first week in October, though if the weather is mild they may be planted as late as the middle of November. Much depends upon the weather and the state of the ground. It should by all means be moderately dry, and therefore it is better to wait a week or two should the season at the right time of planting be wet. To prevent treading upon the bed at that time lay upon it a narrow piece of board long enough to reach across it, or have the board strong enough to bear the planter's weight, and raise it up at each end high enough to clear the bed; then procure a dibber to plant them with, which should be thick enough to make a hole as wide as the largest Hyacinth is in diameter, and the end that is thrust into the soil should be cut across and a mark made just as far from the bottom as the bulbs should be covered with soil; the proper depth is 3 inches from the top of the bulb. Anybody with a saw and a knife could make such a one. Having a fine day and the board and dibber ready, then bring out the bulbs and place them on the bed just where they are to be planted. Each Hyacinth should have at least 5 inches to grow in, but 6 inches would not be too much space for the leaves to expand, especially if the same bulbs are to be planted again the following season. If the colours are to be mixed place them so that the colours will succeed each other in rotation, as, for instance, 1, red; 2, blue; 3, white; 4, yellow; then 5, red, and so on till the bed is full; or if there are several beds, and it is desirable to keep the colours separate, so that one bed shall be red, another blue, another white, and another yellow, then plant them accordingly. For a geometrical flower garden the latter mode will be preferable. As soon as one bed is placed with bulbs, then fix the board across at one end, and proceed to plant them. As the planting proceeds have some of the compost ready sifted through a coarse sieve, and fill up the holes with it. This is much better than levelling the holes with a rake, because they are when so covered sure to be at the right depth. When all is planted, then rake the bed very lightly, and the operation is complete.

SHELTERS.—The Hyacinth is hardy enough to bear a moderate degree of frost; but it is advisable to cover the bed with about 2 inches of spent tanners' bark, to be removed early in spring before the shoots appear above ground. Where this is scarce, half-decayed leaves would answer the same purpose, or a mat or two thrown over the bed would be protection sufficient. These shelters are for such Hyacinth beds as may be in an ordinary flower garden on the lawn, or in beds in a geometrical flower garden, with Box or other edgings and gravel walks. If an amateur or florist cultivates the Hyacinth in long common beds like Tulips, a per-

manent shelter should be put up in the form of the bed, or the beds might be sheltered with hoops and mats. These kind of shelters can be used when the bulbs are in flower as a protection from sun, wind, and heavy rains. If so protected, the season of bloom will be considerably prolonged.

WATER.—As the season of the Hyacinth's growth takes place during winter and early spring it very seldom happens that they require much water at the roots, but during dry parching winds which sometimes occur in March, a slight sprinkling over the beds will be acceptable to the rising buds. In frosty weather this should be applied in the morning only; but if there is no appearance of frost, then water in the evenings also, previously to putting on the shutters for the night. This sprinkling may be continued with advantage till the blooms begin to expand. As soon as the bloom is over the old flower stems should be cut off, but not quite down to the ground, the covers removed, and as soon as the leaves turn yellow the bulbs should be taken up and laid upon a mat to dry. By being laid upon a mat they can be lifted easily under shelter in heavy rains, which would injure them much if allowed to fall upon them. When the leaves are all quite decayed dress them off carefully, without bruising the bulbs, and then put them away in a dry cool room till the planting season comes round again.—T. Y.



KITCHEN GARDEN.

WEEDS.—These always appear very plentifully in kitchen gardens at this season. Those which were allowed to bloom and seed in the fore part of the season are responsible for the abundant crop now, and we could not point to anything more convincing as to the evil and mistake of allowing weeds to seed than the trouble experienced with those young weeds now. In the hot weather it was easy matter to run the Dutch hoe through them, and they would die in a few hours, but now that the soil is moist and the atmosphere cool, hoeing has almost lost its advantage. After hoeing, the rough of them should be raked off. Should they persist in growing, hand-weeding must be resorted to, and this is both tedious and expensive, but it only tends to still further illustrate what we detest, the folly of keeping a dirty garden. If allowed to go on now the weeds will destroy autumn-sown Onions, Spinach, &c.

LATE POTATOES.—We are pushing on with lifting these. Nothing can be gained by allowing them to remain in the ground now. Choose fine days for taking them up, and get them under cover as soon as possible. Many complain of their late Potatoes not keeping well, but this cannot be expected unless they are treated properly at lifting time. Many think if they only escape disease when stored it is all right, but in our opinion Potatoes stored while damp have never the same excellent flavour as those placed in quite dry. Too much importance cannot be paid to this. So long as they are dry and in the dark there is no danger of their deteriorating in any way. Webb's Improved Schoolmaster is the best of all our late Potatoes this season. We are digging fine crops now from between rows of Broccoli, and in quantity and size it is excellent, while the sample we cooked the other day were all that anyone could desire. Our Potato supply until the new ones come again is safe.

RHUBARB.—The whole of the leaves on this have nearly disappeared. The crowns are thoroughly well matured, and forcing the roots in November and onwards will be an easy matter. The decayed leaves, however, are no use. They should all be cleared off, and place a quantity of good manure over the crowns. The finest Rhubarb we ever possessed came from roots which were fed more in winter than summer.

CAULIFLOWER.—Veitch's Autumn Giant is now turning in. None equals it in size or quality. It is superb in every way, and is distinct and good in every way. Those who try to substitute any other variety for it make a mistake. It has no equal, and should be grown in all gardens for an autumn supply. The other day we heard someone say they were cutting heads now from plants raised from seed sown last autumn. This is superfluous. We are cutting from plants from seed sown in the open border in March last. Young plants now a few inches high, and being raised for the first supply next spring, should be taken up and planted in frames or under handlights to stand the winter. They must have good soil and a sunny position. We treat a few thousand plants in this way, and numbers are left in the seed rows, where they often keep in good condition and prove very useful in spring. Those put into frames should be kept 3 inches apart, and the lights should not be put over them until there is danger of their being injured by severe weather. Anyone having no handlights or frames, but plenty of Cauliflower plants, should dibble a quantity of them close to the bottom of a hedge or wall where they will be slightly protected. Should a severe winter be experienced, break the leaves over recently formed heads when frost is expected.

TOMATOES.—Early frosts soon injure these, and as they are too much valued to allow them to be spoiled for want of attention, frame lights should be stood up against those growing on walls. We cut ripe fruits in November last year through adopting this simple plan in time. As soon as the fruits become in the slightest way coloured, cut them at once and place

them in a warm dry room to ripen. They will lose nothing in flavour by this. Where fruits are very abundant they ought to be taken to the kitchen and converted into Tomato sauce. We had lately some plants growing in a cool pit on which a heavy crop had just formed, and as these were growing in pots they have been moved into square boxes a little larger than the pots and placed in a warm Cucumber pit. Others have been put up on the back shelf of a Pine stove, and we feel pretty sure of having plenty of ripe fruit to the new year at least.

LETTUCE AND ENDIVE.—Neither of these is quite hardy, and it is always a safe and good plan to have a quantity of them in frames to keep up the supply when those in the open fail. Plants about half grown in the open quarters now should be lifted with good balls of soil attached to the roots, and be planted in cool frames 10 inches or so apart each way. They will soon become established and grow large, and be more useful than those which may be lifted and stored away when fully grown. Store Pea sticks, which will be of service next year. Clear out places ready for storing Carrots, Beetroot, &c., and do not allow any useless vegetables to remain growing.

FRUIT FORCING.

FIGS.—*Early Trees in Pots.*—As soon as the early Figs in pots have cast all their leaves the trees should be pruned, well washed, and properly dressed preparatory to tying them in to new stakes. If repotting is considered necessary, no time should be lost in getting it done and everything made ready for a new start. The Fig, unlike many other kinds of fruit under pot culture, seems to become prolific in proportion to its age, every short spur being literally covered with embryo fruit ready to start into activity when heat is applied to the trees. In course of time the trees become too large for removal from the house, as, for instance, when they are in 18 or 20-inch pots, in which it is best to leave them on the permanent brick pedestals, and build solid walls of new turf and old lime rubbish round each pot from the base of the pedestals to the rim of the pots, which should be done so soon as the trees are cleansed and tied. When the time arrives for forcing, fermenting Oak leaves and fresh stable manure well worked together should be used for filling the pit. This soon draws the new roots into the turf, and more turf should be added as the roots show on the surface, and the mass being properly supplied with liquid manure, the trees will scarcely lose a fruit when the change takes place for ripening, besides the steady growth which the cramping and high feeding induces results in a steady succession of fruit throughout the early spring and summer months.

Succession Houses.—Permanently planted trees will now be sufficiently advanced for lifting and replanting where they are too strong and show an inclination to make gross unfruitful wood. When dealing with these trees the principal points are—good drainage, rough calcareous compost, and firm ramming to insure the even passage of water.

Late Houses.—The trees in these are still producing good fruits, but they must now have the water supply lessened or withheld, encouraging them to ripen up the wood and go to rest. The house should be kept well ventilated constantly, but if the wood does not ripen kindly, allow the temperature to rise to 80° or 85° from sun heat by closing early, and before nightfall admit sufficient air to insure a circulation.

PINES.—As a fermenting material tan is the best heating medium for the roots of plants such as these, and where it can be procured at a reasonable price it may be considered the most effective, indeed superior to others for this particular purpose. In the case of rootless suckers it may be solely used as the means of artificial heat, especially for bottom heat, and for succession as well it has no equal. Beds composed of this material occasionally require to be renewed by an additional supply of fresh material about this period, and this should be attended to at once before the season is too far advanced and too precarious for such operations to be safely performed. The effect resulting from 12 to 18 inches of fresh tan being well worked into the rest will be the production of sufficient warmth to afford new life for a considerable period onwards, and without the danger of its being afforded too profusely. This is also the proper time to make new tan beds, which in the first instance should be made 3 to 4 feet in thickness. The tan for this purpose should be prepared by laying it in a shed dry and airy, where it can be turned over a few times, as it by that process becomes drier, and the risk of violent heating is to a great extent diminished. When made into the beds daily supervision must be made of the beds, or much mischief may happen at the roots of the plants plunged therein before it is discovered. The season is so advanced that artificial heat must be steadily increased. Although we do not advocate a high night temperature, sudden transitions in temperature are to be deprecated at any season. For rooted suckers 55° to 60° at night will be sufficient to keep them gently moving, 60° to 65° for successional plants, and about 70° in the fruiting compartments, with 10° to 15° rise from sun heat.

CUCUMBERS.—The first batch of plants which were raised from seed sown about the second week in August have nearly covered the trellis with short-jointed wood, and are showing fruit freely. These, however, provided the supply from other sources is equal to the demand, and there is ample scope for root-action, should be removed forthwith to enable the plants to thoroughly establish and strengthen themselves for producing and maintaining a supply of fruit about Martinmas onwards; but on the other hand, where the roots are confined to pots or boxes and are filled with roots highly fed, one or a couple of fruits per plant should be allowed to swell and so prevent the stored or pent-up sap from becoming stagnant and disease result. Ventilate the houses freely on all favourable occasions, so that they may make a short-jointed and consolidated growth, which will, all other points duly attended to, enable them to pass through the

igour of winter satisfactorily. Avoid cold draughts, and husband sun heat by early closing.

Where there is a second house the plants from seeds sown at the close of August or early September will have reached the first wire of the trellis, to which they will need to be trained in the usual course. Add more soil to the hillocks, as the roots protrude through the surface of the soil, and afford water when necessary. Those in pots and boxes will need a copious supply frequently. Attend to the stopping, thinning, and tying of the shoots as necessary. Maintain a genial condition of the atmosphere by syringing early on bright afternoons and damping available surfaces two or three times a day. Should green or black aphides be troublesome fumigate with tobacco paper of good quality moderately a couple of evenings in succession, when the foliage is dry, being careful not to give an overdose, which will prove highly disastrous if not fatal.

PLANT HOUSES.

Calla æthiopica.—Where a system of planting out has been practised these must be lifted and placed into pots at once. It is a great mistake to leave them in the ground until early frosts compel them to be lifted and housed. They become established in their pots much earlier outside than under glass, unless there is special provision for them. It is not necessary to lift the plants with large balls of soil attached, but as many fibry roots as possible should be retained. The greater part of the soil may be removed from the roots so that they can be placed in from 6 to 10-inch pots according to their size. Strong plants can be accommodated in the smallest size, and these are most useful for decoration. A few large crocks only are needed at the base of the pots for drainage, and the plants should be potted in a compost of good loam and decayed manure, about one-third of the latter may be used with advantage. After potting, well soak the soil with water and syringe the foliage for the first week. If this is done, and the plants stood in a shady position, they will soon commence rooting afresh, and in about a fortnight will be ready for housing in any cool airy position. They should, however, be left outside as long as the weather remains favourable.

Solanums.—The varieties of *Solanum capsicastrum* that have been planted out must also be lifted. Only reduce the ball of soil sufficiently to allow of placing them in suitable pots. If lifting and potting is not done carefully the foliage of these plants is very liable to turn yellow, and when this takes place their value is destroyed. The healthier and darker the foliage can be retained the more beautiful are the plants. This can be accomplished by careful treatment after lifting and potting. The soil and their foliage must be kept thoroughly moist, even a dry atmosphere must be avoided until the formation of fresh roots, when they may be gradually removed to a lighter and more open position until it is necessary to place them under glass. Plants that have been plunged in soil, ashes, or other material can now be lifted, removing all the roots that are outside the pots. Afterwards give the same treatment as advised for those that have been planted out; no injury will then result from the removal of the roots, and the foliage can be retained in a healthy condition.

Bougardias, Salvias, Eupatoriums.—These and similar plants that have been placed out during the summer should be lifted and established in pots ready for housing at the approach of frost. They soon establish themselves in a shady position outside if given the same treatment as advised for *Callas* and *Solanums* until they commence rooting freely. When lifted and stood together they are much more readily protected from slight frost than when growing in the borders outside. Do not remove them indoors until established, and in case of frost they can easily be placed on their side and covered with mats or tiffany. Slight protection like this is ample, and allows of the plants being left outside longer than would otherwise be possible.

Lilacs and Guelder Roses.—Where these are retained in pots and forced every alternate year they will now possess bold prominent flower buds on moderately strong growths. Some of the terminal buds of the former are showing signs of starting again into growth, which frequently is the case when heavy rains or frequent showers follow long spells of hot dry weather. Growth was brought to a standstill early in the season, and to preserve the buds in good condition the plants must be lifted from the soil in which they are plunged and all roots outside the pots removed. This will check the plants sufficiently to prevent further growth.

THE FLOWER GARDEN AND PLEASURE GROUND.

Lifting Old Bedding Plants.—While the beds remain fairly bright and ornamental some diffidence is felt in lifting any old plants that may be required for stock purposes, but if they cannot be had from the mixed borders they must be taken from the flower garden before they are injured by frosts. If a sufficient number of cuttings of such kinds as *Coleuses*, *Alternantheras*, *Iresines*, and *Heliotropes* have not been struck, an attempt must be made to pot up a number of old plants, and these if safely wintered will afford abundance of cuttings in the spring. Only small balls of soil should be taken up with the roots, especially when the soil in the beds is rather heavy, and clean well-drained 5 inch and 6-inch pots are quite large enough for any of them. All should be placed in a warm frame, pit, or house, and shaded from bright sunshine for a time. These lifted plants must be very carefully supplied with water, and the three first named are best wintered on shelves or stages in a forcing house. The *Heliotropes* may be kept in a warm greenhouse. Dwarf *Lobelias* are best propagated in the spring by division of stocky old plants, these sturdy little plants thus easily obtained being of much better habit

than the best of seedlings. A considerable number of plants well furnished with growing shoots may well be lifted (as there is almost certain to be a number of losses), and these each with a fairly good ball of soil and roots may be packed thinly in ordinary shallow *Pelargonium* boxes, using good loamy soil. They may be stood in a shady position for a time, or be placed in a cold frame or pit. A cool dry house or a pit in which heat is turned on in either very damp or very frosty weather best suits them during the winter, both excessive heat and dryness, or cold and damp, being most injurious. Choice variegated and Zonal *Pelargoniums*, of which the stock is limited, ought also to be potted, every uninjured shoot, if preserved during the winter, being available for striking early in the spring. No attempt should be made to secure a ball of soil, but care should be taken to damage the roots as little as possible. They may be placed singly in 3-inch pots, or five or six plants may go in an 8-inch pot. When they are thus crowded together it is advisable to pick off the bulk of the old leaves, as these are liable to damp off and spread decay all round. Supposing the plants are given fairly moist and good loamy soil, but little water will be needed, especially if they are stood in a cold house or frame. If placed at first in a slightly heated pit they will recover more surely and quickly from the check received.

Begonias.—When the beds are broken up before a severe frost has been experienced, these are frequently still blooming freely. All will lift readily, and when carefully potted and stood in a shady position, either in a conservatory or greenhouse, they will continue to bloom for some time longer. *Begonia weltoniensis* lifted from the beds are very effective for a time, and the same may be said of the tuberous varieties. None of them should be kept very dry when at rest, nor, on the other hand, must they be stood under the drip of various plants on a staging overhead. If the tubers are left in the ground later than October many of them are liable to decay during the winter, but we have seen them wintered in the open ground, the position in this case being warm and the soil of a light nature.

Propagating Shrubby Calceolarias.—Shrubby *Calceolarias* have been surprisingly bright and effective this season, but cuttings are rather scarce. Fortunately they will strike if put in any time during October and till late in November, but it is not advisable to defer propagation very late or severe frost may spoil the cuttings. A cold frame or pit is the best place for striking and wintering the cuttings, and if a heated pit is used the heat in the hot-water pipes should be turned on in frosty weather only, the aim being to keep the plants alive but not in active growth. A fairly dry and well-drained position should be selected for the frames or handlights. No heating material whatever should be used, but the frames may be stood on a shallow firmly built bed of spent manure and leaves, more of this material being placed in the bottom of the frames; on this to be put about 6 inches of fairly good loamy soil, finishing off firmly and evenly with half that depth of light sandy soil, a surfacing of sand completing the bed, and this should bring back the cuttings when inserted to within 6 inches or less of the glass. Hard "wiry" cuttings are not suitable, and the preference should be given to those that are flowerless, short-jointed, and fairly but not over-succulent, and they should be trimmed and put in at once. All should be about 3 inches in length and cut to a joint, the lower pair of leaves only being trimmed off. They may be dibbled in about 3 inches apart each way, every cutting touching the bottom of the hole made and firmly fixed. A watering through a fine-rose watering pot to be given, and the frame, pit, or handlights, as the case may be, kept close and shaded from bright sunshine till the cuttings are rooted, this taking from six weeks to two months to accomplish, after which time they should receive abundance of air on all favourable occasions.

Gazania splendens.—Cuttings of this good old-fashioned edging plant may be put in at the same time as the *Calceolarias*, and in precisely the same manner, but in this case spring-struck cuttings are equally as good for bedding out as those struck in the autumn. Consequently only half the required stock need be struck now, and these will furnish a number of good tops in the spring, which will strike readily in a little heat.

Dahlias.—Only the best of the seedlings are worth preserving, and these should be marked before frosts cut them down. All the sorts, if not correctly named, should be labelled, in order that their respective heights and colours may be known in the spring. When the soil is of medium texture and the plants not too large they may sometimes be safely potted. If the attempt is made to secure a large ball of soil and roots large portions are apt to break away, and failure is the result. We have frequently succeeded in establishing large lifted plants in 12-inch pots, and these, after being stood in a cool shady position for a few days, have been transferred to a conservatory, where they continue to flower till *Chrysanthemums* are abundant. *Constance* or the *White Cactus* lifts fairly well, and the blooms thus secured are of great service. *Juarezii* is apt to grow too large to be lifted safely, but the smaller and very showy *Glare* of the Garden is well adapted for pot culture.

Marguerites.—These also can be readily potted, and if kept shaded from bright sunshine for a time will continue to blossom for some time longer. They are very stocky this season, and are more floriferous as well as more easily lifted accordingly.

AMERICAN BLACKBERRIES.—I believe Mr. Muir is right in his estimate of the value of these. The Parsley-leaved Bramble has been growing in the garden here for some years, and annually produces a good crop of fruit, which I consider decidedly inferior to that of the common Bramble growing about the place. This variety is worth growing as an ornamental

plant. A large bush of it trained to a few iron stakes has a very pleasing effect. Visitors scarcely ever fail to notice our plant. After the glowing accounts given of some of the newer varieties we planted some of Lawton, that being recommended as a good variety, but it turns out to be no better in quality than the Parsley-leaved Bramble, and without the ornamental foliage of that variety.—E. B.

THE BEE-KEEPER.

USEFUL HINTS ON BEES.

SYRIAN BEES.

THE Syrian bees have some good qualities, and but for their spitefulness and tenderness during cold weather would prove a good variety of bee. Like the Cyprian crosses the Syrian ones crossed with the Carniolian drone have already proved themselves good honey gatherers, and, as is usually the case with crosses, partaking of the nature of the male, and are therefore very docile. The pure Syrians I observe are capital sealers of their honey; they do not, like some varieties, have much loose honey in their hive. These good features palliate their stinging propensities, which I am inclined to think climatic influence will lessen. It is premature to speak on that point positively, but my experience with several indicates it. Where there is a will there is a way, so I find there is a way of manipulating the Syrian bees, as there is with others, by "flinging a bone in the devil's teeth." While manipulating several hives of pure Syrians lately I was savagely attacked by them, but having my knife in hand cut a piece of their honeycomb. Their propensity for honey being so great they at once ceased the attack and flew to the honey, when I was allowed to have my will while they had theirs. I have more to say about these Syrians, but wait till I have more data.

THE HEATHER HARVEST.

Owing to the continued low temperature, the honey harvest from the Heather this year will not be great. Favoured localities may have yielded a fair quantity, but in many it is nil. In the south of Scotland I hear of 50 lbs. being stored, but in the north it is a failure. From statistics I should say the average gathering throughout Scotland will not exceed 15 lbs.

CONDEMNED BEES.

Where surplus bees were utilised in July and then joined to others, they will have served the purpose of gathering much surplus honey to their master, and now there will be no condemned bees to dispose of; but where this was not attended to there will be some. There are two ways of putting these to use. The one is to put a swarm on to another stock hive, thereby strengthening it; but this system of joining, particularly when done in the usual haphazard way, has its drawbacks, because unless both queens are young the old one may be the one saved. Therefore, care should be exercised to depose the most worthless queen, and otherwise use every precaution for the safety of the most youthful and prolific of the two.

Manipulating bees so late in the season is not only difficult but liable to cause fighting and robbing, so every care should be taken to guard against it. Manipulating within doors is not always practicable. When that cannot be done the operator should either have a portable tent to place over the hive, or have in readiness a cloth to cover the hive at any time bees are observed about.

Searching for the queen being the principal object, a spare hive should be provided, also a case having glass on both sides of the proper width and depth for frames, and a ventilating lid. Into this case drop a frame with combs and bees from the hive the queen is wanted. The moment the frame is removed protect it from robbers, and search for the queen on the frame in the glass case until she is found. When the queen is not found on the first frames examined,

lift it into the spare hive, protecting it also from robbers by cloth coverings. This case is fixed in a frame of such a height that the bee-keeper may not have to stoop when searching for the queen. There is sometimes a difficulty in catching the queen from a straw hive where the bee-keeper wants experience. A very simple plan to make this easy is to have a race made with wood on one side and glass on the other, and about an inch between, having two slides to stop the passage and imprison the queen when she is observed. This race requires to be attached to a board covering the hive when inverted, the race leading into an empty one into which the bees ascend when being driven; but it is better that the whole thing be fitted to a frame made for the purpose. A practical bee-keeper does not require such tackle, but to a novice it is not only useful but interesting. A second and good plan of utilising condemned bees is to give them comb foundations to work out for next season's use.

YOUNG QUEENS AND QUEENS IN RESERVE.

Not only should bee-keepers study to have young queens at the head of all stocks, but should keep a few in reserve in case of any casualty occurring in any of the hives. If not wanted for that purpose they are useful for putting at the head of the stock swarmed next summer or to sell.

SMALL SUPERS.

Those who can sell supers readily should now set to work and have them in readiness for next year. The market here is glutted with sections, but there is a demand for well-filled small supers.

COVERING HIVES.

I again advise covering the crowns of all hives well with meadow hay or sphagnum, pressed firmly, but not covered with any material unless the roof, which must admit of a free circulation of air over the top of hay. Avoid placing non-porous material on the top of the hay.

GENERAL REMARKS.

See that all hives have a full supply of meat to last till May. Protected against admitting wet from outside as well as being protected from condensed moisture inside through too much contracted doorways, or in the absence of a ventilating floor. In windy situations guard against the hives being blown down by a wire pegged to the ground and fastened to a screw-head in the side of the hive. Plenty of good security against storm and being kept dry are the secrets of success, if I add let them alone until the spring.—A LANARKSHIRE BEE-KEEPER.

"LABOUR LOST—A PROTEST."

MR. THOMAS WILDMAN, after he had given some instructions as to the proper management of bees, concludes the chapter in words which were intended to parody the reply, as he tells us, of C. F. Cresinus when arrayed before the Curule Edile. "These, Britons! are my instruments of witchcraft; but I cannot show you my hours of attention to this subject, my anxiety and care for these useful insects; nor can I communicate to you my experience, acquired during a course of years." Very true is the impression here conveyed. We can teach, if neighbours show those who desire demonstration, and by other means we can assist others to attain that measure of success to which we have ourselves attained, but we cannot relieve them if we would of anxiety nor after-attention which a careful management necessitates. We cannot give them that practical experience so necessary to prove the value of the teaching we desire to inculcate; but if only those who desire to obtain assistance will strictly carry out the instructions given them in the articles in various books and periodicals, the result will be that a success, probably greater than their most sanguine expectations lead them to hope for, will follow from an experience gained by putting theory into practice, and proving by actual experiment the truths they are in their novitiate obliged to accept, not being in a position to refute.

Here lies the essence of the advice I desire to give, for there is evidently great need for an emphatic protest against the course taken by so many of our friends who are desirous to learn from the *Journal of Horticulture* and the *Bee Journal* the way to manage their apiary and to conduct the different operations necessitated by the possession of a few stocks of bees, if the greatest amount of pleasure and of profit is to be obtained from the study and care of these insects. To give an instance: Our country friend desires to unite the bees driven from a stock to the one standing by its side. He accordingly refers to back numbers of this *Journal*, and

finds exactly what he requires. He reads the instructions most carefully through, and proceeds to put them into practice, but as "the town" is some distance away he has no essence of peppermint or other strong-scented substitute, so forgetting what he has read about the different odours peculiar to each stock, he reckons "it doesn't matter," and thinking to get done in good time, about four o'clock in the afternoon he proceeds to unite. An hour makes no difference, and as for that "bit o' essence" it will matter nothing he seems to think—and in skilful hands it might not be of much moment. In other respects he carries out the instructions, but is amazed in the morning to find that a serious fight has taken place, and that thousands of bees lie dead upon the floor, and that instead of his stock being strengthened by the union, it is reduced to a most deplorable plight. Everybody knows the sequel. Hot abuse and vituperation of new-fangled ways of books and book-learning, vows never again to venture out of the ruts of custom into the paths of knowledge. He never blames himself for omitting the essence. No he. He never thinks that evening is the time when he is told to perform the operation; but thanks the person who was kind enough to instruct by abusing him and all his ways. This is no exaggeration. It is in one form or another of far too frequent occurrence. Let me ask, is it fair? In the name of common sense is it reasonable, first of all, to neglect instructions, then abuse the instructor when failure follows the departure from the rules given for guidance at such times?

There is no more common abuse prevalent—not only amongst bee-keepers, but amongst gardeners and other classes—than this, shall I say impertinent misuse of books. Books and papers are written to instruct. Some use the instruction; many abuse it. Few are so clever as to need no instruction. More there are who are ashamed to acknowledge ignorance, and many are to be found who may, if they will to do so, gain from the writings of others a knowledge of the subject they wish to understand, which even if it be but a poor apology for practical knowledge, is still a great assistance and a material help when, instead of years, but a few months only can be spared to gain an efficient idea of how to manage even so apparently simple a business as bee-keeping. It is in such cases that a feeling of despair comes over the minds of those who, at no little trouble to themselves, try to assist others. How many times does "A Lanarkshire Bee-keeper" draw attention to the most salient features conducing to success, and yet getting up from reading this advice, and going to some cottage bee-keeper who reads his Journal regularly, there seems to be an absolute determination not to take advantage of the excellent opportunities offered for improving the value of his stocks and doubling and trebling their annual yield? On the other hand, how gratifying to see the result as shown in the apiary of a wise man who, following the teaching he thinks most profitable, carries it out until he feels able by experience to improve upon the teaching he has followed, and at last is able not only to manage his own hives, but to give sound advice to those around him.

Five hundred years of bee-keeping will teach some men nothing, while as many days will give others a knowledge of no superficial kind. To conclude, let me ask one and all who come to books or to papers for advice, to carry out the instructions there given *in toto* until they feel confidence in their own power. Then always remember, in case of failure, that it is not the books at whose door the fault must be laid, but at the door of experience, a hard taskmaster, who often requires many failures ere the high road to success is reached, and even then often throws across the comparatively smooth path of the wayfarer obstacles of so serious a kind as to need more than one attempt to surmount them. It is then time to blame instructors when their instructions have been carried out, not in letter only, but in spirit also, and failure has been the result. Condemnation before fair trial disgraces those who utter it, and fails to strike those who do not deserve it. Criticism is indeed a blessing, and is necessary, but to criticise some knowledge of the subject under consideration must be possessed; and as one who feels he is not either better informed or who cannot see some transparent fallacy in the advice given for his assistance, is entitled, before trial at any rate, to deride the means pointed out to him as the surest way of successfully performing a necessary operation.

Men who know most condemn least; those who know little condemn much.—FELIX.

TRADE CATALOGUES RECEIVED.

Thos. S. Ware, Tottenham.—*Catalogues of Bulbs, Daffodils, and Lilies.*
Lambert and Reiter, Trier, Germany.—*General Catalogue of Plants.*
Richard Gilbert, High Park Gardens, Stamford.—*Little Catalogue of One Dozen Specialities.*
L. Jacob-Makoy et Cie., Liège, Belgium.—*Catalogue of New Plants for 1885.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or

members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Addresses for the "Horticultural Directory" (W. L. B. and others).—The information has arrived too late for insertion, and no more names can be added this year.

Lifting Turf (F. T. D.).—It is impossible that questions such as yours, that arrive just as we are preparing for press, can be answered in the current issue.

National Chrysanthemum Society's Show (A Constant Reader).—The prizes named by you, and respecting which you will find more particulars on another page under "Chrysanthemum Notes," will be offered at the Exhibition to be held at the Royal Aquarium, Westminster, November 11th and 12th. There are two classes, and only one prize in each class.

Seakale (E. D. B.).—The roots and crowns to which you refer are raised from portions of smaller roots or thongs, these being cut into lengths of five or six inches in the autumn, stored in soil or ashes, where they form terminal buds, and are planted in the spring. Seakale for forcing is largely grown in market gardens near London.

Caterpillars in Garden (A Ten-years Subscriber).—Though you sent the caterpillars in a tin box it was so bruised below the lid that some of them squeezed through into the letter, and the others were crushed. You may imagine the state of the paper when we state that part of it was almost like pulp. This is through no fault of yours, but the box must have undergone very rough usage in transit. The caterpillar is the larva of one of the Dart moths (Noctua). It is a most destructive pest and difficult to destroy. When Cabbages and other plants are seriously attacked it is often found necessary to dig the soil from each plant and fill in the cavity with soot, and also to place a ring of gas lime or guano round the plants, not close to the stems to form a barrier, the caterpillars travelling from plant to plant at night. Watering the ground with diluted ammoniacal liquor from gasworks has been found serviceable; failing a supply of this a wineglassful of petroleum mixed in a large garden can of soapsuds might have a good effect. Gardens infested with these caterpillars should be cleared of all weeds, and the ground turned up roughly for the winter.

Peaches and Nectarines for Market.—Trellises for Peach House (J. C.).—Market growers have regard to colour and freedom of fruiting, growing a good many Red Magdalen and Royal George, but are guided in the selection of kinds by the time the ripe fruit is required. For early, Alexander, Hale's Early, and A Bec. For ripening in June and onwards, Royal George, Stirling Castle, Crimson Galande, Belle Bance, Bellegarde, Dymond, Violette Hâtive, Barrington, and Late Admiral. Nectarines are not much grown. For early, Hunt's Tawny and Lord Napier, and to follow those Elruge, Violet Hâtive, Pittaston Orange, and Pine Apple. It would be best in a house 10 feet wide to have a low curved trellis to allow of trees being grown in front as well as on the back wall, but the front trellis must not be taken higher than half the height of the back wall, and kept quite 4 feet 6 inches from it, so as to allow of the trees on the back wall having light to their base.

Climbers for Cool Greenhouse (C. E.).—The following will endure a little frost, and will probably succeed in an unheated greenhouse in your district:—*Lapageria rosea* and *alba*, *Solanum jasminoides*, *Passiflora racemosa cœrulea*, *Berberidopsis corallina*, *Clematis indivisa*, with any of the hybrids of the Jackmanni type, *Akebia quinata*. Roses suitable are besides *Marechal Niel* and *Gloire de Dijon*, are *Reine Marie Henriette*, *Cheshunt Hybrid*, *Isabella Sprunt*, *Climbing Devonensis*, *William Allen Richardson*, *Rêve d'Or*, *Perle de Lyon*, *Jean Ducher*, *Madame Berard*, and any other free-growing Tea-scented varieties.

Keeping Late Grapes (W. M. G.).—We are not surprised at the Grapes not keeping, as you state they are not ripe yet. This alone is sufficient to account for their decay, and is a very common defect. Late Grapes, to keep well, should be thoroughly ripe by the middle of September, which can only be effected by assisting the Vines in spring and early summer with gentle fire heat, so as to have them sufficiently early for ripening the fruit by the time indicated. The Grapes should be allowed to hang on the Vines until the leaves have fallen, when they should be cut with a sufficient length of wood below the bunches, to allow of that part being placed in bottles of water, and all the wood above the bunches should be retained, at least it is best so to do, as cuts increase the evaporation. The bottles should be about three-parts filled with clear rain water, and a piece of charcoal placed in each. The bottles should be placed on a rack, so that they slope to an angle of about 45°, so that the bunches will depend clear of the bottles. The bottles will need replenishing as the water wastes, and the Grapes should be examined occasionally for decayed berries, which should be removed as they appear. The most suitable place for keeping the Grapes, failing a Grape-room, is a rather dry room, which can be kept at a temperature of about 45°, or ranging between 50° as a maximum and 40° minimum. The vinery is not a proper place, for, if they will not keep on the Vines, they certainly will not in bottles of water in the same house; but the cause of their not keeping is, as before stated, their not being sufficiently ripened, or whilst the sun has sufficient power to develop the saccharine matter essential to their keeping.

Insects on Chrysanthemums (Salopean).—Your plants have been infested with a species of aphid belonging to the *Rhopalosiphum* group or section, and allied to the black species that frequents the Bean and other leguminous plants, though somewhat different in structure and habit. It is probably a species only to be found upon the Chrysanthemum during the

later summer or autumn, the first broods of the insects being reared upon docks and other common weeds. Your method of extirpating them with softsoap and tobacco water is a good one, and something may be done in the way of stopping their migration to the Chrysanthemums, as by the inexpensive means of syringing the plants occasionally in summer with a decoction of quassia, in which a little softsoap is dissolved. The bitter is unpalatable to the aphides, and the soap hinders them from obtaining a firm foothold. We are informed that this destructive species of aphid was introduced with Chrysanthemums from America, and it has given much trouble to some growers of the plants in this country.

Lichens on Apple Trees (E. J. F.).—It is best to remove the cause—namely, a too wet soil and want of vigour in the trees. The remedy for the first is efficient draining of the ground, putting in pipe drains 18 feet apart and 3 to 4 feet deep. The drains should, of course, have proper falls and outlets. If the trees are on grass—i.e., in orchard—we should apply in winter a good dressing of the *débris* of the rubbish-heap, which can be thrown into a heap now along with one part of quicklime to six of the rubbish. The woody portion of the rubbish should be picked out, and, when sufficiently dry, charred, and added to the compost, which should be turned after it has laid six weeks, and in six more it may be applied to the ground as a surface dressing at the rate of thirty-six cartloads per acre. If the trees are in cultivated ground they should have the surface soil scraped from about them as far as a majority of the roots extend, but without injuring them, giving a top-dressing of the material above named, to which has been added a fourth of good turfy loam if it can be obtained, and mulch with a couple of inches thickness of fresh manure, covering this lightly with the soil scraped off, and the remainder may be spread over the surrounding ground. The trees should have the stems scraped as well as the thick branches, so as to remove the lichen, and then washed with a brine formed of salt, which should be sufficiently strong to float an egg. The parts that cannot be reached with a brush may be syringed with the brine, but it must be only at midwinter, when the trees are dormant, and when the weather is mild and dry. If the trees are bushes or pyramids they may be dusted whilst wet or after a shower with quicklime, and if done efficiently it will destroy the lichen. The lime should be applied when the trees are dormant.

Large Mushrooms (W. B.).—The specimen sent is one of the *Boleti*, possibly *B. edulis*, but we are not certain, as it was imperfect; and, at any rate, it is not poisonous provided it is cooked in a fresh state, stale examples being more or less injurious. The following is the description of *Boletus edulis*, extracted from "The Eatable Funguses of Great Britain."—"A handsome Fungus, often attaining a considerable size, much exceeding that of any other of the genus. The pileus is brown, convex at first, but becoming plane in maturity, and sprinkled with fine powder. The flesh is pure white. Neither it nor any other part of the plant turns blue when wounded, as is the case with the deleterious species. The tubes vary in colour at different stages of maturity: at first they are white, then lemon colour, then of a full dull yellow; they turn olive colour when bruised. The stem is thick and solid, white in youth, but turning brownish in maturity; it is covered towards the summit with a fine network of pinkish veins. The spores are olive green, and after they are shed the Sap-ball sinks quietly to decay. This species is pretty frequently present in woods, especially under Oak trees in the south of England. It appears during the summer months or early in autumn, and a succession of plants follow one another till checked by the frosts. To recommend the Edible Sap-ball as merely wholesome is to inflict upon it the injury of half praise. Ancient and modern gastronomists unite in pronouncing it "excellent" and "delicious." It was well appreciated by the ancient Romans, though the *Amanita Cæsarea* was accounted more fashionable by them, and Pliny describes it as an article of diet. It is sold under the name of "Porcins" during the winter in every market of modern Italy. In Lorraine it is called the "Polish Mushroom," because the use of it was there introduced by the Poles. In Russia it is preserved by drying until the annual fasts, when, simply boiled, it becomes an article of welcome variety. There are but few edible species in the *Boletus* group, and, though M. Vittadini asserts that all are wholesome if dried first and then cooked by stewing, we would rather not venture to eat them. The *Lurid Boletus* has an especially evil look. The Germans record their suspicions regarding it by the popular name they have bestowed upon it—"Satan's pilz;" and we should object to eat it were it ever so dry or ever so well stewed. In seeking, therefore, to obtain the luxury of a dish of the Edible *Boletus*, we must be on the watch for the points of distinction between the wholesome and deleterious species. The latter turn blue when wounded. None of the edible species turn blue. The delicious Edible *Boletus* is distinguishable from the undesirable Chestnut one (*B. castaneus*) by the stem; that of the latter being covered with cottony fibre, and that of the former with smooth netted veins. The specimens should be gathered in the immature stage, when the tubes are lemon colour. To cook the Edible *Boleti* you must first scoop out the tubes with a silver spoon or knife; cut them in pieces, and lay them in a dish, with butter, pepper, and salt; cover the dish close, and bake for one hour. Persoon gives a more elaborate receipt:—"They may be cooked with white sauce, with or without chicken, in fricassee broiled or baked with butter, salad oil, pepper, salt, chopped herbs and bread crumbs: to which some add ham or a mince of anchovy. They make excellent fritters. Some roast them with onions (basting with butter); but as these take longer to cook than the *Boletus*, this must not be put down till the onions have begun to soften." Paulet gives a receipt for *Boletus* soup made in Hungary:—"Having dried some *Boletuses* in an oven, soak them in tepid water, thickening with toasted bread till the whole be of the consistence of a puree; then rub through a sieve, throw in some stewed *Boletuses*, boil together, and serve with the usual condiments." Caution.—The *Boletus* which has the worst character for its poisonous qualities is the *B. luridus*. In this species the pileus is brown, and generally covered with white or grey bloom, which disappears in age, and leaves the pileus smooth or sticky. The stem is stout, inclining to bulbous at the base, of a dull pale vermilion colour, dotted or lined with a darker shade. The tubes are also dull vermilion at the mouth, but if the Fungus be cut in half the upper part of the tube is seen to be of a yellow colour. It changes to blue when bruised. *B. satanas* is a very nearly

allied species, the pileus becoming pale after maturity, and the red stem being without markings. Both are handsome and accounted poisonous."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*High Broom*).—No one here can read your name now you have sent it. We named all the fruits received with letters accompanying them, on and up to September 23rd in our last issue, except some from "A. C.," and the names of these are as follows: (*A. C.*).—PEARS.—1, probably Beurré Bosc; 2, too unripe; 3, Fondante d'Antonne. APPLES.—1, Cobham; 2, Irish Peach; 3, Ribston Pippin. (*T. W. G.*).—1, Flanders Pippin; 2, Cornish Gilliflower; 3, Blenheim Pippin; 4, Autumn Pearmain; 5, Hoary Morning, small specimens; 6, Ord's Apple. (*J. F. W.*).—Williams' Bon Chrétien. (*F. R.*).—Swan's Egg. (*H. W.*).—The Grape in Gros Maroc; the Apple we do not know. (*Grower*).—Plums: 1, Tardive de Chalons; 2, Pond's Seedling; 3, Morocco. The Pear is Louise Bonne de Jersey. (*A Subscriber*).—1, Not known; 2, Vicar of Winkfield; 3, Louise Bonne de Jersey; 4, Uvedale's St. Germain; 5, Jersey Gratioli; 6, Catillac. (*Bromborough*).—Beurré Hardy. (*T. E. F.*).—We are sorry we cannot identify either of the Apples. It is most difficult to determine the Apples of Yorkshire, of which there are so many local varieties. (*C.*).—Pears: 1, not known; 2, Duchesse d'Angoulême; 3, Beurré Capiaumont. Apples: 1, Winter Strawberry; 2, Adams' Pearmain.

Names of Plants.—We only undertake to name species of plants, nor varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. C., Wavertree*).—1, *Selaginella Kraussiana* Browni; 2, *Selaginella apus*; 3, *Plumbago Larpetæ*; 4, *Adiantum cuneatum*; 5, *Astilbe rivularis*; 6, *Clematis Jackmanni*. (*P. J.*).—1, *Cratægus coccinea*; 2, *Carya porcina*; 3, We received no specimen with this number; 4, *Bryonia dioica*; 5, *Polygonum aviculare*; 6, The specimen was an unsatisfactory one, but it resembles *Thuia occidentalis*. (*D. A.*).—The Orchid is *Dendrobium Dalhousianum*, and is quite distinct from *D. formosum giganteum*, which has large white flowers. (*J. H.*).—1, *Solidago virgaurea*; 2, *Lychnis diurna flore-pleno*; 3, *Euphorbia cyparissias*; 4, *Pyrethrum uliginosum*; 5, *Veronica Andersoni* variegata.

COVENT GARDEN MARKET.—SEPTEMBER 30TH.

OUR market still well supplied, prices inclined to improve.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 0 to 3 6	Peaches	per doz.	2 0 to 8 0
Cobs, Kent ..	per 100 lbs.	24 0 to 26 0	Pears, kitchen ..	dozen	0 0 to 0 0
Figs	dozen	0 8 to 0 9	„ dessert	dozen	1 0 to 1 6
Grapes	lb.	1 0 to 3 0	Pine Apples English ..	lb.	2 0 to 4 0
Lemons	case	15 0 to 21 0	Plums	½ sieve	1 3 to 2 6
Melons	each	1 0 to 1 6	Strawberries	lb.	0 0 to 0 0
Oranges	100	8 0 to 12 0	St. Michael Pines ..	each	3 0 to 7 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 0
Asparagus ..	bundle	0 0 to 0 0	Mushrooms	punnet	0 6 to 1 0
Beans, Kidney ..	lb.	0 8 to 0 0	Mustard and Cress ..	punnet	0 2 to 0 0
Beet, Red	dozen	1 0 to 2 0	Onions	bunch	0 3 to 0 0
Broccoli	bundle	0 9 to 1 0	Parsley	dozen bunches	2 0 to 3 0
Brussels Sprouts ..	½ sieve	0 0 to 0 0	Parsnips	dozen	1 0 to 2 0
Cabbage	dozen	0 0 to 1 0	Potatoes	cwt.	4 0 to 5 0
Capiscums	100	1 6 to 2 0	„ Kidney	cwt.	4 0 to 5 0
Carrots	bunch	0 8 to 0 4	Rhubarb	bundle	0 4 to 0 6
Cauliflowers ..	dozen	2 0 to 3 0	Salsafy	bundle	1 0 to 0 0
Celery	bundle	1 6 to 2 0	Scorzonera	bundle	1 6 to 0 0
Coleworts	dcz. bunches	2 0 to 4 0	Seakale	per basket	0 0 to 0 0
Cucumbers	each	0 3 to 0 6	Shallots	lb.	0 8 to 0 0
Endive	dozen	1 0 to 2 0	Spinach	bushel	2 0 to 4 0
Herbs	bunch	0 2 to 0 0	Tomatoes	lb.	0 4 to 0 0
Leeks	bunch	0 8 to 0 4	Turnips	bunch	0 4 to 0 0



SOME LESSONS OF THE PAST.

HARVEST is over. With the exception of roots the crops are all cleared from the land, and the results of another year's work are before us. Each year bring its peculiar lesson, and now that Michaelmas is here and the farmers' year is ended and begun again, we may well give some thought to our work and its results during the past twelve months. What is our object in doing this? It is to weigh well the cause of success or failure, to see if our plans made last Michaelmas

bear the test of results now; to strive to pick a few golden grains out of the sands of time to add to our treasury of knowledge—knowledge that may be well termed golden, for it has been purchased at the cost of another year taken from the brief span of our lives.

The weather continued fine till late in autumn last year; did we turn the rare opportunity for cleaning the land to full account? Some did, but many a farmer did not, as we know to our cost, for we have recently had to let two farms at reduced rents owing in some degree to the foul condition of the land. Low prices for farm produce press heavily upon us now, but do not let us make bad worse by slovenly farming. Full advantage was taken of the fine autumn to sow green crops for early feeding in spring as well as winter corn; how invaluable were the earliest of those crops in the late spring of this year! Yet how many farmers had no such crops to fall back upon, and what a serious matter the late spring was for them, for the hay crop of 1884 was a light one upon many a farm, especially where pastures were inferior. We recently had an application from a tenant for a reduction of rent because he found hard times press so heavily upon him. Well, his plea was met by a reasonable concession, but we could not accord him unqualified sympathy, for we knew he was a bungler who either through ignorance or carelessness failed to turn his farm to best account, and who was wont to complain of hard times, yet had no thought that it was possible for him to do more for himself than he used to do when Wheat was 50s. or 60s. a quarter, and mutton could be sold by the carcass at 1s. a pound to the butchers. Last April, when we called at his farm, his hayricks were almost finished, his store of roots running low, his cows turned out on bare pasture, his sheep upon the last field of Turnips, and there was no Thousand-headed Kale, Cattle Cabbages, or Rye upon the farm. We feel bound to add that in our opinion such poor practice and practitioners must soon become numbered with the things of the past.

In the application of artificial manure to winter corn the plan we have so frequently recommended of giving a half dressing in the autumn at the time of sowing, and the other half dressing in February, was followed with complete success both for Wheat and winter Oats. The straw was stout and tall, but it was not so at the expense of grain, for it bore fine ears of well-developed corn. When the formula for these dressings was first published exception was taken to it on the score that the quantity of nitrate of soda and nitrate of potash given in it would induce a rampant straw growth with a deficiency of corn; this we are glad to say proved decidedly erroneous, and results justify our strong recommendation of the dressings. By sowing artificial manure upon the grass in February we had a full crop of hay last year notwithstanding the drought, and similar practice this year gave results that were really wonderful, for our hay crop was fully double the bulk of that of last year, and the quality of the hay is excellent. No doubt late spring rain did much for the grass, and the extraordinary crop of hay was a result of favourable weather and judicious culture, nature and art in perfect accord. If only we could always insure such perfect conditions, then should we indeed be able to grapple with our difficulties. At any rate we will keep on trying, doing all we can to improve our culture, avoiding extravagant expenditure, but doing all that is necessary to render and keep the soil fertile. This last point is worthy close attention. Are we to retain our cattle yards, to go on breeding and rearing animals solely for the manufacture of farmyard manure? or is it possible to avoid this slow and costly process by the use of artificial manures? After some five years' careful comparison of them we are bound to say that the manure carts must go, and so, too, must the special mixtures of the manure dealers. We must procure pure artificial manure from a reliable source, mix them ourselves upon the farm, and give close supervision to the time and manner of using them. To do this in the right way a farmer must know all about the soil and its requirements and it is precisely the

man who will set himself to acquire the knowledge that will enable him to master this important step in farming, who will be most likely to overcome other difficulties arising from low prices and foreign competition.

Regarding the soil simply as a medium for conveying food to plants, and not as an animal that will tire and require rest, we have only to take care that it always contains an ample store of sound and wholesome food, known under the comprehensive designation of fertility to insure full crops provided other points of culture receive equal attention. We must know, therefore, what elements of fertility each crop extracts from the soil, and in what proportion, too, if we are to apply manure correctly and economically. But we must not depend entirely upon purchased manures, rather striving to avoid all expenditure of money upon them that we can by growing our own manure in the form of green crops.

(To be continued.)

WORK ON THE HOME FARM.

Trifolium seed under the genial influence of moist warm soil was so quick in germination that the plant is up and growing freely. Rye and winter Oats are sown, ploughing for Wheat goes briskly on, but the rain has much hindered the cleaning of foul land. No opportunity of doing this should be missed, for land cleaned in autumn is at our disposal for early cropping in spring. Left foul till spring it cannot usually be got clean and ready for cropping till May or June. Land drains should be put in hand at once, for the soil is softened sufficiently by rain to render the work easy, and we strongly commend the plan of doing a certain quantity of draining yearly upon all wet land, for wet soil is a serious hindrance to work as well as to the healthy growth of any crop, no matter how heavily it may be manured. Let this be clearly understood, that undrained soil is fettered just as though a foul demon held it in its clutch. Cold, sluggish, and inert plants may live, but they cannot grow freely in it, for not only is the soil cold, but the temperature of the atmosphere close to the surface is lowered by excessive evaporation. Set free the water by drains and how great is the change! Superfluous rain water passes quickly through it, air enters freely, for its pores are open, and it can now receive and absorb the fertilising gases from air and water and become charged with nutriment suitable for plant food. We have been threshing some corn for food, seed, and market. Peas and Barley of good quality bring a remunerative price now. Barley secured in good time is a bright, heavy sample, but late Barley is much discoloured and must be used for home consumption and for grinding. On some exposed land the crops suffered severely from high winds, a considerable proportion of the ears being beaten off, so that we are as yet unable to determine what is our average crop per acre. We have grown Barley this season upon five farms in light, medium, and heavy soil, and it will be interesting and useful to note and compare results later on. Except for home consumption no Wheat will be threshed at present, for we hope still that it will answer to withhold it from market for a few months. The most reliable statement that we have of the Wheat crop of the world shows a probable deficiency of 9,000,000 quarters, and this quantity ought to exercise a healthy influence upon the markets of this country eventually. The nights grow cold and store cattle must be taken in the yards and let run out by day. To expose cattle now to cold wind, early frost, and heavy rain, is to risk a heavy loss, for they cannot sustain exposure to inclement weather with impunity.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				
	Baromet- er at 32a and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
September.										
Sunday	30.124	54.5	62.2	N.	55.3	67.1	46.5	106.3	39.1	0.012
Monday	30.129	57.6	63.4	N.	56.2	65.7	55.3	108.6	50.3	—
Tuesday	30.363	54.6	63.4	S.	55.9	69.6	43.3	103.6	38.6	—
Wednesday ..	30.211	62.3	68.5	S.W.	56.3	67.2	55.2	91.9	43.9	0.131
Thursday	30.116	52.3	48.2	N.W.	56.6	60.7	45.9	95.7	41.6	—
Friday	29.899	47.5	45.8	N.W.	54.3	54.8	40.9	103.4	33.3	—
Saturday	29.918	45.0	40.8	N.	52.4	54.5	36.3	92.5	31.3	—
	30.109	53.4	50.1		55.3	62.8	46.2	100.3	40.9	0.143

REMARKS.

20th.—Fine bright day.
21st.—Rain early; afterwards fine and bright.
22nd.—Fog early; afterwards fine bright to warm.
23rd.—Cloudy morning; wet afternoon and evening.
24th.—Fine and bright.
25th.—Generally fine but cloudy, with a slight shower about noon.
26th.—Fine, bright and cold.

Cooler than the average, and about 5° below the previous week, but drier and brighter.—G. J. SYMONS.



COMING EVENTS

8	TH	Sale of Bulbs at Protheroe's Rooms, Cheapside.
9	F	
10	S	Sale of Bulbs at Stevens' Rooms, Covent Garden.
11	SUN	NINETEENTH SUNDAY AFTER TRINITY.
12	M	
13	TU	Royal Horticultural Society. Fruit and Floral Committees at 11 A.M.
14	W	

YUCCAS, OR PALM LILIES.

THERE are few plants which in bold characteristic beauty can equal these in garden scenery. They are not, however, so frequently seen in gardens of a picturesque character as their merits entitle them to be, and they seem to be forgotten by planters and landscape gardeners. What is more stately or effective when judiciously planted in bold masses? or what is more productive of tropical effect than these Yuccas? Their value as flowering plants also should not be overlooked, for their giant panicles of creamy white bell-shaped flowers contrast most favourably with the various low-lying shrubs and Coniferous plants, which, unfortunately, are only too seldom found bearing them company. One of the finest groups known to me is that in the garden of Bitton Vicarage, which is very handsome, not three or four in formal assemblage. This group is in itself a great feature in Canon Ellacombe's garden, and one which might advantageously be imitated in gardens generally, where diversity of foliage would lend additional charms to the landscape. There are many places in the garden suited to display these to advantage—such, for instance, as on the margins of large shrubberies, in prominent positions on the lawn, or on the summit of a mound, where the pendulous-leaved species may, perhaps, be most useful. The large rock garden also affords positions in which such plants would be perfectly at home, and in the construction a spacious fissure might be left for the purpose. If memory serves me there are some examples of this style of planting on the large rockery of Dr. Latimer Clark of Sydenham Hill, whose garden, it may be remarked, illustrates in a variety of ways the value of judicious selection and planting. Then there are one or two species of smaller dimensions, which are by no means out of place in the small rockery amongst Sedums, Sempervivums, or similar plants.

The genus itself is noted for the somewhat slow growth of all its members, and in many cases it takes years, depending much, however, on the soil and situation, before they make handsome specimens. When once planted they should remain undisturbed, for they are somewhat impatient of much interference at the root. They are increased by seeds or by offsets, which in some species are found rather numerous about the bases of the plants. These should be stripped off with a heel attached, and if examined previously a root or two may be found attached in some cases. They are also increased by "toes," which are the long white fleshy roots which protrude from the main body, that if left alone would ultimately produce suckers. When moving the plants these roots may be detached and placed in boxes of earth in slight warmth, where they will soon commence growth; or in the case of valuable and rare species or varieties they may be cut into several pieces after the manner of the stems of *Dracænas*, and if placed in gentle bottom heat the majority will break into growth.

Some of the Yuccas are among the oldest inhabitants of our gardens, and in the case of the well-known *Yucca gloriosa*

it is now verging on three centuries since its introduction from North America, and notwithstanding this great lapse of time it still remains one of the noblest, adapted either for grouping or isolated positions. Its general aspect is somewhat rigid. It attains large proportions, and is rendered conspicuous by its massive bearing, the flower stems not unfrequently attaining a height of 6 feet or more. The panicles are large, bearing a great number of white flowers. A very distinct variety known as *glaucescens* is equally ornamental in all respects. The leaves are broadly concave, and assume a pleasing glaucous hue. The flower stems are not so tall as in the type. Another variety with narrow leaves is *angustifolia*.

The next useful species for outdoor decoration is *Y. recurva*, a very graceful and exceedingly handsome plant. This grows about 4 feet high, the leaves of which are well recurved. Small plants of this are very serviceable for large vases in the terrace garden or for various similar purposes of decoration. The flowers are arranged in panicles, and are creamy white slightly tinged with red on the outside. It is certainly one of the best and most ornamental of the group. *Y. flaccida* is very distinct and noteworthy, as it forms clumps. It is not unusual to have three or four flower stems annually from one clump, the height being about 2 feet.

Yucca filamentosa and its forms afford a very pleasing variety. The typical plant is an old inhabitant of gardens, and comes from Virginia, height about 3 feet, with creamy flowers. *Y. filamentosa antwerpensis* is a distinct form of the preceding, with long narrow erect glaucous leaves, having only few filaments on the margin, the flowers sulphur tinted with green. The variegated-leaved form of this plant has no equal among hardy plants in the open ground, being perfectly hardy, and when placed among greenhouse plants fills a position of equal prominence. A large bed of this has stood unprotected for several years in the Chilwell Nurseries. It makes an excellent bed, and where sufficient exists it might with advantage be thus employed, filling the spaces with spring-flowering bulbs, such as *Scillas*, *Chionodoxa*, *Dog's-tooth Violets*, *Anemones*, and a group or two of *Liliums*. This *Yucca* succeeds in equal parts of peat and turfy loam, a mixture which will well suit the plants I have named; and such a bed when well established would no doubt be productive of good effect. It may be best to employ coloured *Liliums*. *Colchicums*, too, among autumn bulbs would be very useful in this way.

A noble plant is *Y. Treculeana*, which is of Mexican origin, and allied to *Y. canaliculata*. Its general habit is more erect, with narrower leaves. The flower stem attains a height of 4 feet, and is much branched. These are furnished with long varnished yellow and white flowers with reddish bracts. This is still an uncommon plant in gardens, and is one of the most desirable of this genus. *Y. canaliculata* is still a very fine species, and one whose value must not be underrated; indeed, it is sometimes regarded as synonymous with *Y. Treculeana*, though quite distinct from it. The leaves are long, broad, much concave, and of a dark green margined with red. It is very ornamental. Very distinct and rare is the small-growing *Y. Whipplei*, suited for the rock garden in a good sunny position. The leaves are rather narrow, somewhat tapering, and of a glaucous hue. Not having seen any very large examples of this I am not sure of the height which it usually attains. Nearly related to it is *Y. stricta* from Carolina, which seldom exceeds a foot in height. It also is adapted for association with the one previously named.

In *Y. aloifolia variegata* we have one of the most conspicuous of greenhouse foliage plants, and one equally well suited for sub-tropical arrangements out of doors in summer. All the year round it is attractive. Distinct from all existing forms is its thick Aloe-like leaves, which are somewhat fleshy. Being comparatively hardy it does not require much artificial heat—indeed, it is even more hardy than the type in this

respect. Its thick rigid leaves beautifully variegated, generally white or cream-coloured, though not unfrequently it assumes a bronzy red hue, which renders it unique. Another remarkable species is *Yucca baccata*, the leaves of which are short, stiff, and erect, bordered with broad filaments, and not narrow and wavy as in some species; flowers Tulip-shaped and borne in panicles. There are still many more equally distinct, and in their way equally good, such as *longifolia*, *De Smetiana*, *filifera*, *stenophylla*, *Ghiesbreghtiana*, *albo-spica*, and others. Those noted above, however, will be found most serviceable of this picturesque group.—J. H. E.

INTERNATIONAL POTATO EXHIBITION.

TRIAL CULTURE OF SEEDLING POTATOES, 1885.

By generous permission of the Royal Horticultural Society the seedling Potatoes entered for International Exhibition have, as in former years, been grown at Chiswick under the superintendence of a sub-committee. Mr. A. F. Barron has carried out the views of this sub-committee to their complete satisfaction, and they have made a report which will serve as the basis of action for the Judges at the Exhibition.

The seedlings sent for trial numbered forty-two. They were planted in good time on a well-prepared plot of ground, fully exposed as regards light and air, but having the advantage of shelter sufficient to ward off light spring frosts. They suffered no check from frost, and throughout the season there has not been seen upon the shaws the slightest sign of disease. But the long-continued drought with a frequent low night temperature delayed growth, the early liftings being in many cases insufficiently matured for a sufficient comparison of merits. The later liftings were for the most part satisfactory—rain had improved the crop without causing injurious second growth, but a few sorts were noted as so far promising as to be worth special attention next year.

From the forty-two sorts in the trial four were selected for the highest award in the garden—namely, three marks for heavy cropping and three marks for high table quality. The names of these are:—

Faith (Fenn).—Top growth neat; tubers white, round, neat, uniform, ripening early. One of the best in this trial. Crop three marks, table three marks.

New Fluke (Ironsides).—A white kidney in the style of the old Fluke, but with a finer skin and a bolder form, the tubers being mostly of exhibition standard. Crop heavy, and the quality fine. Crop three marks, table three marks.

General Gordon (Fidler).—A white round in the way of Schoolmaster. Top growth strong, tubers handsome. Crop three marks, table three marks.

The Colonel (Johnson).—A capital white-skinned variety in the style of the old Fluke, rather late, but in every way first-rate. Crop three marks, table three marks.

The following were found to be productive and worthy of commendation for the present, but the awards made were not sufficiently high to bring them within range of certificates in the present season:—

Salisbury (Ironsides), *General Gordon* (Fletcher), *Charity* (Fenn), *Reading Giant* (Fidler), a great cropper; *Bountiful* (Fidler); *Farmer's Pride* (Hill), *Emblem* (Ross), *Snow Queen* (Fidler); *White Beauty* (Ironsides), extra heavy crop; *King of Russets* (Lye), a heavy cropper of good quality in the way of *Adirondack*; *Burton Hall Favourite* (Johnson); *May Queen* (Dean), likely to be especially useful for early produce.

GRAPE "JOHN DOWNIE."

ON reading the report of the Fruit Committee of the Royal Horticultural Society upon the above Grape (page 293), the question that occurred to my mind is, Can there be more than one variety of John Downie in the market?

I am desirous of asking this question, because a gentleman from the north called here the other day, and he assures me that there are two distinct forms of "John Downie" growing at Dalkeith Park. More, when my friend was there it so happened that the raiser of "John Downie" was at Dalkeith also, and had come purposely to see it as grown by Mr. Dunn. The remarkable thing is, that after being shown both Vines and having closely scrutinised the Grapes he expressed his inability to say which was the Simon Pure. Perhaps Mr. Dunn will say if I am correctly informed in this matter.

When "John Downie" was sent out the gentleman in whose honour it was named sent me a Vine with a request that I would give it a trial in a late vinery. This sapling was duly inarched on

to a Lady Downe's Seedling, and at the present time carries four good-sized bunches. In the same house is growing Alnwick Seedling got direct from Mr. P. Bell of Alnwick. On comparing the two together, fruit, leaves, and wood, I can come to no other conclusion than that they are not distinct varieties.

While on this subject I would also like to ask if any Grape growers have ever noticed the similarity that exists between Alnwick Seedling and Trentham Black—the peculiar marbling in the bark when the young shoots are running out, and also the red blotching on the leaves when dying off are very similar. I am of opinion that if these two sorts and "John Downie" were grown side by side they would be found much akin if not identical.

For your inspection I beg herewith to send you samples of all three. Your opinion upon them will be valued by more than—J. MCINDOE.

P.S.—I ought to add that Trentham Black is taken from a Vine started in January, and was ripe in July; the other two are from Vines started in March. I have grown the Trentham Black for nearly twenty years.

[We cannot see any difference between the bunches and foliage of Alnwick Seedling and those of John Downie which have been sent us by Mr. McIndoe, and they both confirm the judgment of the Fruit Committee that the two are identical. We cannot form so decided an opinion of Trentham Black, the berries of which being highly ripened and shrivelled had lost their normal form. The true Trentham Black which we had from Mr. Fleming when he was at Trentham was a distinct Grape from Alnwick Seedling, the bunch being longer and more tapering and very much earlier; in fact it came in about the same time or soon after Black Hamburg, and about the same time as Black Prince. We should like to be informed where and by whom the Grape John Downie was raised.]

HINTS ON PREPARING FOR WINTER.

THE shortening days and cold nights remind us that before October is out preparations for winter must be completed. There are requirements in all departments which should have attention, and it is much better to be a little too early than too late in having half-tender plants under cover, storing crops which are liable to be injured by frost, and providing protection. When the season gets advanced the weather cannot be trusted, and a wet evening may lead to a sharp frosty morning. Greenhouse and conservatory plants of a half-tender character which may have been placed in the open air for the summer will be amongst the first to suffer, and they should be moved in without delay. Where there is no danger from frost the wind must be considered, as the gales we experience now will cut the foliage and do more harm than a few degrees of frost. A plant which is much blown about in the autumn will never prove satisfactory in winter. Place *Cinerarias* and *Primulas* in a frame or house where fire heat can be applied, and *Orange trees* in the greenhouse. The pots or boxes in which the plants are growing should be washed outside before they are placed in their winter quarters. Plants which have been exposed to the autumn rains will not have many insects, but where any do exist sponge or syringe them off.

All greenhouse plants which have been put out in borders during the summer may be lifted and potted at once. Pot the bulbs desired to flower from the end of November until March. Stake *Chrysanthemums* firmly and neatly, and take them into an unheated house. Where the plants are trained the final tying must be done. If abundance of flowers are wanted do not thin off any of the buds. Where specimen blooms are desired only allow one bud to remain on the top of each shoot, but we prefer the clusters of flowers in winter. Autumn-rooted cuttings of *Pelargoniums* can be put into frames. *Heaths*, which are always benefited by a sojourn in the open air in autumn, should be left out no longer.

A general cleaning of plant houses must take place. Weakly plants, which may dwindle on all winter and die in spring, had better be thrown away at once. We have many old *Pelargonium* plants which have been blooming profusely since May, but they are almost over now. We also have spring-rooted cuttings of all of them just coming into flower, so instead of keeping the old ones for the sake of the few flowers we might obtain from them we shall throw them away and give up the space to the young ones. *Tuberous Begonias*, *Gloxinias*, and *Caladiums* need not be kept in the best quarters now. They must not, however, be placed in a cold place, as this would cause them to decay. A warm corner will suit them, and they may be stood close together, as plenty of room can be given to the plants which are developing. As soon as the leaves have decayed shake out the plants and store them in leaf soil or sand in boxes or casks, and keep them in a dry place during the winter. Clear off all dead leaves from plants at this time. Cleanliness of the foliage and sweetness of the atmosphere are important

aids to the successful culture of all plants in winter. Shading is generally very beneficial in summer, but it is injurious in late autumn and winter. Remove every particle of it from the glass now.

The weather is not very suitable for repairing and painting in October, but leakages are productive of much evil and must be stopped. Fireplaces, pipes, and boilers must be in the best of working order. Flues may not have been used since last spring. They are seldom cleaned when done with, and it is not until a frosty night comes and someone goes to light a fire that it is discovered that the smoke channel is full of soot and leaking. The flue ought to be cleaned out from end to end before frost comes, a fire put on, and the joints tested, any damage repaired, and the whole dried before it is really wanted.

Few plants require so much water at the root or in the atmosphere in winter as during the longer days, and the gradual withholding of it should begin at once. We find our Pine Apple plants in houses rather deficient of heat keep very much fresher on the dry side than when too moist, and often our finest successional plants do not receive any water from a can or syringe from October until February. Many are astonished that our Orange trees, &c., keep so green in an unheated house during the winter, but we attribute this to careful watering. Prepare winter protectors. If the mats are worn buy new ones, but do not use them just as they come to hand, but tie the ends neatly, and they will last as long again. If straw is scarce save the best of it which is thrown out from the stable, dry it, and store it away for use. Wild Fern or bracken is very useful. Wherever it can be conveniently had cut it largely and stack it. It may be used for throwing over glass lights in the time of severe frost. It ought to be cut before it begins to wither, as when too far advanced much of it crumbles away, and nothing but the stems remain.

Store herbs and roots in quantity. Parsley is as good for flavouring in a dried state as when green, and as much of it dies off in cold weather gather and dry it largely. Onions should be dried and cleaned in a cool airy shed, and then stored in a dry room. Carrots and Beetroot may both be drawn, put into an open shed for a few days to dry, then store under ashes or sand in a cool shed or cellar. If Turnips are not likely to remain good much longer store them in a heap under cover. The Swedish and the yellow Turnips will bear some frost, but the white and purple sorts may become pulpy if left out. Parsnips are very hardy, and need only be stored to last over a period of severe frost. Clear away all dead leaves from winter greens, such as Cauliflower, Broccoli, Brussels Sprouts, &c. Some may think that dead leaves will afford protection, but they more often cause decay, and are unhealthy. Fruit trees do not need any special preparation for winter. Well-ripened wood will enable them to pass through the most severe weather without injury. Keep Vines, especially those on which fruit is hanging, free from decaying leaves and berries. Atmospheric moisture must be avoided and frost excluded.—A KITCHEN GARDENER.

THE PRIMULA.

(Continued from page 270.)

P. AURICULATA, Lam.—Although an extremely free-growing and profuse-flowering species, this is unfortunately rarely met with in gardens; and where we do find the name it is generally represented by *P. luteola*, a plant entirely different in all its characters. *P. auriculata* is nearly allied to *P. farinosa*, and this may account in a measure for its being sometimes called *P. megellanica*, *Duby*, which is a synonym of *P. farinosa*. The present plant (fig. 49) is, however, quite free from powder, the under side of the leaves being the same as the upper, quite green. They are as long again as *P. farinosa*, broader, and more erect. It grows from a few inches to a foot in height, with a clean stout scape, carrying a large head of closely packed flowers, varying from bright rose to rose and lilac-tinted, as large as a sixpence; leaves slightly denticulate, broad lance-shaped, bright shiny green, and with a prominent whitish midrib showing its whole length. It requires a shady cool place, on the rocky north-western aspect preferred, where it flowers freely and proves perfectly hardy. A variety called *rubra* has been lately introduced by Max Leichtlin of Baden-Baden, which promises to be a great acquisition. They are readily increased by the offsets or by seed. Native of Caucasian Alps, Olympia, Bithynia, &c. Syn., *P. longifolia*, *Curt. Bot. Mag.*

P. BALBISII, *Lehm.*—There seem to be two forms in cultivation, nearly allied to *P. Auricula*, and of which the type is considered a variety by many botanists. From experience in cultivating the plant I am inclined to keep up the separate specific name, as it differs widely from *P. Auricula* in a garden sense, and in a living state, whatever it may appear on comparison of dried specimens.

It will be found a more difficult plant to cultivate than *P. Auricula*, and great attention must be given to it during the winter, as it is liable to damp off when over-supplied with water. It is at the same time very impatient of drought. The compost I employ consists of three parts limestone, the other part being a mixture of loam and finely chopped sphagnum. It forms a thick fleshy root-stock, and care must be taken in wedging the stones round the collar not to injure it. Plenty of water is required during the growing season, but at other times must be kept rather dry. The plant seems to like a half-shady position, a west aspect being preferable. Although not often met with in the Alps, though not by any means rare, it is also found in Styria, and also between there and Indicien. Obrist says it grows in Indicien in the very deep regions, though not very plentifully. In habit it resembles *P. Auricula*. The leaves are, however, smaller and rounder on the cultivated plants. The glossy foliage is also a distinguishing feature, as well as their leaves being quite free from meal dust, which is one of the characters of the other. The flowers are large, shining golden yellow, with a hairy throat, and having no perfume. It is one of the rare plants of the Baldo, Villarsa, and the Alps of



Fig. 49.—*Primula auriculata*, Lam.

Southern Tyrol. It flowers May and June. Syn., *P. ciliata*, *Morretti*, non *Shrank*; *P. Auricula* var., *Spr.* *P. Balbisii* seems to be the one extreme, *P. Auricula* the other, with *P. similis*, *Stein*, and *P. Obristi*, *Stein*, intervening; crosses between the two, the one sub and the other super-*Balbisii* × *Auricula* of *Stein* in both cases.

P. BELLUNENSIS, *Venzo*.—One of the most recently introduced of the new Primulas from the neighbourhood of Belluno, a large town in the government of Venice. It is said to be a distinct species, which I doubt very much, as it has a near affinity to *P. Balbisii* and others, and more likely to be a cross between that and some other species, perhaps *P. Auricula* with super-*Balbisii*. It has flowered with us, however, and there cannot be a question about its value as a garden plant. When thoroughly established it is of freer growth than *P. Balbisii*, although having much of the habit of that plant. It differs in having longer and more oval-shaped leaves, showing the veins more prominently; the margins are deeply and evenly indented, rough, and densely ciliated, the winged petioles being about as long as the blade of the leaf. Flowers larger than a shilling, well formed, of a handsome golden yellow colour, and often with a slightly frosted throat. The compost used is the same as that recommended for *P. Balbisii*, with the addition of finely powdered mussel shells. Flowers during May. A fine rocky plant where it can be kept comparatively dry during winter.

P. BERNINÆ, *A. Kern*.—A hybrid between *P. hirsuta* × *viscosa*, *A. Kern*; *P. graveolenti* × *villosa*, *Obrist*. The plant as yet is small, and I have not been able to judge of its merits, not having seen flowers. According, however, to Mr. Stein, who saw it at Stendner's place at Munich, it is very fine. The leaves are much smaller than *P. viscosa*, slightly crenated edges, and covered with small glandular hairs, almost as broad at the base where it sheathes the stem as in the middle of the blade. We grow it in free sandy soil wedged between pieces of limestone. It is healthy and vigorous.

P. BIFLORA, *Huter*. (*P. Floerkeana* × *minima*, *A. Kern*).—A rare little gem among Primroses, surpassing our little *P. minima*, to which it is nearly allied. The leaves are, however, larger, more sheathing at the base, and more distinctly serrated. The flowers are large, in pairs on the short stem, deep rose, and extremely handsome, covering the whole plant, which is seldom more than an inch or so high. It inhabits about the same locality as *P. minima*, and flowers at the same time. It thrives well on limestone, with plenty of water during the growing season.

P. BOVEANA, *Decaisne*.—The Abyssinian or Whorl-flowered Primrose belongs to a comparatively limited group, comprising among others, and perhaps best represented in gardens generally by the well-known *P. japonica*. It is nearly allied to *P. verticillata*, and according to Jaubert and Spach it is the plant that does duty for the latter-named Primrose, which, says Stein, is not in cultivation in gardens at all at the present time. The plant named *P. verticillata* var. *simensis* by Dr. Masters, which was introduced some years ago by Messrs. Veitch of Chelsea under the provisional name of *P. Courti*, I consider perfectly distinct from *P. Boveana*, although Stein has included it in his synonymy of that species, which is quite distinct from Richards' *P. Boveana* in the "Abyss. Flora," ii., 15, the latter being the same as the var. *simensis*, *Mast*. It has a much nearer affinity to *P. verticillata* than to *P. Boveana*, much larger flowers than the latter, and is altogether a more important garden plant.

Of *P. Boveana* the leaves are nearly erect, broad spatulate, with winged petioles. The margins are incised, and these again are minutely serrated. The stalks are erect, from 6 inches to a foot in height, carrying from three to five whorls, with about a dozen or more flowers in each, pale soft yellow and slightly perfumed. The most characteristic mark in this species is its sharply serrated calyx segments, which are about half the length of the corolla tube. The whole plant is powdery or mealy. Unless in extremely favoured localities this plant will not stand out of doors in this country during severe winters, and even in cold frames it often succumbs to the damp close atmosphere consequent on the lights being closed. It may be safely carried through mild winters outside, however, where it can be kept perfectly dry and free from stagnant moisture. It flowers from March until June, and may be readily increased from seed, which it ripens freely. Native of Mount Sinai, &c., and is reported to be found growing near the spot where Moses struck the rock for water. Syn., *P. verticillata*, *Bot. Mag.*, t. 2842. First introduced from Berlin about the year 1825.

P. CALYCINA, *Duby*.—This belongs to and may be taken as fairly typical of the section *Arthritica*, including *P. spectabilis* and others remarkable for their perfectly smooth glossy foliage. *P. calycina* (fig. 50) has been long known in gardens, where it is often confounded with *P. Wulfeniana*, a totally different plant, and from which it is easily distinguished, even without the aid of flowers, by its longer and very irregularly margined leaves. It grows readily enough on the rockery in almost any position, but unless in exposed situations is rather a shy flowerer, and I can only manage to flower it by giving it a good roasting during the summer months, meanwhile supplying water very sparingly. It seems to prefer being wedged between hard pieces of granite in a rich stiffish soil. It forms rosettes of long ovate-lanceolate leaves, of a half-weathered green colour, perfectly glabrous and shining, with a curiously wavy margin. Flowers large, of a beautiful clear lilac, generally three or four together on short stalks, at the base of which are long linear bracts. Calyx about an inch long, with narrow bluntish sepals. It is a native of the southern Alps, flowering with us in May and June. Syn., *P. glaucescens*, *Morett*; *P. lævigata*, *Duby*; *P. integrifolia*, *Wulf*.

P. CAPITATA, *Royle*.—The Round-headed Mealy Primrose is perhaps the finest of this section, and closely allied to the better known *P. denticulata*. It was first introduced to cultivation by Sir J. D. Hooker, who found it growing on gravelly banks at Lachen, Sikkim Himalaya, at an elevation of 10,000 feet above sea level. It has also been found common in the Hariab district in boggy and spongy meadow ground that is watered by springs at elevations of 8000 feet. Although a true perennial in its native habitats it can hardly be regarded as such in our gardens; for although a few will continue to flower the second, and even the third year, this is excep-

tional, and the majority of them die after having flowered once. It ripens seeds fairly well in good seasons, and a succession may be had in this way; but if the seedlings are raised in pots it is always safest to plant them out as soon as they are ready to handle, as their chance is greater than when kept in pots or boxes. Even when planted out I consider it lucky to have safely wintered half the plants in the south of England. A north exposure should be chosen, shady but open, and employ a mixture of rich loam and peat in about equal proportions. In dry weather they should be kept well watered; indeed they should never be allowed to get dry at the root, and as much care as possible must be taken to keep the water off the leaves. The seed may be sown as soon as ripe in the autumn, or kept until spring. The latter we think the safest, as the plants gain strength enough to carry them through the winter without showing flower until the second year, unless the situation be too hot.

P. capitata grows about a foot high, each plant bearing two or more scapes, and each carrying a large globular head of flowers not unlike a Sea Pink or an Allium. The flowers are sessile, closely packed together, deep purple, set off to the best advantage by the mealy dust that covers the whole plant. The leaves are radical,



Fig. 50.—*Primula calycina*, *Duby*.

about 6 inches long, oblong lanceolate, rugose, with sharply serrated margins. From seedlings two good varieties have been lately introduced under the names of *cœrulea* and *atroviolacea*, the latter being by far the best colour we have ever seen. Another called *grandiflora* seems to be a hybrid. It has distinct leaves, and improves on the type in the size of its flowers. They flower about June.

P. CARNIOLICA, *Jacq*.—About this very little seems to be known in gardens, although its merits are such as to entitle it to a first place amongst hardy alpine. It also has the advantage of growing with remarkable freedom on the rockery, where it can get a dry bottom and plenty of sunshine. It will do well in an almost perpendicular position, with just sufficient soil to cover its roots. The large loose rosettes of leaves are very pretty during summer. They are about 2 inches long, ovate lanceolate, but again broadening where they clasp the stem, perfectly glabrous, and shining as if varnished on the upper surface; sub-repand, not cartilaginous at the edges. Flower stalk about 3 or 4 inches in height, carrying from three to eight flowers about an inch in diameter, pale or deep lilac, with a silvery white centre. Though thin-textured they last a considerable time in beauty, the contrast against the pale greenish foliage being very striking. It flowers May and June, and is a native of the Alps of Carinthia and Carniola. Syn., *P. integrifolia*, *Scop*; *P. Freyeri*, *Hladn*; *P. Jellenkiana*, *Frey*; *P. grandiflora*,

Bast. There are varieties named multiflora and multiceps, the latter being in cultivation.—D.

(To be continued.)

THOUGHTS ON CURRENT TOPICS.

To all readers and writers who have been good enough to make inquiries concerning me I make my bow, and step to the front once more. I am credited with having enjoyed a "long vacation," certainly a novelty to a gardener; rather let me say I interpreted the editorial note on page 135 (August 16th), that "sufficient had been said at present" on a subject then under discussion, as a hint that I should "take a rest," and I took one, and here let me say I am so averse to being obtrusive that if I had not been invited to do otherwise some "thoughts" would have been kept to myself that will now be made public for what they are worth.

THE subject of the cracking or splitting of Grapes was a very prominent topic when the editorial curb was put on. I do not say it was not prudent to "draw the rein," it probably was. When Galileo was compelled to make his historical recantation as to the movement of the earth, and was impelled to say it did not revolve round the sun, he did so to "save his neck," but in an undertone to his friends he committed his real convictions—"but it does." So in the case of the rupturing of certain Grapes, my belief remains the same, that the evil is mainly in the atmosphere—an excess of moisture, which passes through the skins, and not primarily at the roots. There, the die is cast, and my opponents can hang me—metaphorically—if they like, as the Grapes will split all the same if an opportunity is afforded them by too much moisture in the air of the house.

OF what shall I "think" next? It shall be on the subject suggested—gardeners' vacations. These are necessary in moderation, instructive, or ought to be, and profitable alike to master and man. It is one thing for a gardener to desire to indulge in gadding about from place to place without any particular matter of duty calling him from home, but quite another thing for a man to have no relaxation from absorbing and often laborious work from year's end to year's end. I am able to speak with authority on this matter, having had to work for five years without a holiday, and often during that time swinging the scythe at three o'clock in the morning, and watering plants at nine o'clock at night, or eighteen hours, and no pay for "overtime." That was in the "good old times;" but the work, though hard, was done cheerfully, as it ought to be, or let alone, and the term of incessant labour won confidence, when freedom followed. This certainly would not have been continued if the wage-payer found his garden degenerated or his interests suffered. He found just the reverse, and so far "improved" as to defray my expenses at least once a year to any part of the country where I could gain knowledge for investing in his property.

THERE are numbers of hardworking gardeners and faithful servants who have well earned a few days' holiday, and must still go plodding on because those whom they serve do not think—for it is nothing but want of thought in many cases—to afford them an opportunity of "gettin' away" for a little time for rest and instructive recreation. But let it be remembered that no man has a right to expect such encouragement until he has proved his worth by his zeal and ability.

AT no period of the year can gardens be left with more confidence that nothing will suffer than during the present month. Propagating is completed, plants are made safe for the winter, fruit is gathered. On the 21st the great Pear Congress opens at Chiswick, and the Editor has been good enough to suggest the occasion opportune for the acquirement of knowledge by gardeners on the most important of all hardy dessert fruits. Railway excursions are numerous, travelling cheap, and once in London the collections can be seen every day for sixpence, and then the great Inventions Exhibition, with the brilliant evening fête for a shilling, except on Wednesdays. Let me venture a word respectfully to all who have worthy gardeners in their service to encourage them, so far as can conveniently be done, to lay down the shovel and the hoe for a few days and share in that which will benefit them without anyone or anything being the worse, but on the contrary the probability, amounting almost to a certainty, that all will be the better in the end.

ONE of the most prominent topics under discussion in the Journal during the past month has been the judging of fruit. I think all must recognise the thought and labour that have been

devoted to this subject by Mr. W. Wilkinson in the preparation of the exhaustive paper that was read by him at Dundee and published in the issues of the 10th and 17th ult. When I read that production, for which a vote of thanks is due, I had an impression that it would evoke little or no discussion, because of its being too elaborate. Good the plan may be in determining the relative merits of competing dishes, but I suspect there is not one collection of fruit staged out of twenty where really competent judges would find such a system of judging necessary; and to adopt it through the classes would be so tedious that the work would not be completed in anything like the time at disposal.

I AM inclined to think that by far the greater number of mistakes that occur in awarding prizes are traceable to three primary causes—1, Indefiniteness in the conditions or description of classes in schedules. 2, Late staging and, consequently, want of time for close and careful examination of the products staged. 3, Inexperienced judges—that is, persons not having special knowledge of the exhibits in the classes to which they are appointed. Some men are selected because they have a "friend in camp;" others because they reside near and are regarded as cheap. Local judges, however honest they may be, are accused, often unjustly, of favouritism at local shows; and "cheap" judges are often ruinously dear in the end, for horticultural societies soon lose character and degenerate if exhibitors have not confidence in the adjudicators. "Judges should receive no pay for their work" says Mr. Williamson; in that case the best of them cannot be had, for men of wide repute are retained for months in advance—in some instances a year—and the alternative appears to be that instead of the "great unpaid" we should have the little unpaid, and it is doubtful if this would be a decided advantage. In this, as in other matters, I think the rule holds good that "the labourer is worthy of his hire."

IN more than half the classes at exhibitions judging by points is needless, and would be a positive waste of time; in very close competition it is essential, and in no other way can the merits of the products be ascertained with exactitude. Two or three men can quickly decide on a standard of merit, jot down the "points" accordingly, and make an addition sum on the back of a schedule. To enter their "remarks" on cards would waste precious time with no corresponding advantage, for if the observations were not published, of what use would they be? While if they were published they would form lengthy texts for ten times more wrangling and disputations than are prevalent now, and there is quite enough of "that sort of thing" to satisfy the most hypercritical, especially when, as a rule, the most noise is made by the most ignorant. Given, then, clear conditions, a reasonable amount of time, good men, and judging can presumably be accomplished with less ceremony than your able correspondent advocates, and well-founded causes of complaint will be reduced to a minimum. As it seems a pity the comprehensive paper alluded to should not have the honour of criticism, I have ventured to "set the ball a rolling."

RELATIVE to the controversy on awarding prizes for Grapes at exhibitions, the whole question turns on the purpose for which the objects are staged. In most cases this purpose is to make an imposing display that will attract the public and bring "gate money." This being so, as I think it is, late varieties of Grapes cannot be excluded from summer shows. If they were the exhibitions would be meagre in an important department, and not only would general visitors be dissatisfied, but even gardeners would be disappointed.

WELL-GROWN and coloured bunches of Alicante, Mrs. Pince, Gros Colman, Gros Maroc, Alnwick Seedling, and Gros Guillaume, at what are termed summer shows, or shows held before the month of October, though the quality of the fruit may not be developed excellence of culture is nevertheless displayed; the examples, consequently, are both interesting and instructive to numbers of gardeners who would not see them at any other time, and therefore deprived of recognising how far they are behind and what they have to strive for in the production of first-rate Grapes. For these reasons it is very questionable if it would be prudent to encourage no other "black varieties" than Black Hamburgh and Madresfield Court even in August. It is also questionable in my opinion if the second condition proposed that "all Grapes shown must be in season," were unreservedly applied that the effect of it would meet with anything like general approbation.

THOUGH I am thus far at issue with Mr. Iggulden and his supporters, I do not despair of bringing myself in harmony with

them. At any rate, I will suggest a compromise for their consideration. It is not practicable to give prizes for the best examples of different varieties of Grapes at all shows, and at most of them held in summer the usual classes for Black Hamburgs and "any other black variety" will have to suffice but where the finances permit it is very desirable to have a class for encouraging the better and more extended culture of Madresfield Court. Now, why is the Black Hamburg taken as the type of black summer Grapes? Obviously because it is "in season." Should not, then, other varieties that are associated with it and placed in competition in the orthodox classes be "in season" too? That, to my mind, seems both logical and reasonable, and I would have a note appended in the schedule that the prizes in these classes should be awarded for "appearance and quality." If the Alicante, Gros Colman, or any other in those respects excel let them have the prize, not otherwise. It is true there may be a clashing of virtues, for bunches of Alicante may excel in appearance, Madresfield Court in quality. What then? Let experienced cultivators and competent judges determine which they would prize the most if they had grown them, and which they would choose for a high-class dessert, and there would be so few mistakes that grumblers could be ignored.

Now to the Grapes not "in season." These should, indeed must, be included in the classes for four, six, or more varieties, and be in appearance fit for table, a note being inserted in the schedule that the prizes in these classes be awarded for "excellence of culture." Growers having these Grapes in presentable condition previous to October could then stage them, have the recognition they deserve, while the best possible displays of Grapes would be provided for inspection and instruction. This is one way out of an admitted difficulty; but the better way, as above suggested, would be to have classes both for the Black Hamburg and Madresfield Court, then another for "any other variety." At numbers of shows this could be done, and this fine summer Grape is deserving of encouragement. At present, quality is often swamped by size, according to the peculiar fancies of persons appointed as judges, and the absence of any instruction in schedules to guide them in awarding the prizes. For instance, a gardener staging Madresfield Court in a "variety class" would vote for Mr. 'ggulden as a judge, but if exhibiting Alicante he would hold up his hand for "A Kitchen Gardener." Good prizes should be offered for late Grapes at winter and spring shows.

THE active gardener last mentioned and Mr. J. Muir appear to estimate the merits of what is grown on diametrically opposite principles. Because we are "accustomed to hear Stephanotis and Gardenias praised so much" and they are grown so extensively, Mr. Muir would discard those plants; or rather their popularity is not regarded by him as sufficient evidence of merit, and he is disposed to throw them away. "A Kitchen Gardener" reasons otherwise in respect of Alicante Grape, and submits that because it is so extensively grown as to be everybody's Grape it must of necessity be good, and he accordingly advocates its culture. In one case the "public instinct" is trusted for giving a sound verdict, in the other it is not. Which is right is more than can be said by—A THINKER.

PEARS AND GRAPES CRACKING.

So much has been said in the Journal on the cracking of fruit, that it has induced me to try and find out the cause of the evil. Having a fine crop of Van Mons Léon Leclerc Pear, and knowing how subject it is to crack, made me keep a close watch on the tree. Every Pear was sound on the 23rd of this month; the three following days we had heavy showers, and my fine Pears went wrong. Out of 4 stone gathered from the tree I could only pick 1 stone of sound fruit, all the rest being cracked. All the damage was done to the Pears in six days. I believe that if I had gathered these Pears before they were quite ready or before this rain, I should have kept them all sound. The question is, What caused them to crack? Was it caused by the overflow of the sap from the roots owing to the rains, or was it caused by the sun's rays coming in contact with the Pears before they got dry? My opinion is that these are the two causes of the Pears cracking. First the overflow of sap from the root, second the surface of the Pear being rough holds the wet, which softens the skin, and cracking ensues; but why should this Pear crack more than others?

It is the same with Grapes, only we have not the same excuse because we have vineries, and Grapes crack just when they begin to colour, we have to give some reason for it. This is not so with the Pear and other fruit which is grown outside, as

owners of gardens, as a rule, will pass the cracking of this as a natural cause, but not so with the Grapes. In one of my vineries I have Alicante, Black Hamburg, and Foster's Seedling. The latter is the only one that has ever shown any signs of cracking, and it is worse this year than previously. To prevent this going very far I put a gentle fire on with plenty of air night and day. I found this answered very well, so much so that a gentleman from one of our largest estates in West Norfolk said he never saw anything like them before, and by taking a drive round to several places myself I find that where Foster's Seedling is grown with other Grapes there is the one fault of cracking. Why should this Grape crack so much while the black Grapes give no signs of cracking? Is it because the skin is so fine that it cannot resist the flow of sap which appears to be supplied in extra quantity just when the fruit begins to ripen? or is it from letting the moisture settle on the berries through not ventilating early enough in the morning? If this is the case, which I believe it is, why should it not be the same with the Pear? It seems to me that the cracking arises from the same causes, only the gardener is held responsible for the Grapes, while the Pear is passed with little notice.—J. W., *The Elms*.

[The Grapes accompanying this communication were good, but much crushed by the Pears. The Pears were also fine fruit, but the cracks in them have not been caused by the sun shining on the fruit when wet, because the fissures are on the shaded side, just where the fruit thickens and where the moisture remains the longest. This is a delicate-skinned Pear. It appears that fire heat and a free circulation of air checked the cracking of the Grapes, and perhaps if the air had been dried sooner the evil would have been averted. There is the same difference in the texture of the skins of Grapes as in those of other kinds of fruits. We know a garden in which the soil is very sandy and dry, and Pears grown in it can only be prevented from cracking by copious applications of water and thick mulchings of manure to check evaporation and keep the roots moist. Without this assistance the fruit cracks so seriously as to spoil the crop. In this case, dry and poor soil appears to be cause of the evil; but we are not prepared to say that a great influx of sap caused by heavy rains is not a predisposing cause of Grapes cracking, though we apprehend more danger from a damp atmosphere at a critical time. Delicate-skinned Grapes on Vines in pots stood on hot-water pipes and the roots kept purposely dry have cracked seriously through the effects of atmospheric moisture and syringing.]



PROPOSED INTERNATIONAL HORTICULTURAL SHOW IN 1887.—A Meeting of the Council and Committees of the Royal Horticultural Society is summoned for October 13th with a view of ascertaining the possibility of holding an International Show in 1887.

— THE first meeting of the FLORAL COMMITTEE OF THE NATIONAL CHRYSANTHEMUM SOCIETY will be held at the Royal Aquarium, Westminster, in the Organ Gallery, on Wednesday, Oct. 14th, at 2.30 P.M. precisely, when new or rare Chrysanthemums or other subjects may be submitted. Certificates will be awarded according to merit. Exhibitors can obtain admission to these meetings by signing the attendance book at the staff entrance of the Royal Aquarium (next to the theatre). Exhibits should be staged not later than 2.15 P.M. Parcels (carriage paid) may be directed to Mr. William Holmes, Honorary Secretary, care of F. Cates, Esq., Royal Aquarium, Westminster. Exhibitors need not be members of the Society.

— MR. GEORGE BUNYARD of Maidstone has sent us specimens of TRIOMPHE DE VIENNE PEAR. They are large handsome fruits, some of them upwards of 4 inches in length. It is a deliciously flavoured Pear when caught at the right time, for it is one of those varieties that decay treacherously at the core while the surface is sound. We have also received specimens of that beautiful and valuable Apple Lady Sudeley.

— "W. D." writes:—"In reply to your correspondent's inquiry about MIGNONETTE MACHET in last week's Journal, I may say that it is a new variety which I received from Germany in the spring, and I regard

it as a very fine variety, of close-growing robust habit but short stature with dense large spikes of flowers with brightly coloured stamens, and most fragrant. It is a great acquisition, and a thorough pot Mignonette. Out of doors the plants should be a few inches apart. This, Golden Queen, and Miles' Spiral, are three first-class Mignonettes."

— A FINE AUTUMN FLOWER BED.—One of the most effective October flower beds that has perhaps ever been seen is in beauty now in the grounds of Hampton Court Palace. It consists simply of a mass of Madame Desgrange Chrysanthemum handed with Aster Amellus hessarabicus. The bed is 25 yards long and 5 yards wide, and except the margin is a fleecy clou, like a mass of creamy white flowers, so numerous as to appear as if piled in heaps. The plants are about 4 feet high, and the Aster edging about 18 inches high and broad. The thousands of deep lilac flowers of this, one of the most attractive of the Michaelmas Daisies, are displayed to the greatest advantage in contrast with the mass of white in the centre of the bed; in fact, one plant enhances the beauty of the other. Both these are hardy autumn-flowering plants of the first merit, and should be grown in quantity wherever an effective mass is desired at this season, and where flowers for cutting are in great request during the shooting season, after Dahlias have been cut by frost, and before the late October and November Chrysanthemums are plentiful. The bed in question has been in beauty for about a fortnight, and will last far into the present month. It is well worthy of inspection, and most persons who see it will determine to grow the two easily managed plants referred to, at least those will who have gardens and wish to have armfuls of flowers at this late period of the year.

— MR. A. HARDING writes from Orton:—"Two LARGE POTATOES were shown me by a cottager last week of the variety White Elephant that he dug in his garden. I never saw any so large. The two I put in the scales were over 6 lbs., the largest 3 lbs. 5 ozs. They looked like ninpins. He states that he has had several which weighed 2½ lbs. each."

— "SOLANUM" observes: "In my notice of the HAREFIELD GROVE COLLECTION OF TOMATOES last week, page 290, the Harefield Grove Red was described as highly corrugated. It should have been slightly corrugated."

— WE find we were in error when we stated, on page 272, that the young shoots of GRAND DUKE PLUM are downy. We have received specimens from Mr. Rivers, and find that they are smooth.

— IN Cheshire the gathering of BLACKBERRIES for Liverpool and Manchester markets now provides profitable occupation for the country people. Enormous quantities are being sent away. A mother and three children will earn 10s. and 12s. weekly Blackberry picking. Dealers from Manchester attend and give 1d. and 1½d. per lb.

— AN association for the PROTECTION OF WILD PLANTS has been started at Geneva. The object is to preserve alpine rarities from the extermination with which the annually increasing number of hotanists, collectors, and mountaineering tourists generally is said to manace them. The projectors of the association announce that they are going to cultivate the flowers of the Alps in nurseries, and sell them at such low rates that it will not be worth anyone's while to dig up the wild plants.

— AT the recent meeting of the British Association in Aberdeen, Professor Gilbert, LL.D., F.R.S., contributed a NOTE ON THE CONDITIONS OF THE DEVELOPMENT AND OF THE ACTIVITY OF CHLOROPHYLL. This gave an account of some experiments made in conjunction with Dr. W. J. Russell, which show a close connection to exist between the formation of chlorophyll and the amount of nitrogen assimilated by plants; the amount of carbon assimilated is not, however, in proportion to the chlorophyll formed, unless a sufficiency of mineral substances required by the plants is available. In cases where both nitrogenous and mineral manures were applied a lower proportion of nitrogen assimilated and chlorophyll formed over a given area was observed, which is no doubt due to the greater assimilation of carbon and consequent greater formation of non-nitrogenous substances, although the amounts of nitrogen assimilated and chlorophyll formed were as great, if not greater.

— MR. JAS. CARRUTHERS, Gardener, Hillwood Gardens, Corstorphine sends us a few blooms of EARLY-FLOWERING CHRYSANTHEMUMS, and remarks "that he disbudded a few plants of Madame Desgrange to twenty flowers, and they average about 6 inches across. The yellow

sport is equally free. Mrs. Cullingford is, I think, one of the most useful Chrysanthemums grown." The blooms of Madame Desgrange were as fine as good examples of Elaine. La Vierge was also compact and pure white, Mrs. Cullingford being rather smaller but very handsome. The Golden Madame Desgrange was of charming colour and good substance. The bright rosy purple-tinted variety, Aureole, was represented by two beautiful blooms.

— MR JOHN C. MONTGOMERIE has recently been awarded a gold medal at the London International Exhibition for a collection of the excellent "TAM O' SHANTER" HONES we have previously noted in these columns.

— IT is said that a number of women and girls are now employed in France in GRAFTING FRENCH VINES ON AMERICAN STOCKS, and that a woman can graft as many as 300 Vines a day in the spring months. Some men are also engaged in the work, and these graft 600 or more in a day.

— THE Commissioners of Her Majesty's Works and Public Buildings intend to distribute this autumn, as usual, among the working classes and the poor inhabitants of London the SURPLUS BEDDING-OUT PLANTS in Battersea, Hyde, the Regent's and Victoria Parks, the Royal Gardens, Kew, and the pleasure gardens, Hampton Court. If the clergy, school committees, and others interested will make application to the superintendent of the park nearest to their respective parishes, or to the Director of the Royal Gardens, Kew, or to the Superintendent of Hampton Court Gardens, in the cases of persons residing in those neighbourhoods, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution.

— MR. J. MALLENDER sends his monthly SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOK PRIORITY, WORKSOP, NOTTS, for September, 1885:—Mean temperature of the month, 53.5°; maximum on the 15th, 73.0°; minimum on the 26th, 28.7°; maximum in the sun on the 5th, 124.3°; minimum on the grass 26th, 22.9°. Warmest day the 15th, mean temperature 62.4°; coldest day the 26th, mean temperature 40.8°. Mean temperature of the air at 9 A.M., 54.5°; mean temperature of the soil 1 foot deep, 54.9°. Nights below 32° in shade, one; on grass, four. Total duration of sunshine 150 hours, or 40 per cent. of possible duration. We had two sunless days. Total rainfall 1.77 inch. Maximum fall in twenty-four hours 0.22 inch. Rain fell on nineteen days. Wind mostly from S.W. to N.W. points; average velocity 10.2 miles per hour. Exceeded 400 miles on four days, fell short of 100 miles on three days. It has been a cold, bright, and showery month; temperature lower than seven out of the last nine years, while the minimum on the 26th is the lowest yet recorded. Rainfall less than the average, but a good many showery days.

— AT the recent Antwerp Exhibition Messrs. Rawlings Bros. were awarded, by acclamation, the GOLD MEDAL FOR FIFTY DAHLIAS, and the silver medal for twenty-five Dahlias. Mr. J. West, gardener to W. Keith, Esq., Brentwood, was also awarded the first prize for twenty-five Dahlias.

— MR. WILLIAM HUGHES, who is CELEBRATED AS A FRUIT PAINTER, has gathered together a collection of his works in the Burlington Gallery, Old Bond Street, to show the public that he is quite as much at home in landscapes and other subjects as in the department of art with which his name is more familiarly associated. The fruit pieces will, of course, come in for first notice. First, then, the visitor to the Burlington will look at the extraordinary mountain of fruit that is intended to represent Pomona's gifts to Italy. "So skilfully is each fruit form painted that the Grapes seem bursting out of the canvas, and the moisture of the open Melon seems to glisten in each ruptured fibre." Another large fruit piece is a tempting show of ripe Peaches, Pears, and other fruit heaped up on a marvellously painted ring. But perhaps the most perfect work of all is to be seen in the smaller work called "Nature's Jewels," in which a huge bunch of White Currants is depicted with such glossy transparency that they look as if they could hardly stand touching without dropping off the branch.

— THE monthly packet of MESSRS. CASSELL'S PERIODICAL WORKS just to hand contains the following:—Part 80 "Familiar Garden Flowers," with plate of Genista sagittalis, the Winged Broom, and Clarkia pulchella. This part also gives the title page and contents for vol. iv. and a synopsis of the genera noticed. Part 3 of "Familiar Trees" is devoted to the Plane, and has two coloured plates, one of a large tree and the other showing the catkins with foliage. Part 18 o

"Popular Gardening" contains the subject previously referred to, and has a very instructive chapter on propagation. Part 21 of the "Encyclopædic Dictionary" contains from "Cost" to "Croop," page 513 to 576. Part 18 of the "Book of Health" has, amongst other subjects, an important chapter on "Travelling and its Influence on Health." Part 42 of the "Illustrated Book of Canaries and Cage Birds" has a coloured plate of the green woodpecker, the jay, and the nuthatch with descriptive matter.

— A CORRESPONDENT writes that he has "a plant of *LILIUM AURATUM* which had thirty stems, 7 feet high, and bearing 275 flowers. The flowers were 8 inches in diameter, and the plant has not divided for eighteen years." Such a specimen is certainly remarkable, and it would be interesting to learn in what soil and position the plant is growing.

— GARDENING APPOINTMENTS.—The following appointments have been recently made through Messrs. John Laing & Co., Forest Hill Nurseries, London, S.E.:—Mr. Jas. Ford, as head gardener to Captain Elliot, Farnborough Park, Hants. The undermentioned have also been appointed through Messrs. James Carter & Co.:—Mr. Robert Leadbetter, as head gardener to A. G. Hubbuck, Esq., Elmstead Lodge, Chislehurst; and Mr. James Church, as head gardener to Sir William Parker, Bart., Melford Hall, Suffolk.

— THE Editor of the *Tropical Agriculturist* gives the following notes on THE QUEEN OF FLOWERS IN CEYLON.—"On many upland estates in Ceylon we have seen not only garden plots, but hedges brilliant with a wealth of Roses. But until the receipt of a basket from Mr. A. Whyte of Kandy, a few days ago, we had but an imperfect idea of the perfection of form, colour, and fragrance to which the very finest species of Roses can be brought in our island by careful and intelligent cultivation. When the basket was opened, a scene of exquisite beauty was suddenly revealed, the many-petalled, compact and large blossoms displaying every shade of crimson, pink, glorious golden-yellow and white. The basket was more than half filled with damp moss, and in this were placed a number of porous earthen pots which held the bouquets of Roses, the stems of the flowers being also in damp moss, with which the pots were half filled. So packed, Mr. Whyte told us, he was able to send his Roses in good condition to distances so remote from Kandy as Galle."

— A CORRESPONDENT states that a paper was lately read at a meeting in Dresden, giving an account of the INTRODUCTION OF THE POTATO INTO GERMANY and the gradual spread of its cultivation. It was first brought into Germany from Italy in 1585. The first seed Potatoes in Saxony were presented by the Landgrave of Hesse to the Elector of Saxony in 1591. In 1647 they were grown as exotics in gardens at Leipzig. They were re-introduced into Saxony from Brabant in 1717, and they were soon in general cultivation, their culture being much developed in the famine of 1770-71. In the year 1882 over nine million acres were devoted to the cultivation of Potatoes in Germany, the produce amounting to 23 million tons.

— "INSTIGATED by the threatened dearth of the Gutta Percha Tree (*Isonandra gutta*)," says the *South of India Observer*, "M. Hæckel has sought a substitute and claims to have found it in the *BIRTYROSPERMUM PARKII* (Kotschy) of Equatorial Africa, and abundant in latitudes between Upper Senegal and the Nile; especially in the forest of the Niger and Nile regions. It affects the argillaceous and ferruginous soils of Bambaris Boure and Fenoa-Djalon, where the Africans gather its fruit, which yields a grease called karite. The juice or milk is obtained by incision from the bark, and on evaporation resembles gutta percha. M. Hæckel states that he has sent seeds to various French colonies, and also to England, in the hope that the latter country will try the experiment of introducing the tree into her vast tropical possessions. M. Hæckel also calls the attention of English botanists and chemists to the divers India Bassias, as he is led by analogy to infer that they might furnish milky products similar to the *Bassia Parkii*."

— THE WEATHER.—A Westmoreland correspondent writes: "Frost has unfortunately visited us unusually early. On September 24th, at 12 P.M., the thermometer registered 8° of frost, sufficient to cut down Dahlias, Marigolds, and tender bedding plants, also Runner and Dwarf Beans. When we consider the very late spring and scorching summer no wonder that many feel this to have been a somewhat blank season, especially those who have to depend upon many such tender plants for their little display as amateurs and cottagers have to do. Single Dahlias

especially were just at their best. In 1880, September 29th and 30th were two very severe nights. At 12 P.M. on the 29th the thermometer registered 15° of frost. With these exceptions frost this year has come much earlier than usual, but in 1880 the spring was very early, and the best summer remembered in this part."

— TO KEEP AWAY SLUGS.—"Anyone troubled with slugs eating *Lapageria* growths or other choice plants," writes "E. B.," "will find Gorse cut when hard and strong in autumn and chopped into 3-inch lengths or so answers this purpose well. Spread it over the surface of the soil or between pots on stages when the plants do not touch."

— "In the many articles on the cultivation and selection of Tomatoes," writes Mr. E. Burton, "I do not notice mention of TOMATO CARTER'S RED CURRANT. More especially is this brought to my mind in consequence of the many callers here, who do not appear to be much acquainted with it. It is, as its name suggests, very similar in growth of fruit to the ordinary Red Currant, but rather more than twice the size of the finest Currants. Nothing is more esteemed here than this brisk-flavoured variety. It is eaten uncooked from salad oil, and anyone wishing to cultivate a taste for Tomatoes need only grow this. It is of free slender growth, very prolific (more so than any other), and is also particularly ornamental as a roof plant, and equally free throughout winter."

— PARAGRAPHS have been going the round of the daily and local newspapers containing marvellous accounts of the FRUITING OF *ARAUCARIA IMBRICATA* IN THE ISLE OF WIGHT, which seem to have been occasioned by a specimen of this Conifer in Steephill Castle Gardens, which is about 40 feet high and has had nearly forty cones, each twice the size of ordinary Cocoa-nuts, this season. It is not uncommon for this *Araucaria* to bear cones, and plants have been raised from seeds produced in England.

— THE PHYLLOXERA CONVENTION has been joined by Greece, and that country now forbids all trade with North and South America, Australia, Africa, the coast of Asia Minor, and Europe, except Holland, Belgium, Denmark, Sweden, and Norway in trees and plants of every kind, fresh fruits and their foliage, fruit juice, in natural or mixed state; flowering bulbs, and fresh fleshy roots of every description, Vine stakes which have been used in vineyards, and hay in bundles.

— WE regret to learn that the noted botanist M. EDMOND BOISSIER died after a very short illness on the 25th ult. at Valeyres. He was chiefly known for his "*Flora Orientalis*," but he was also the author of several other works, especially his "*Voyage Botanique dans l'Espagne*," an illustrated work which appeared at intervals from 1839 to 1845, and recounted his travels in Spain during 1837. He botanically explored various parts of South-eastern Europe and Asia Minor, and published, separately, diagnoses of the large number of undescribed species he found from within the limits of his "*Flora Orientalis*," the first volume of which appeared in 1867, and the last in 1881.

— MR. STEPHEN CASTLE, West Lynn, wishes to second "A Surrey Gardener's" proposition for the National Chrysanthemum Society to add a GRAPE CLASS IN THE JANUARY EXHIBITION. "This will meet the approval of a host of Grape-growers, the money prizes need not be large, and medals would perhaps cause greater competition. The Society offers very liberal prizes at the November Show for Apples, Pears, and Grapes, which classes have always proved very interesting to the visitors, yet while they have a special certificate for prizewinners in Chrysanthemums the fruit exhibitors are left out. I think even now it is not too late for the National to move in the matter. I should be pleased to give my support to a Grape class or classes. What say others?"

— MUCH useful work has been executed in the SINGAPORE BOTANIC GARDENS during the past year. Upwards of 70,000 forest tree nursery plants were propagated, and have been sent to the forests of Singapore, or to the forests of the neighbouring British settlements. The trees comprised Teak, Mahogany, Serayah, Gum Copal, Merbau, Toon, Illippi, Rain Tree, and mixed native trees. Of the plants sold to the public, a large number were *Fourcroya gigantea* or Mauritius Hemp; the remainder were principally ornamental trees, shrubs, Orchids, &c. "Coca" (*Erythroxylon Coca*), appears likely to prove profitable in Singapore.

— THE Committee of the York Floral Fête are endeavouring to make arrangements for holding an ANNUAL DAHLIA SHOW IN THE NORTH

OF ENGLAND, and Mr. John Wilson, the Secretary, has been entrusted with the negotiations. It is intended to offer £250 in prizes for Dahlias and other flowers, and that a guarantee fund of £400 should be formed by subscription. It is also proposed to term it the National Dahlia Show, Northern Section, and to hold the exhibition at the end of August or early in September next year, if satisfactory arrangements can be made.

— THE members of the WOOLHOPE NATURALISTS' FIELD CLUB will meet at Hereford to-day (Thursday) for their annual foray among the funguses, which will take place on Rishury Camp and the park and lawns of Hampton Court, Leominster. In the evening Dr. Bull will introduce as a subject for discussion "The Effect of Fungus in Destroying Tree Life." Dr. Bull will also give the solution of a New Zealand botanical mystery, and Mr. William Phillips, of Shrewsbury, will contribute "Some Notes on British Puff-balls."

— AN exhibition of CHRYSANTHEMUMS AT DEVIZES will be held on November 17th in the Corn Exchange of that town. It is held in connection with a bazaar, and the profits are given to a local benevolent society. The Show was promoted by the lady district visitors, but the arrangements are under the charge of Mr. Thomas King, Devizes Castle Gardens. The prizes in the fourteen classes vary from £3 to 5s., and a challenge cup is also offered for the exhibitor who gains the greatest total number of points.

— THE AYLESBURY CHRYSANTHEMUM SOCIETY will hold their exhibition on November 19th. Forty classes are provided, and the prizes in the leading classes are liberal, ranging from three guineas to 10s. The summary of accounts for 1884 shows a balance in the Society's favour of £82, which is a most satisfactory indication of the support it has received.

— CULTIVATORS of market garden crops in this country frequently have heavy losses, but they are not alone in their misfortunes, for we learn that during a recent heavy rain at Kalamazoo, Michigan, United States, PLANTATIONS OF CELERY were injured to a serious extent, the computed damage amounting to 100,000 dollars, about £20,000. Fortunately we do not find Celery suffer much from heavy rains in this country, and the plantations by the side of the Thames can frequently be seen with the water standing in the trenches.

— AN INTERNATIONAL FRUIT SHOW AT BUDA-PESTH is announced to take place October 15th to the 30th, at which money prizes and medals will be awarded. Programmes of the arrangements can be had from Wilhelm Gillemot, Gruppen Commissar, Landes Ausstellung, Buda-Pesth.

— IT is estimated that the loss to the United States through FOREST FIRES is now not less than 300,000,000 dollars a year, which is occasioned by the carelessness of boys and hunters.

— A WELL-KNOWN plant in many gardens is MAURANDYA BARCLAYANA, and a little history respecting its name given by Mr. T. Meehan in the *American Gardeners' Monthly* will therefore be interesting to some readers. Replying to an inquiry respecting the Barclayana Vine, as the plant appears to be known in the United States, Mr. Meehan observes:—"Dropping the name of genus for that of the species, it looks like a determined effort on the part of flower lovers to ignore the honour to a lady which this pretty Mexican genus was intended to establish. The author of the name, Ortega, says it is for 'Donna Catherina Pancratia Maurandy, wife of Don Augustin Juan, Professor in the Royal Botanic Garden of Carthage—a learned lady, a sharer, if not indeed a leader in her husband's botanical labours.' But all our text books give the honour to 'Dr. Maurandy, Professor of Botany in Carthage.' It is remarkable that after the botanists should have dropped the lady, ladies themselves, whom we supposed started 'Barclayana Vine,' should have also given to a man the honour intended for the Professor's wife."

ARUNDEL CASTLE.

To the student of early English history the name of Arundel is very familiar as being associated with some of the leading events occurring between the ninth and eighteenth centuries, and the venerable Castle and its gardens are also known to many readers of gardening literature; but notwithstanding this fact there are many new readers of the Journal to whom a few descriptive notes will be welcome.

Arundel Castle has been the principal residence of the Dukes of Norfolk and their ancestors for more than 800 years. The Castle has, however, a history dating from the ninth century, and it is conjectured

by eminent historians that the present "keep" (which is shown crowning the summit of a steep knoll in the centre of the engraving) was built prior to that date by the redoubtable and energetic Saxons as one of their many strongholds of defence against the incursions of the Danes. It is a remarkable structure, and although it has had to bear the vicissitudes of so many centuries, it is still in an excellent state of preservation. The immense knoll on which the keep is built was evidently thrown up by the builders as a formidable means of defence, and this was crowned with the castellated tower, the walls of which vary in thickness from 10 to 15 feet. When the Castle was under siege, and its occupants had to fly to the keep for protection, it was necessary to have a supply of water as well as food to subsist on for perhaps months and years, consequently in the centre of the keep was a well, supposed to be over 300 feet deep. During the Cromwellian wars General Waller, after vainly trying to subdue the Royalist garrison therein, mounted his guns on the tower of the parochial church, and finally succeeded in dislodging the masonry, which fell into the well, thus cutting off the water supply, and forcing the gallant defenders to yield. Local tradition affirms that the illustrious Saxon, King Alfred, dwelt here for some time, and a fireplace is still to be seen which to this day bears the latter monarch's name. Later on King John resided here.

Adjoining the keep is the ancient clock tower, built over an archway, which was originally the main entrance into the Castle.

The residential portion of the Castle is of an extensive character, which is undergoing a thorough renovation. The site of the Castle and keep is on a high position, formed partly by Nature and partly by art. The earthworks on the eastern side are thrown up to an immense height, and the gradient is so steep that it is impossible to climb without the aid of zigzag walks. The whole face of the latter is covered with ancient Oaks and other trees, and looking from the highest summit the scenery of the surrounding country is such as can scarcely be equalled. Nestling at the foot of the Castle grounds is the quaint and ancient borough of Arundel, with its overhanging upper storeys, narrow streets, town pump, and other venerable buildings, including the remains of an ancient priory, and the magnificent new Roman Catholic Cathedral, erected by the present Duke at a cost of £100,000 sterling, with the River Arun following its tortuous course through the verdant meadows and town.

Stretching far away on the verge of the horizon are the grey outlines of the Isle of Wight, to the south-east the famous South Downs of sheep fame, whilst southward may be seen the charming fishing hamlet of Littlehampton, and looking northward we behold the richly wooded park, which has a circumference of twelve miles, and is said to contain 11,000 acres. The soil of the park is very shallow, the substratum consisting of chalk. Just outside the limits of the garden is a magnificent lake known as Swanbourne Lake, which, with its surroundings, cannot be surpassed for natural beauties. This has been the favourite sketching grounds of Constable, Turner, and other famous masters of landscape painting, who have delighted to portray its beauties on canvas. Thus far we have described the interesting points of the Castle and its park, because we think its ancient history and associations, with the leading events thereof, demand more than a passing notice.

Turning to the gardens, we find these not less worthy of interest. After inspecting the Castle and other buildings, we pass through into the flower garden, which occupies the site of the ancient upper court of the Castle, and is flanked on each side by an ancient and formidable-looking wall, also at the end similarly. At this end there is a series of terraces, each about 6 feet wide, rising a few feet one above the other, with divisional walls. These are known as the ramparts, and are reached by a series of steps. Hardy plants of various kinds are planted in each of these terrace gardens, whilst the walls, which rise one above the other, are covered with Myrtles, Peach and Apricot trees, hardy Fuchsias, and Vines. As will be seen from a glance at the engraving, the beds are of a geometrical pattern, with gravel walks between. These beds are filled with hardy plants only, in accordance with the wish of the Duchess of Norfolk, who is fond of this class of plants. Beds of Lilies of various species, Tigridias, Pentstemons, Marigolds, Anemones, and other plants, looked very effective when we saw them. It is intended to do away with the present beds, which have become out of shape and crowded, and introduce a more simple and less formal style. There are some fine specimens of the topiary art in the shape of severely trained Yews, Bays, Laurustinus, &c., which will perhaps disappear with the beds, as they are sadly out of place.

Passing through the clock tower we enter the outer and more picturesque grounds of the Castle. The pleasure grounds are of considerable extent, and extend a long distance away. Rambling over the slopes and dells we come upon remarkably fine examples of noble trees. In one dell not far from the Castle we found a number of Camellias planted out and thriving. Close by, a handsome specimen of the Kentucky Coffee Tree (*Gymnocladus canadensis*), with beautiful pinnate foliage. A little farther we come upon a couple of gigantic examples of *Cupressus macrocarpa*, measuring not less than 60 feet high, and 30 feet in the spread of its lower branches. We do not know their age, but were told by our guide that they were planted by the late gardener, Mr. Wilson, who, it will be remembered, died a short time ago, after thirty years' service as chief of the Gardens. These specimens will soon be cramped for want of room, and extensive alterations will be necessary to afford such, as they are bounded on one side by an ancient road, and the other by an immense terrace, on which are growing very large trees and shrubs. A little farther on we note a few ancient-looking Mulberry trees, a fine specimen of the Judas Tree (*Cercis Siliquastrum*), *Catalpa bignonioides*, the curious *Pavia macrostachya*, and Junipers of various kinds. The shrubberies are

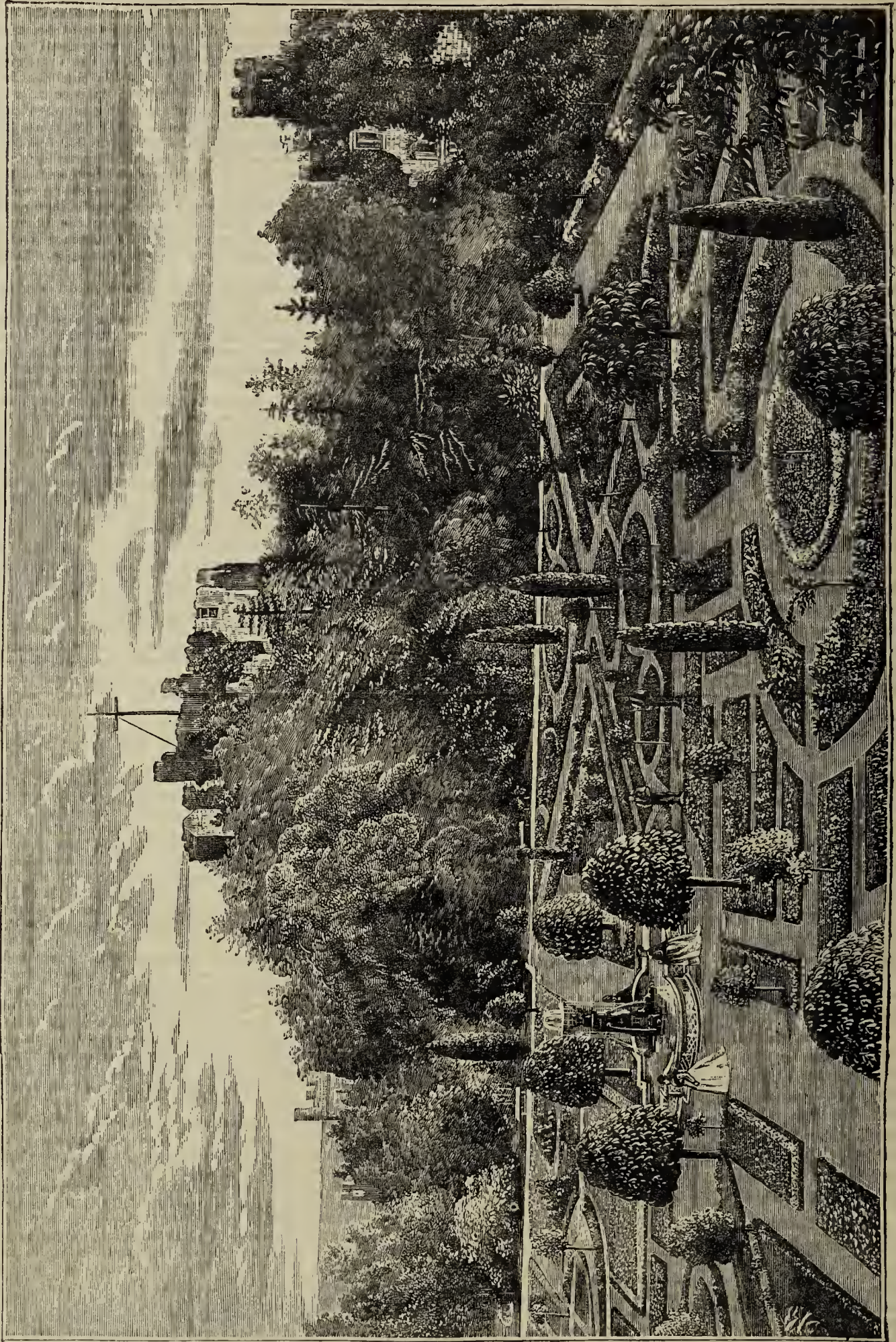


FIG. 51.—ARUNDEL CASTLE, GARDEN, AND KEEP

delightful, the majority of the shrubs having attained a great size. It is remarkable how well the *Quercus Ilex* thrives on the chalk, as the trees attain an immense size, and form valuable shelters for the numerous Conifers planted here.

Continuing we come to the arboretum, which may justly be termed an historical one, as the whole of the trees have been planted by various distinguished personages. On a label in front of a fine tree of *Cedrus atlantica* we read that it was planted by the Rev. Canon Tierney in 1830; another, a sturdy pair of British Oaks, by Queen Victoria and the Prince Consort in 1846; a noble specimen of *Cryptomeria japonica* by Her Grace the late Duchess of Kent, in 1848; a large *Quercus Ilex* by the Princess Elise of Hohenlobe in 1848; a splendid pair of *Wellingtonia gigantea* by the Rev. Father Faber and the Earl of Arundel in 1859; and many others too numerous to mention here. Lying in a group on the ground in one corner of the arboretum are the remains of ancient sculptures, said to represent King Alfred and his first jury. Seed of various trees, such as the Sycamore, have, however, fallen amongst the latter, and have germinated and grown into good sized trees, consequently, unlike the system he is supposed to have primarily inaugurated, they are left to moulder and decay. We noted several fine specimens of *Pinus insignis* and *Abies Pinsapo*, but were somewhat surprised to see that *Araucaria imbricata* did not succeed.

A few minutes' walk through woodland glades, the paths of which were fringed with a continuous line of the Hart's Tongue Fern (*Scolopendrium vulgare*) with here and there a break in the foliage revealing the charming scenery of the beautifully undulated and diversified park, and the pellucid water of Swanbourne Lake reflecting the shadow of the adjacent foliage, as in a mirror, at our feet, we arrive at the dairy garden, so called from the close proximity of the ducal dairy, which has gained more than a local fame as a handsomely built and fitted structure. The garden surrounding the dairy is kept very neatly, there being a number of tastefully arranged beds of bright showy flowers. There are also several very large specimens of *Magnolia grandiflora*. The situation in which they are growing is a damp one, being close to the banks of the river Arun, hence why they grow so freely, this species being a native of the swampy regions of North Carolina. A little further on is a fruit and vegetable garden, used chiefly for growing the culinary kinds of fruit and coarse vegetables. There are also close by several small ponds made for the purpose of collecting ice.

Leaving this farther limit of the gardens we have to cross a public road which passes along the base of the Castle heights, enter a door, and ascend the latter by means of a zigzag walk, a task not easily accomplished, and passing across the Castle grounds we arrive at the principal fruit and vegetable gardens. The fruit garden is about two acres in extent, and is thickly planted with venerable-looking Apples and Pears, Filbert, Plum, and Fig trees. Many of the former are in the last stage of decay. There is a dense undergrowth of Currant and Gooseberry trees, which we were told were not very profitable, and it is the intention to renovate this ancient fruit garden or orchard by removing the Currants and Gooseberry trees and allowing the larger trees to have the full benefit of the soil. Some Brown Turkey Figs were carrying a capital crop of fruit, which were just beginning to ripen in the early part of September. In an out-of-the-way corner of this garden a large and lofty orangery has been built. The designing of this building was entrusted to the architect of the estate, and, as is generally the result in such cases, a structure is built wholly unsuitable to the growth of plants. The sides and portions of the ends, with the exceptions of long narrow windows in the south side, is built with brick. The sides run up to a great height, consequently the roof is lofty, which, although glazed with glass, has such massive timber used in its construction as to exclude the greater part of the light so essential to the growth of plants. The hack wall was proposed to be covered with creepers, but no provision was made for this when the heating apparatus was fixed, as the pipes occupy the width of the path which runs close to the wall.

Descending a steep gradient through a tunnel we find ourselves in the principal vegetable garden. This contains about seven acres, and is only walled in on one side—the south—planted with large, healthy, and free-fruited examples of Amsden June, Goshawk, and Royal George Peaches, and Pine Apple and other Nectarines. Large plots of Celery, Brassicas, Potatoes, and other useful and indispensable crops were looking in the best possible condition, although the roots of the adjoining Elms are such arrant robbers of the virtues of the soil. Heavily laden trees of Golden Pippin and other useful Apples were growing on each side of the walks. Within a few yards of the latter is another smaller vegetable garden devoted principally to growing Strawberries. In this enclosure, too, are the plant and fruit houses. The majority of the houses are not of modern construction. There is an old Peach house containing veteran trees of Royal George and Noblesse and a couple of Pine pits in course of repair. There are also a couple of large span-roof metallic vineries, said to have been built over sixty years ago and still as sound as ever, in which fair crops of late Grapes were ripening; a couple of metallic lean-to's containing Muscats and Hamburgs; a couple of wooden lean-to's in which the earliest crops had been growing, and a lean-to metallic Peach house.

The plant houses are not numerous, but nevertheless there is a heavy demand on their resources in the way of keeping up a daily supply of cut flowers for the decoration of the altar in the Cathedral, which is within a stone's throw. One house is devoted to Encharis. The plants looked wonderfully healthy and free from disease, and as a constant supply of these flowers has to be kept up it requires more than ordinary skill to manage to attain this object. Stephanotis, the Elvaston variety, is largely grown here; also Gardenias. These were planted out and

doing well. Smaller houses were filled with all sorts of useful plants for decorative purposes, and pits of Violets, Poinsettias, Primulas, and Cinerarias. Strawberries are forced here to the extent of 3000 plants, the favourite varieties being Dr. Morère, James Veitch, and the Vicomtesse. Hard by is a large specimen of Fig known as the Petworth variety, but although it fruits so freely it has never ripened one out of doors. A similarly large specimen grown at Petworth under glass bears abundantly, and the fruit is said to be very delicious. Our best thanks are tendered to Mr. Burberry for the great kindness he showed in making our visit a pleasant and interesting one.—T. W. S.

JUDGING GRAPES.

I PERFECTLY agree with all Mr. Iggulden has written on the above subject, and the only addition I thought necessary to make those comments perfect was that he should add Muscat Hamburg among the varieties to be in season during July and August.

I think it is almost hopeless to look for the framers of prize schedules to state that only particular varieties are admissible in certain seasons, as that would be the means of deterring such exhibitors as could not comply with them from exhibiting altogether, which is the farthest from the desire of such committees, their object being to produce as good a show as possible with the small means at command. I perfectly agree with keeping a class for Black Hamburgs, and a class for any other black variety, and the corresponding class for Muscat of Alexandria and any other white variety. I once had the good fortune in contending the point against an overwhelming majority as to the desirability of making these four classes, to have the satisfaction of seeing it adopted. I think exhibitions of very moderate pretension should endeavour to provide these four classes, as Mr. Iggulden justly remarked. Where classes are offered for each variety, of course the work of judging is simplified, but it is not in the power of many societies to do thus; and perhaps it is not always a matter of regret that they do not, for where handsome prizes are not offered to attract exhibitors from a distance, very poor examples indeed will sometimes carry off leading honours. A considerable scope in the case of the generality of Grape classes must be given to the judges to use their own discretion, and for my part the man who holds Mr. Iggulden's ideas is the one I should prefer to judge my exhibits.

Your correspondent "S," page 268, seems quite to have left out Mr. Iggulden's mention of the Chrysanthemum shows as being the best opportunity of exhibiting late Grapes, and surely there are enough of them springing up in different parts of the country to satisfy anyone. I should hardly think "S." exhibits very much, or he would never think of securing for himself the Grapes, or whatever else he may stage. I think such expressions are calculated to prejudice employers against exhibiting, and if "S.'s" employer does not mind him taking for himself the produce he exhibits, I feel sure he is almost, or quite, alone in that matter.

Judging from the whole of "S.'s" remarks, it would appear that he wishes to encourage the growth of late Grapes for summer and early autumn shows, and he would have the judges take into consideration that they would be good six months hence, and all that they have to look at now is, Are these Gros Colmans or Alicantes finer in bunch or berry, of a more symmetrical outline, better colour and bloom, than So-and-so's Black Hamburgs and another's Madresfield Court, and if so they are entitled to the first place? If this was the only course of judging adopted at July and August shows, I think we should less often meet with Black Hamburg and Madresfield Court. For my part I should like to see a special class for Muscat Hamburg in the schedules of horticultural shows to encourage the growth of high-flavoured varieties, and not that constant craving for appearance only.—C. WARDEN.

[We think that if there were such a phenomenon as a gardener "securing for himself" the Grapes of his employer after exhibiting them, he would scarcely proclaim the fact in a public journal. "S." is quite correct in stating that many Grapes are shown that are never intended for their owner's table, as they are sold with the immediate sanction and by the request of those whose property they are. This is the plain meaning of the remarks on which our correspondent has put a different interpretation.]

THIS important subject seems to be attracting the attention it deserves, and if any alterations can be made in prize schedules which will afford satisfaction to those writers who seem to think that such will be beneficial generally, it is to be hoped that the outcome of the present expression of opinions may be that they will be carried through without delay. I for one fail to see how autumn shows can be carried on without prizes for such widely and largely grown varieties as Gros Colman, Lady Downe's, and Alicante being offered. There are other varieties, such as Gros Maroc, Alnwick Seedling, Mrs. Pince, Gros Guillaume, &c., which are not at their best at autumn shows. Are all these to be excluded from September shows? If the rule laid down by some writers is to be strictly carried out, all the aforementioned Grapes should not be seen on our exhibition tables till November at the earliest, and some of them not till much later on in the season. Are there shows enough held from November to March at which all who desire to show can have opportunities of doing so? Are there enough prizes offered in the country generally during these months at what few shows are held then to enable growers to withstand the temptations offered at shows held at the end of August and September?

Until we have prize schedules entirely re-arranged, all late Grapes excluded from autumn shows, and other opportunities offered for their

displayed at times when they are in greater perfection as regards dessert qualities, we must expect growers to bring forward their Alicantes, Gros Colman, Lady Downe's, &c., and cannot wonder if they should exclaim against being put in the background simply because time alone is wanting to make them perfect.

"A Kitchen Gardener" defends Alicante vigorously, and ably states his reasons for so doing. There can be no doubt that what he says is true. Alicante is, and ever will be, I think, more generally grown than Madresfield Court; it is a free cropper, a fine free grower, and grand keeper, and its qualities of bloom, bunch, and berry have been so often displayed at shows that they must be patent to all. It has no fault of cracking to perplex and annoy, and though not possessed of the flavour which Madresfield Court attains, is still by no means to be despised for that, as it has a peculiar crispness, which makes it, when used in January, February, and March, very pleasant and refreshing.

I can endorse "A Kitchen Gardener's" remark on the colouring of Grapes this season, at least in regard to some varieties. Gros Colman has coloured much more quickly than for some seasons back, and that with an extra heavy crop. If "A Kitchen Gardener" had seen a bunch of Duke of Buccleuch which Mr. Kirk exhibited at Edinburgh lately he would have seen one the very reverse of "ragged and small." The bunch was large and the berries enormous. Indeed all the Duke of Buccleuch shown there was characterised by the solid appearance of the bunches and the regularity of the swelling of the berries.

Golden Champion was also far from "ragged;" it, too, was compact and regular.

Mr. Jenkins remarks that it is a pity "that prizes are not offered solely for Madresfield Court at our summer shows." Certainly it is a pity if this is not done, and all societies really anxious that Grapes should be shown "in season" should do so. Mr. Jenkins also remarks that by so doing societies "would greatly encourage growers to persevere with it;" and also that "many who have almost lost heart on account of the berries splitting, would, by paying more attention to atmospheric conditions, eventually succeed." If such can be effected by means of societies offering prizes "solely for Madresfield Court" at the summer shows it is to be hoped that all will speedily do so.

The question of the division of Grapes into summer, autumn, winter, and spring varieties at our shows must be taken up and carefully considered if opinions such as those expressed by Mr. Iggulden and others are to prevail. Hard-and-fast "rules and regulations" as to when each particular kind is to be shown must be laid down, and who will be able to do this in such a manner as will please all? I am afraid that some latitude must always be allowed, and where there are Grapes shown superior in every respect save their condition for the dessert table—which time alone is required to remedy—to others more "in season," then the word should be in favour of the former.

"A Kitchen Gardener" has made this plain enough in his remarks on "A Young Exhibitor's" ideas. As he says, shows would need to be held far more frequently than at present if "A Young Exhibitor's" ideas of "in season" and "out of season" are to be acted upon. Many able gardeners and first-class Grape-growers have in times past adjudicated at hundreds of shows where common sense guided them in their awards, where no hard-and-fast line of being "in season" was allowed to warp the judgment, but where, every condition being duly weighed, results satisfactory to the majority of exhibitors were arrived at. A very great change indeed will have taken place if in the future all late Grapes are debarred from autumn shows, as some writers seem to desire.—S.

I THINK Mr. Iggulden and a few others are writing too strongly against the Alicante Grape and giving too much praise to Madresfield Court. It is only in a few places that Madresfield Court does well, otherwise we should see it oftener at our shows. We all know it is a good Grape when well done, but seldom do we see it. And why should a had example of that Grape be placed before others? My advice would be to beginners, Plant ten Alicantes to one Madresfield Court if a quantity of good Grapes is wanted. In eight localities out of ten Madresfield Court will not do well. I have grown it here for ten years and tried it in different ways. I have not yet been able to cut a bunch fit for our local show. I have six other varieties in the same house, and have exhibited bunches from each of them; the Alicante proves the best. I start my house the 1st of February. I should like to know if Alicantes are not fit for exhibition in August when started at the time named. If we follow Mr. Iggulden he will shunt out all who have only a house or two at their command, and give scope to those gardeners who have many houses, almost enough to grow each variety of Grape separately. The gardener who has only space to grow a few hundredweight of Grapes has to compete with those that grow Grapes by the ton.—H.

"MODIFIED" EXTENSION VINE TRAINING.

THE claim put forward this week by "J. W." on Mr. Taylor's behalf, that he is only "a modified" extensionist, will not "hold water." He is by his own showing "a confirmed extensionist." He mentions 12 feet in his book as the length of cane that may be left at pruning time, and he clinches the case by declaring that "cutting down the stem of a Vine does not add to the vigour of the growth." Of course, no extensionist approves of the practice unless the wood is well ripened. That was laid down as an essential condition of the extension system long before Mr. Taylor wrote a word on the subject, and that condition really goes to the bottom of the matter, because (except in cases where it is a matter of

accommodation or convenience) if a Vine is well ripened here is no limit to the length of cane that may be left. Why should not 20 or 30 feet be left as well as half a dozen or 12 feet? The logic of the argument is clear and undisputable, and practice has proved its correctness.—J. S. W.

TUBEROUS BEGONIAS OUT OF DOORS.

It is often regretted that more diversity is not introduced in the bedding decoration of parks, public and private gardens, but it seems that at least one group of plants has not yet been employed to the best advantage for this purpose. Tuberous Begonias have been frequently recommended in the past few years for bedding out, but their merits have not been fully recognised at present; and though they have obtained a prominent position in public favour as greenhouse or conservatory plants, they are yet regarded by many as of doubtful value for beds or borders out of doors. This is quite a mistake, for the plants are evidently well adapted for such a use throughout the greater part of Britain. We have seen them in many districts of England and Scotland, and as examples two widely separated gardens may be noted—namely, Drummond Castle in Perthshire, and Heytesbury in Wiltshire, for in both of these we have seen admirable beds of brilliantly coloured Tuberous Begonias at a time when the beauty of the Pelargonium was waning. In both wet and dry climates these Begonias succeed, for the succulence of the stems enables them to resist more drought than many other plants, while rain does not seem to injure them in the slightest. In heavy storms the flowers droop slightly, so that the rain runs off the outer surface of the petals without affecting the colour. It is remarkable that such plants should endure excessive rain so well, but it has been abundantly proved, and it is one of the strong points in their character.

Few who have not seen the Begonias in beds at Messrs. J. Laing and Co.'s Forest Hill nurseries this season could form an adequate idea of the wonderful effect produced by 90,000 plants in flower. Scores of beds 100 feet long and about 4 feet wide were closely packed with seedling Begonias in separate colours, formed a display which, for brilliancy and richness of colouring, could not be equalled by any other plants at the end of September. A most important step towards popularising these plants has been made in procuring fixed strains of different colours which can be depended upon to come true. Messrs. Laing & Co. have now twelve shades—namely, rose, pink, scarlet, crimson, dark crimson, white, yellow, bronze, orange scarlet, violet red, blush, and crimson red, and they have had huge beds of each that showed most satisfactorily how true they were to their respective colours. Another interesting point was the time required to produce such vigorous flower-laden plants as those named. The seed was sown in heat on January 20th this year, and after the usual gradations of pricking off and potting, the seedlings were ready for planting out the first and second week in June. The soil is naturally heavy, but it received no special attention beyond a top-dressing of road sweepings, old manure, and cocoa-nut fibre, in which the plants were placed, and there during July, August, and September they produced their massive flowers in thousands. It is found, however, that the seedlings flower even better the second season, as they then assume their best characters of colour and floral size, and if any are left after the enormous demand is satisfied, we may expect to see some still more beautiful beds next year.

As to the general quality of the varieties it is almost needless to speak, for so much attention has been paid to Tuberous Begonias at Forest Hill during recent years that it is difficult to imagine how they can be farther improved. Nine-tenths of these seedlings are as good in size, substance, and form of flowers as varieties which a few years ago were named and certificated, amongst them many being observable that even now seem worthy of designations. Those, however, that are now honoured in this way must be superlatively good, and Mr. Laing has a Royal Family group of what he considers his finest varieties, and of which a handsome coloured plate is being prepared. These constitute the types of the highest development in Tuberous Begonias, the flowers being finely rounded, the petals nearly equal in size, and forming a beautiful even outline. The varieties are named Queen Victoria, Prince of Wales, Princess of Wales, Duke of Edinburgh, Duchess of Edinburgh, and Prince Albert Victor, and the colours are extremely rich shades of rosy salmon, dark maroon, bronze yellow, scarlet, orange scarlet, and violet rose. The last-named tint, which distinguishes the Princess of Wales, is a decided step towards purple or violet, and it seems as if there might be some chance of obtaining that desideratum, although experiments have not hitherto been very satisfactory.

The named varieties, both single and double, raised in the last two or three years are very numerous, and their merits are testified by the first-class certificates awarded for them at the leading horticultural shows in Great Britain.

POTATO MAGNUM BONUM.

I SENT you yesterday a small box containing five Potatoes, Magnum Bonum. When I weighed the five the weight was exactly 8½ lbs, the largest being 1 lb. 3½ ozs. I have read so much about the Potato crop being almost a failure in some parts, that I thought it might interest you to know that on our heavy lands we have a magnificent crop, though, of course, owing the early and lasting drought, followed by warm rain, the shape of the tubers is not all that could be desired. I have harvested about 2½ tons—2 tons of Magnum Bonums, half a ton of Bresse's Prolific, a variety well suited for our soil and situation. Soil, a stiff whitish clay;

situation, high; land with a steep slope facing south and south-west.—
JOHN A. WILLIAMS, *Alderminster Lodge, Stratford-on-Avon.*

[The tubers were wonderfully fine, not hollow, and they cooked well, one that was baked proving particularly good.]

CROWN ANEMONES.

WRITING to the *Times* respecting the above plants Mr. F. W. Burbidge thus describes his method of treatment. "The many variations of the *Anemone coronaria* are so universally thought of as spring flowers only that, in the interest of a rapidly increasing class of amateur gardeners, I wish to say that they flower most luxuriantly at the present season in many localities if the precaution be taken of raising plants from seeds sown in the open air in early spring. Gardening has been described as an art 'which does mend Nature; change it rather;' and so it comes that in mild localities near the sea this Windflower of the Greeks may add beauty to our gardens in this, the Dahlia, season, even if not also in company with the Chrysanthemum and the Christmas Rose.

"The ordinary method of Anemone culture now practised in most gardens is confined to the autumnal planting of French or Dutch-grown roots for blooming during the following spring days, and this plan, if not actually 'as old as the hills,' dates from the days of Shakespeare. Parkinson, in his 'Paradisus,' published in 1629, indeed tells us that the spring-blooming Anemones vary as much from seeds as do the Tulips; but, as far as I have been able to gather from books, no attempt was made in the olden days to treat the Crown Anemone as an autumnal-flowering plant, as is now quite possible. There is no magic in the method I recommend. The woolly seeds are rubbed up together with dry sand or earth so as to separate them thoroughly, and during February or early in March they are sown very thinly on a bed of earth well enriched below the surface with cowdung, the seed and sand being sprinkled on the surface together. After sowing, water during dry weather, and when the seedlings appear thin them so that those remaining are fully 6 inches apart. During July and August the growth of the young plants may be strengthened by the application of weak liquid manure or soot water. The first flowers begin to appear during September and October, or say seven months after the seeds are sown, and near the seashore or in warm sheltered localities flowers are produced during mild weather all through the winter months, the finest flush of blossoms coming in March and April.

"The flowers sent herewith are pulled from a seed bed sown so late as March last. This system of obtaining brilliant flowers of the Crown Anemone during the autumnal and winter months is so ample, and the results so satisfying, that it seems to me to merit the attention of flower-loving amateurs.

"In former years our finest Pears were reared from seeds in Belgium; even the garden varieties of our national emblem, the Rose, were reared for us in France, and now our bulbous flower-roots come from Holland. But foreign competition has, of late, taught us many things, and so to-day we at least know that it is possible to raise the finest of fruits and of flower-roots on English soil. English varieties of Queen Rosa now equal, even if they do not surpass, others; and last, but not least, it is fairly proven that the same statement is true in the case of the double and semi-double varieties of the Crown Anemone."

EFFECTS OF EARLY PRUNING ON VINES.

IN the *Journal* of September 24th, page 274, there is an article on the above subject by your valuable correspondent, Mr. Iggulden, which will interest all those who are in the way of showing Grapes, as well as that greater number who are in the habit of shortening laterals. I will venture to say that there has already been many a spur marked from which part of the lateral has been cut with the bunch, and not a few will remember that it was but last week they shortened the laterals in a vinery in order that they might let in more light to the Chrysanthemums that have to be put inside.

From what I can gather from Mr. Iggulden's article he is of opinion that the practice of shortening laterals to about 6 inches or so is injurious to the Vine, and in support of this he mentions a case where the Vines in the centre of a Muscat house had been heavily cropped, and a considerable number of bunches were cut therefrom with parts of the laterals attached to the bunches; the result in the following year being that the Vines made a weak break, and the cause of this is attributed to the shortening of the laterals. Now, I think it would have been more reasonable to attribute the cause of the weak break to the heavy cropping of the Vines instead of the shortening of the laterals. It seems to me that this case does not support his views, because we have always the heavy crop to be considered. I have not given the subject as much attention as Mr. Iggulden has done—

—judging from what he says his observations have been for "the past three seasons," but this I can truthfully assert that in a certain early vinery where Grapes are grown for the market the laterals are always shortened to about 6 inches, "while yet the Vines are in full leaf." The Vines are about nine years old, and this year they finished what any reasonable individual would call a splendid crop, and certainly showed no signs of that "slowly" going to ruin which Mr. Iggulden would expect to see. Again, I am acquainted with a somewhat famous house of Vines where there are from fifteen to twenty bunches of Grapes cut for exhibition every year, having of course a good piece of the lateral along with them. Now, all this being cut from some ten rods yearly ought, according to Mr. Iggulden, to be telling upon them, as it has been going on for at least five years. But instead of their falling off I see this year's beautiful crop being praised in the *Journal of Horticulture*.

The subject, I think, is a most important one; for if it can be proved that shortening laterals at this stage is weakening to the Vines, there are thousands of gardeners about this time who will be injuring their Vines, but if it does no harm those who practise it and find no evil results would do well to give us their experience, as the shortening of laterals is very serviceable where space for winter-flowering plants is limited.—R. GILCHRIST.

THE PRIMULA CONFERENCE.

FROM a copy of the programme of the Primula Conference, to be held on the 24th of April, 1886, under the auspices of the Royal Horticultural Society, it appears that an exhibition of these interesting plants will be held in the conservatory at South Kensington on the 23rd and 24th of April, 1886, in conjunction with the Exhibition of the National Auricula Society. The President of the Conference, John T. D. Llewelyn, F.L.S., and the Chairman of the Committee, Dr. Michael Foster, F.R.S., are supported by a numerous Committee of gentlemen interested in the subject in this country, both amateur and professional, as well as by the representatives of a large number of the chief botanical and horticultural gardens and museums abroad. It is proposed that the plants to be exhibited shall be arranged under eleven classes—namely, I. The Primula. II. The Primrose and Polyanthus. III. Varieties of *Primula Sieboldi*. IV. Varieties of *Primula sinensis*. V. European species, varieties, and hybrids of the genus *Primula*. VI. Himalayan and other Asiatic ditto. VII. Chinese and Japanese ditto. VIII. American ditto. IX. Plants allied to the genus *Primula*, such as *Cyclamen*, *Dodecatheon*, *Androsace*, *Cortusa*, &c., of the species only, not garden varieties, will be admitted. X. Primulaceous plants grown to illustrate special modes of culture, &c. XI. Specimens, models, and drawings illustrative of the structure and mode of growth of Primulaceous plants.

In order to assist in the arrangement of the European Primulas at the Exhibition, Mr. J. G. Baker, F.R.S., has kindly drawn up for the Committee a list of European Primulas, classified in three groups, published as an appendix to the programme, which may serve as a preliminary basis for the discussion at the Conference, and also as a guide, as far as possible, to the exhibitors in giving names to the plants they exhibit.

The provisional programme of the Conference on April 24th, 1886, includes—1, The origin and history of the florist's Auricula, on which subject an introductory paper will be read by Mr. Shirley Hibberd. 2, The directions in which efforts should be made with the view of improving the florist's flowers belonging to the genus *Primula*; introductory paper by Samuel Barlow, Esq., J.P. 3, The nomenclature of Alpine Primulas; introductory paper by Mr. J. G. Baker. 4, Culture of hardy Primulas; introductory paper by Dr. Maxwell T. Masters on root structure and mode of growth as affording indications of the probable best culture.

This Conference following closely, as it does, on the heels of the Apple Congress and the Orchid Conference, and with a Pear Congress in course of arrangement, together with the active part being taken by the Society in housing and caring for growing plants to be shown in the forthcoming Colonial and Indian Exhibition by the various colonies, gives evidence that the Royal Horticultural Society, under the energetic management of the present Council, not only still holds, but has taken a step in advance of its well-known position as the horticultural authority in this country.

FERNS IN VINERIES.

I AM no advocate for filling vineries with plants, yet having a partiality for Ferns I grow a few, which improve the appearance of the houses. The vineries being 20 feet wide I have a row on each side, and these being 8 feet from the stems of Vines I am not afraid of their conveying insects to the Vines. The culture of Ferns is very simple, and

they do well under the shade of Vines. Having but little fire heat after Christmas it is late in spring before I get a good young growth, but they are potted in April or May, using a good portion of loam. We never repot a Fern until it is growing. The following are what I am growing, and they are doing well:—*Dicksonia antarctica*, two young plants, are pretty, though they are inclined to be affected by thrips; how long they will do here I do not know, but in a young state they are very useful decorative plants. *Blechnum brasiliense*, the most perfect plant I have, this wants room to show it off, so I stand it at the end of the house on a tub. The *Adiantums* are very useful. *A. cuneatum*, so well known, is always a favourite. I thought at one time *gracillimum* would supersede it, especially for bouquet and buttonhole work, but I find it is not so. Both are useful either as dinner-table or vase plants. *A. decorum* is, however, by far the most useful in small pots, say 48's. *A. concinnum latum* is another noble-looking erect variety with much larger fronds than the preceding. *A. farleyense*, very beautiful, but I have great difficulty in keeping it through the winter; this requires higher temperature than I can give it. *A. Legrandi* is more curious than beautiful, and if the foliage is kept dry it will do. *A. tinctorum* is always very pretty, its pink tints on young fronds making it very distinct; its habit, however, is rather loose and straggling. *A. Paccotti* is my favourite. One of the best of the later introductions, it should be in every collection; it appears to be hardy, and its growth is very compact, of a dark green. *A. mundulum* is very dwarf and distinct, making good bushy plants in small pots. *Adiantum fulvum* is quite distinct from any I have named, and is a useful hardy variety.

Asplenium Hookerianum is a very pretty graceful plant, very distinct and useful. *Lomaria gibba* is too well known to need praise from me. This is very effective for general use, the only time it looks shabby is when the fertile fronds go off. *Lastrea aristata variegata* is a fine companion for *Pteris argyrea*. *Pteris tremula* is a free-growing Fern, very useful for so many purposes. *Lastrea prolifica* is a decided curiosity, and free in growth. *Asplenium bulbiferum*, though old, should not be lost sight of, it being useful either as large or small plants. *Nephrolepis exaltata* is another well worth growing in a collection. *Cyrtomium falcatum* is a very bright dark green large-growing variety, hardy, useful for halls and lobbies. *Nephrodium molle corymbiferum* is distinct and hardy. *Pteris cretica* is a well-known useful Fern. *Pteris cretica albo-lineata*, the variegated form of the above, is distinct and free in growth. *Pteris serrulata* is common, but indispensable in a collection. *Pteris serrulata cristata*, the crested form, very dwarf and pretty. *Aspidium trifoliatum* is worth growing for the sake of its fernlike fronds.

All the above do well, the unsatisfactory varieties being omitted.

With the Ferns *Asparagus plumosus nanus* succeeds well, being easy to grow and very telling in a collection. The cut shoots and branchlets are very lasting. Do not err in potting the plants too soon, let them be in full active growth before potting or dividing.—STEPHEN CASTLE.

THE SOUTHWELL NURSERIES, NEAR NOTTINGHAM.

SOUTHWELL is easily reached from Nottingham on the Retford and Lincoln line, and the good old minster is well worthy of a visit. Close to the town is Mr. Merryweather's extensive nurseries, which the rosarians of the district know so well, and where Roses are grown by the thousand, and Tea Roses out of doors are most extensively cultivated and thrive well. Towards the end of September the Teas were in great beauty and flowering profusely. The Roses are also largely grown under glass there, and Mr. Merryweather has a large stock of the beautiful new Tea *Etendard de Jeanne d'Arc*, which under glass is veritably a white *Gloire de Dijon* of great beauty and of excellent habit, whilst out of doors it grows well and flowers most profusely, but in the open air affects greatly the type and appearance of *Souvenir de la Malmaison*. *Sunset* is another favourite, an improved *Madame Falcot*; and *Madame de Watteville*, a very lovely Rose of *Homère* style. *Princess of Wales*, extra fine; *Miss Edith Giffard*, *Innocente de Pirola*, and climbing *Madame Eugène Verdier* are all regarded here with great favour. The new Rose *Henry Bennett* is not regarded with favour, and judging from a bloom I saw it will not take a high place amongst our Teas, a class of Roses which is now very rich indeed in fine varieties.

Hardy ornamental trees and shrubs are extensively grown, and fruit trees, especially Apples, are grown in large quantities, the Southwell and Halam districts containing extensive Apple orchards. There is a remarkably productive fine variety peculiar to this district, and said to have been raised there, named *Bramley's Seedling*, and I believe it obtained a special distinction at the Apple Congress. It is undoubtedly a very first-class variety of stiff close habit, with healthy distinct foliage, an enormous and certain cropper, and everybody's Apple. It is all that can be desired in quality and grows to a good size. Herbaceous plants also secure here more than ordinary attention, and a very fine collection is well cultivated. I noticed a pretty and seldom met with plant, *Hypericum Coris*, with its Heath-like habit and charming yellow flowers. *Helianthus multiflorus major*, one of the finest of all the single perennial Sunflowers, and *Veronica subsessilis* are two very desirable border plants. *Montbretia Pottsi*, with its bright orange slender spikes, was very bright and beautiful. *Lobelia syphilitica* was at home and in full beauty, and a mass of *Rudbeckia Newmanii* showed what a grand thing it is for autumn decoration, especially in masses, and yet it is an old plant not known as it should be. Mr. Merryweather speaks highly of Mr. Ingram's *Saxifraga ligulata* as a decorative plant, a strong-growing variety, but it blooms earlier in the year. Two large beds of *Saxifraga granulata flore-pleno* in luxuriant growth must be a sight in the spring.

Spring-bedding plants are cultivated here, and a very large stock of double hardy Primulas grow well here, and a good collection of Alpine and other hardy Primulas do so well here. Pansies do well, as also do Violas, that fine variety *Countess of Kintore* being a special favourite. Violets luxuriate, and all the newer varieties, as well as the older ones, are grown here largely; but Mr. Merryweather places a very high value as a market variety upon *Willsiana*, sent out from Slough, a close erect-growing variety of excellent habit, with large single blue flowers, and a fine pot or frame variety. Amongst the doubles *Comte de Brazza* and *Marie Louise* are the favourites here. That very fine double variety *Lady Hume Campbell*, which is a special favourite at Harefield Grove, near to Lady Hume Campbell's estate, and is a great improvement on the old *Neapolitan*, and of the same habit and colour, is to be added. Altogether the Southwell Nurseries afford an excellent opportunity to old hardy-plant lovers of brushing up their memories and reviving old associations by seeing so many of our finest, and in many instances rare old favourites in the plant world.—VIOLE.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 4.

AN appeal was recently made to the Duke of Westminster, as the freeholder, to secure the opening to the public, at least in the dull season of London, of those West End squares that are situate in what is styled Belgravia. As far as the inhabitants of Westminster are concerned, they might be said to have some ancient right to enter the enclosures now so jealously guarded from the commonalty, for they occupy part of the open space that during some centuries was free to the Westminster folks, young and old, for some months of the year, and was commonly known as the "Five Fields." At the present time the people of the districts near Belgravia cannot be said to be badly off for open spaces, with the wide range of West End parks and Battersea Park within easy access. Out of deference to the wishes of the privileged, however, the Duke had to refuse, although personally willing, but an exception was made in respect to one-half of the central plots of Grosvenor Gardens, which is opened temporarily.

The Five Fields, which yielded to mansions and gardens soon after George III. ceased to reign, have left us little or no traces of their former history. Their boundaries are lost; we only know they were situate north of Ebury Street towards Knightsbridge, the now hidden streamlet, the Westbourne, flowing between them and Chelsea, crossed by a bridge of mere planks, called "Bloody Bridge," as associated with some act of violence committed by the robbers who lurked at night behind its sand or mudbanks. There was a Willow Walk, too, but the soil does not favour at present the growth of this tree, which, unfortunately, graceful as it is in its different kinds, can but seldom be induced to grow about the metropolis, because it wants much moisture and dislikes smoke. I once hoped to find in some of the squares, after the ground had been turned over, specimens of the wild Clary (*Salvia verbeniaca*) or the Bitter Cress (probably *Cardamine hirsutum*), which it is recorded the old herbalists plucked in the Five Fields, but they did not appear. Though to my surprise I found the Red Valerian (*Centranthus ruber*), only a straggler it is true, yet possibly it formerly grew on the higher slopes of this ground, just as we now see it sometimes along railway banks, chiefly in chalky districts. This open space seems to have been a part of the farmland of Ebury or Aybery, and Lammass-land, that is open in some months of the year and closed during others. Towards Knightsbridge, however, and about the site of Belgrave Square was ground always under cultivation by the Chelsea gardeners of the Georgian times, where they raised such vegetables as Melons and Asparagus, the soil being formerly suitable for them and other plants that are lovers of moisture. The last vegetable I saw flourishing under culture in Belgravian bounds was—Rhubarb!

To proceed. Grosvenor Gardens, then, small in extent, is as yet the only West End square free to all (at least it is in August and September), but under some singular regulations, for one thing "shouting" is prohibited within its sacred limits, as well as speech-making. Not a space much resorted to by the poorer class, it offers to any semi-suffocated passenger who has just emerged at Victoria Station from the miseries of underground travelling, a spot where he can breathe a purer air and gaze on greenery. Wisely but a small number of trees have been planted. A double row of young Sycamores cross the centre from north to south; probably these in time will prove to be too near each other, close planting being often noticeable about London, I suppose for the reason that some are sure to die off. But Sycamores do not look well if placed too near together, owing to the size of the leaf, and on the whole it is a species that bears a London life better than many trees. Here is a central bed, with a moderate display of summer flowers, and paths run off from the centre at

right angles to the four points of the compass, the corner spaces thus made are occupied by grass plots. These paths are edged with Ivy, according to a fashion much favoured by the layers-out of town gardens, and all round the garden is a fringe of shrubs, amongst which Lilacs and Hollies predominate.

Eaton Square, without going into exact measurements, may claim, I believe, to be one of the largest of the metropolitan squares, and its open ground is divided into six parts, the two central gardens being the larger, and through it runs the King's Road, extending on to Fulham, and along which in former times were the many nurseries of Chelsea, all of which have succumbed to the builder save Little's Nursery; this, though closed, is not yet turned into rows of houses. An examination of the trees of this square shows pretty conclusively that none of them are older than 1827 or '28, when the ground was laid out, so that possibly this part of the Five Fields did deserve the title of "barren waste," bestowed upon it by a poetaster of last century. Towards Knightsbridge there were old trees scattered here and there. The three large Sycamores of Chesham Place must have been planted before the houses were built; so, too, several scattered about Belgrave Square, and there are memories of ancient Elms of Stuart times which have perished through insect enemies. For many years Eaton Square has been noticeable for its Almond blossoms of the early year, and its Laburnums and pink "Mays" of a more advanced season; but lately the Almonds have been scant of flowers, and the Hawthorns, pink and white, being mostly near the railings, have suffered from those meddlesome youngsters who do needless damage to obtain flowers. The gardens on the north side of this square have more trees than those on the south; as one consequence the grass there appears to be more patchy. Probably of all British trees the Ash exercises a most obvious influence upon the plants that may happen to come under its shade, and though Tennyson in one of his poems, referring to the signs of spring, says that "thick by Ashen roots the Violets grow," this is a mere fancy; one seldom finds any wild flowers near Ash trees. Yet the species is suitable for town gardens, because it keeps in leaf when the Elm and Horse Chestnut are bare, when the Lime shows only a few fresh leaves put forth at the end of summer, and even the Sycamore has lost the greater part of its foliage. There are many Ash trees in Eaton Square, and some were placed in the midst of grass plots with seats round them, and as a consequence the grass languishes. It would have been better to have had a circle of gravel about the trees, some of which are remarkably fine. There are also well-grown Sycamores and Limes; the Horse Chestnuts and Elms are fewer; the numerous Lilacs appear to be greatly the sufferers from insect pests. Privet hedges surround these squares, and the gardeners have been so fond of this shrub that they have set bushes besides in the nooks and corners amongst other evergreens, which, however, are not abundant or much varied. The beautiful and large caterpillar of the Privet hawk moth used to be seen frequently running itself on the hedges in August and September, and in Belgrave Square adjacent, but I have not recently observed its occurrence here. Amongst the Privet in some parts of Eaton Square the Tea Tree (*Lycium barbarum*) has been planted, and it flowers, though but sparingly, in London air.

When a boy, I remember I strolled through the north central garden of Eaton Square (let us say about forty years ago), this ground being then cultivated by Tuck the florist, who subsequently took the Sloane Street Nursery. At that time it was replete with choice flowers of the period, now neither this nor the companion gardens make any special display; in fact, their arrangement altogether is chiefly interesting from an historic point of view, as illustrative of a style of gardening that belongs to the first half of this century. One or two of the squares have central beds, which are planted out in the modern manner, but on most of the beds are only straggling representatives of the flowers of September, such species as the Sunflower, "Aaron's Rod," Michaelmas Daisy, Marigolds, Saxifrages, with some Dahlias and China Asters looking in poor condition. Belgrave Square may be said to have the advantage of its neighbour—its one garden from its dimensions allows of a better arrangement, and it would seem the residents bestow more attention upon this than the Eaton Square folks do upon their green domain; also there are fewer trees generally and fewer Ashes in particular. The Elms, placed in pairs at the four entrance gates in 1828, are apparently thriving. Round the greater part of the square within the Privet hedge is another of Lilacs. There are many evergreens, including some fine Aucubas, and in the centre of the ground are shrubberies with flower beds interspersed. One misses the Azalea in this and the other squares, the more because it was formerly much cultivated in the Chelsea nursery gardens.

In the smaller Chester Square garden I observed a fine Black Poplar amongst other trees of the kinds already mentioned, also a Mountain Ash (*Pyrus Aucuparia*) near the railings, a tree not frequent about London, and the austere berries on which I was solicited to pick by a party of juveniles.—J. R. S. C.

THE ENGLISH ARBORICULTURAL SOCIETY.

THE above Society has been formed about twelve months, and is in a very flourishing condition, numbering over 120 members. They have had three excursions, the first to the Forestry Exhibition in Edinburgh last year; the second to Lowther Castle in July last, when they were joined by the Scottish Arboricultural Society at Carlisle, and were entertained in a sumptuous manner by Mr. Watt, of Messrs. Little & Ballantyne, Knowfield Nurseries. The third excursion was to Cragside, through the kindness of Sir Wm. Armstrong, on Friday last. The members were much pleased with the reception given to them by Sir William Armstrong and his Steward Mr. Wm. Bertram.

Cragside has been planted in about twenty years. It was then, as it is named, a bare cragside, but by judicious planting is now, perhaps, not surpassed for sylvan scenery, embracing as it does about 1400 acres planted, 100 of them with Coniferae, ornamental and American plants. The planting of forest and ornamental trees has been at the rate of about 250 acres annually the last three years. One firm alone, Messrs. Wm. Fell & Co., Wentworth Nurseries, Hexham, supplied last year 300,000 Scotch Firs. The members of the Association dined at Rotbury under the presidency of Mr. T. P. Dods, supported by the energetic Secretary, Mr. J. Davidson. Mr. Watt of Messrs. Little & Ballantyne, Carlisle, stated that one gentleman present had given to his ducal employer in twenty-five years £100,000 for timber, averaging 30s. per acre per annum for ground not worth 2s. 6d. per acre, hence the importance of such an association. The Chairman also gave some interesting statistics of timber in America, the decline of it, and that planting has not been done to keep pace with the demand.—B. COWAN.

TRINITY COLLEGE BOTANIC GARDENS, DUBLIN.

I HAVE returned from a holiday run through Munster, Leinster, and Ulster, and amongst the most agreeable memories are those of the few hours I had with Mr. Burbidge, the respected Curator of these Gardens. This gentleman has the happy faculty of making perfect strangers quite "at home," not merely personally, but with the thousands of occupants of beds, borders, and the various houses. He has some anecdote or reminiscence to tell of that venerable shrub or this newly introduced hardy flower, some peculiar property of plants in the medicinal department; or, if you go into the stoves, he at once introduces you to a number of old acquaintances of his from Java and Borneo. I have on previous occasions through your columns detailed at some length a few of the occupants of the large Palm house, including *Arecas*, *Calamus*, *Cocos* (including the beautiful *C. Weddelliana*), *Chamaedorea*, *Thrinax*, *Kentias*, and *Acanthophaea*, &c., with some handsome tropical climbers, Bamboos, Lemon trees, Bread Fruit, and Sago. I also recollect in 1883, about this time, noticing some curious and rare plants in the stoves and Orchid houses, also in the cool and warm fernery, while still more interesting would be the various pits and cool frames. There is a *Sarracenia* and *Nepenthes* pit containing complete collections, and specialists will know what this means. Even more interesting is the peculiar summer method of treating *Todeas* and *Killarney Ferns* adopted by Mr. Burbidge. To all outward appearance the structures resemble a common frame, but the inside is excavated below the level of the surrounding soil and rocks; chasms and miniature waterfalls are made to resemble the native habitat of those shade and moisture-loving Ferns.

In other adjoining cool frames and pits are many varieties, especially among alpine plants; for instance, in the *Primula* group, not now alluding to some curious Alpine *Auriculas*, or the various forms of *Primula Sieboldi*, there was the Bird's-eye Primrose (*P. farinosa*), *P. Clusiana*, *P. denticulata*, *P. obconica*, and *P. scotica*, to which may be added *P. rosea*, *P. spectabilis*, the Sikkim and Abyssinian Primroses. *Polyanthus* and other choice Primroses, that take care of themselves outdoors, had quiet half-shaded nooks and corners here and there beside hedges or walls, as Mr. Burbidge finds nothing injures the better and choicer sorts of this family so much as hot summer sun, which generates red spider and the inevitable canker and swelling of the root stem, more than once alluded to by Mr. Wolly Dod, as having deprived him of some of his favourites in Cheshire. There was there some curious hardy succulents and Cacti, which brought us to the long range, divided into several compartments, some for cool Orchids, foliage plants, select Azaleas and Camellias, the rarer and better class of greenhouse plants not often met with elsewhere. An old favourite of fifty years ago, *Fuchsia corymbosa*, with glorious pendent bunches of bloom, forcibly reminded us of this latter fact when leaving this range. *Chrysanthemums*, a complete collection of every introduced variety up to last spring, are well grown, and had a special glass range preparing for their reception to bloom in later on.

Where shall I commence to give your readers an idea, even a faint one, of the wealth of showy, rare, and curious hardy border flowers? Seven special numbers would be insufficient if I were to include the cultural details. Without moving further than the front of this long glass range, we are just in time to see the new *Tigridia conchiflora* and *T. c. alba*, and having for company the little beauty, *Papaver nudicaule*, and *P. n. album*,

too seldom seen. A step further, and we see *Crinum*s, *Belladonna* *Lilies*, rare *Veronica*s, *Eucomis punctata*, *Schizostylis coccinea*, *Pyrethrum serotinum*, *Phlox Nelsoni*, and *P. amoena*; some of the more tender *Mallows*, *Hellebores*, *Anemone pulsatilla*, and many others. To enjoy this garden the visitor should come at four different periods, one at least being the spring, to see the *Narcissi*—one of the largest named collections in Europe being here. Equally pleasing would be the *Lilies*, *Irises*, *Anemones* (a speciality), *Pæonies*, *Hellebores*, *Campanulas*, *Phloxes*, *Columbines*, various *Composites*, *Dianthus*es, *Veronica*s, *Carnations* and *Pinks*, *Thalictrums*, *Linums*, double *Lychnis*, *Stokesia cyanea*, which I can merely name.—W. J. MURPHY, *Clonmel*.

STEPHANOTIS AND GARDENIAS.

In a somewhat remarkable manner Mr. Muir has directed attention to two of the choicest inhabitants of our stoves, though few, I feel sure, will follow his advice and throw them away. Apart from the value which might be set upon them individually, we have only to refer to the advertising columns of the horticultural press to learn that they are still required in quantity, and so it will continue, I venture to predict, till the cut flower trade passes out of fashion. Those that do not appreciate their odour are not compelled to purchase, hence Mr. Muir has acted as most men would do provided the blooms were little valued by their employers, and this is very good reason for your correspondent to discontinue their culture; still it by no means lessens their worth and general usefulness, and while quite agreeing in one particular with Mr. Muir as to the powerful fragrance of the *Gardenia*, it may be observed that many choice flowers are similar, taking for examples early *Ornament* *Hyacinths*, *Tuberose*s, *Paper White Narcissus*, in this case even stronger than the *Gardenia*. A grand flower is the old *Double White*, and also the fringed white *Camellia*, but we must have wire to bring them into use—in this case devoid of fragrance, and which so many long for. Many stove plants, like children, require constant attention to keep them clean, and while this may take much time we certainly cannot dispense with our most valuable flowering plants on this account; for if we did, *Bonvardias*, *Gardenias*, *Eucharises*, *Stephanotis*, *Euphorbias*, *Dipladenias*, *Epiphyllums*, *Hoyas*, *Ixoras*, and a host of others would have to be thrown out. With all due respect to the queenly *Lily of the Amazon*, so much valued and admired, any arrangement of it alone must be very formal. It would need some of the "plenty of other flowers, which are just as pretty and sweet," to which your correspondent refers, but which he fails to cite, to make the arrangement pleasing.

That *Stephanotis* and *Gardenias* may be kept clean in a stove I know well, and that they pay to keep clean I am also convinced, and anyone who will persevere in this direction will be well paid; if he neglects them he never will. We have nothing among stove-flowering shrubs to equal the *Gardenia* for floriferousness, and its profuse-flowering qualities are unique. In support of the value of these charming flowers I append the following quotation from the *Walsall Observer* of February last, which, in reviewing the extensive plant-growing establishment at Harefield Grove, says:—"Gardenias for instance fetch good prices, their lovely fragrant flowers being especially in request for wedding bouquets, and command from 12s. to 50s. per dozen blooms, a house 130 feet long and 18 feet wide being devoted to them." We have many valuable *Orchids*, *Lily of the Valley*, *Hyacinths*, and other bulbous plants, *Jasmines* of sorts, and many more; but we cannot afford to "throw" out the *Gardenias* and *Stephanotis* from our stoves unless Mr. Muir can furnish some better guarantee as to what of equal or greater value can fill their places.—E. JENKINS.

INTERNATIONAL POTATO EXHIBITION.

OCTOBER 7TH, 8TH, AND 9TH.

WITH the support of numerous influential friends, an experienced Committee, and an energetic Secretary, the Potato Exhibition at the Crystal Palace has been rendered one of the most important annual events of the autumn season. Liberal prizes in judiciously arranged classes have during several years produced extensive and thoroughly representative displays of the indispensable tuber, which have unquestionably done valuable service in many ways. They have called public attention to the importance of the crop, stimulated the raising of varieties, and given a useful impulse to the trade which only those most concerned can accurately estimate. The promoters and supporters well deserve the repeated successes which have rewarded their efforts.

The Show, which opened on Wednesday and continues to-day (Thursday) and to-morrow, is like its predecessors, satisfactory in most respects. Though as a consequence of the season the tubers generally are not quite so large as usual, they are very even and clean, and in consequence the competition is extremely close.

As the awards were not made until just as we were going to press, we can only give the names of the prizewinners in the principal classes. In all the classes each dish contained nine tubers, and over 1000 dishes were entered in competition, in addition to several collections shown by seed firms.

Twenty-four varieties, fourteen entries.—The first prize, offered by Messrs. J. Carter & Co., was won by Mr. T. Hughes, gardener to Colonel Cartwright, Byfield, Northampton, with the following varieties:—*Adirondack*, *Sutton's*

Early Regent, *Crimson Beauty*, *Schoolmaster*, *Vicar of Laleham*, M.P., *Sutton's Reading Russet*, *Snowdrop*, *Rufus*, *Fidler's Prolific*, *Blanchard*, *Chancellor*, *Queen of the Valley*, *Cosmopolitan*, *Edgcote Purple*, *Sutton's First and Best*, *Beauty of Hebron*, *Edgcote Seedling*, *The Dean*, *Sutton's Favourite*, *Sutton's Prizetaker*, *London Hero*, *Lord Rosebery*, and *Sutton's Woodstock Kidney*. These were beautiful even samples, and amply merited the award, which it may be added was obtained by the same exhibitor last year. Second Mr. W. Ellington, West Row Gardens, Mildenhall, Suffolk. Third Mr. E. S. Wiles, gardener to R. A. Cartwright, Esq., *Edgcote*, Banbury. Fourth Mr. E. Chopping, The Mills, Milton. Fifth Mr. William Kerr, Dargavel, Dumfries. Sixth Mr. G. Allen, gardener to Sir F. Burdett, Bart, Ramsbury Manor. Seventh Mr. J. Lye, Cliffe Hall, Market Lavington.

Twelve varieties, nine entries.—James McIntosh, Esq., Oatlands Park, Weybridge, gave the first prize, which was won by Mr. C. W. Howard, Bridge, Canterbury, with *Duke of Albany*, *Adirondack*, *Magnet*, *The Dean*, *Vermont Champion*, *Reading Russet*, *Chancellor*, *Beauty of Hebron*, *Schoolmaster*, *Vicar of Laleham*, *Ashtop Fluke*, and *Mr. Breese*. Second, Mr. Tom Tooley, Newlands, Banbury. Third, Mr. T. Gilmour, Hawkharst, Kent. Fourth, Mr. G. Akhurst, gardener to Mrs. Bramah, Davington Priory, Faversham. Fifth, Mr. R. West, gardener to J. R. Wigram, Esq., Northlands Salisbury; and sixth, Mr. Woolford, Little Missenden Abbey, Great Missenden.

Nine varieties, sixteen entries.—All the prizes were given by Mr. C. Fidler, Reading. First, Mr. J. Hughes. Second, Mr. Ellington. Third, Mr. E. S. Wiles. Fourth, Mr. W. Kerr. Fifth, Mr. E. Chopping; and sixth, Mr. R. West.

Six varieties, twenty entries.—The premier prize offered by Messrs. Webb and Sons, Stourbridge, was awarded to Mr. J. Hughes, for handsome tubers of *Reading Russet*, *Snowdrop*, *First and Best*, *London Hero*, *Chancellor*, and *Edgcote Purple*. Second, Mr. S. Rogers, Whittlesea. Third, Mr. W. Ellington. Fourth Mr. E. Chopping; and fifth Mr. P. McKinlay, Anerley.

Three white round varieties, nineteen entries.—First Mr. R. Dean, Ealing, with *Schoolmaster*, *London Hero*, and *Harvester*, beautiful even tubers. Second Mr. J. Hughes. Third Mr. E. Chopping. Fourth Mr. W. Ellington; and fifth Mr. John Hughes.

Three dishes of coloured round varieties, twenty-two entries.—First Mr. L. Stanton, Maidford House, Towcester, with *Vicar of Laleham*, *Reading Russet*, and *Adirondack*. Second Mr. C. W. Howard, Bridge. Third Mr. E. S. Wiles. Fourth Mr. W. Kennard. Fifth Mr. W. Ellington.

Three white kidney varieties, sixteen entries.—First, Mr. E. S. Wiles with *Snowdrop*, *Cosmopolitan*, and *Edgcote Seedling*. Second, Mr. J. Hughes. Third, Mr. W. Ellington. Fourth, Mr. E. Chopping; and fifth, Mr. John Hughes.

Three coloured kidney varieties, fourteen entries.—First, Mr. E. S. Wiles with *Mr. Breese*, *Sutton's Prizetaker*, and *Edgcote Purple*. Second, Mr. E. Chopping. Third, Mr. J. Hughes. Fourth, Mr. W. Ellington; and fifth, Mr. W. Kerr.

Single dishes.—All these classes were confined to English-raised varieties. Any white round variety.—First, Mr. C. W. Howard with *Schoolmaster*. Second, Mr. R. West. Third, Mr. R. Dean; and fourth, Mr. W. French Harlow. Twenty-two entries. Any coloured round.—First, Mr. C. Stanton with *Vicar of Laleham*. Second, Mr. J. Lye. Third, Mr. C. W. Howard; and fourth, Mr. E. G. Wiles. Twenty-one entries.

Any white kidney variety.—First, Mr. C. W. Howard with *Chancellor*. Second, Mr. J. Hughes. Third, no name; and fourth, Mr. W. Kerr. Twenty-three entries. Any coloured kidney.—First, Mr. J. Hughes with *Cardinal*. Second, Mr. E. S. Wiles. Third, Mr. G. Allen; and fourth, Mr. W. Kerr. Eighteen entries. Any new white variety not offered to the public before 1884.—First, Mr. E. Chopping with *Chancellor*, very handsome. Second, Mr. J. Hughes with *Fidler's Prolific*. Third, Mr. J. Hughes with *Doctor*. Fourth, Mr. W. Ellington with *Chancellor*. Fifteen entries.

Extra classes.—Six varieties, to include *Ashtop Fluke*, *Cosmopolitan*, *Sukreta*. All the prizes were offered by Messrs. J. Carter & Co, High Holborn. First, Mr. J. Lye with *Ashtop Fluke*, *Cosmopolitan*, *The Dean*, *Schoolmaster*, *Sukreta*, and *Reading Russet*. Second, Mr. J. Forder, Hillington Hall.

Four dishes, to include *Fidler's Success* and *Prolific*.—First, Mr. J. Hughes with the varieties named and *First and Best* and M.P. Second, Mr. E. S. Wiles with *Edgcote Purple* and *Reading Russet*, in addition to the others. Third, Mr. W. Ellington. Fourth, Mr. C. Ross, Welford Park, Newbury; and fifth, Mr. W. Woolford. In the classes for seedling Potatoes the awards had not been made when we left the exhibition. The miscellaneous contributions were not quite so numerous as usual, but Messrs. Webb & Sons, J. Carter & Co., Harrison & Sons, and C. Fidler had large collections.

FRUIT SHOW AT THE CRYSTAL PALACE.

OCTOBER 7TH AND 8TH.

APPLES and Pears and other hardy fruits were staged in large quantities at the Crystal Palace on Wednesday. On the eve of going to press we are unable to describe the Exhibition fully, but the fruit was fully up to the average in quality. The following are brief details of the awards; further particulars will be given next week. Upwards of 2000 dishes were shown including about 13,000 fruits, six fruits to each dish.

Class A, for the best exhibition of kitchen and dessert Apples, produced six competitors, who staged in all 733 dishes of six fruits each. The first prize was awarded to Messrs. G. & J. Lane, nurserymen, St. Mary Cray, Kent; the second to Messrs. G. Bunyard & Co., The Old Nurseries, Maidstone; the third to Messrs. Thomas Rivers & Son, nurserymen, Sawbridge-worth; and the fourth to Messrs. Paul & Sons, The Old Nurseries, Cheshunt.

Class AA, twenty-four dishes of Apples for amateurs. Mr. S. Ford, gardener to W. E. Hubbard, Esq., Leonard's Lee, Horsham, staged a splendid collection and took first prize; the second going to Mr. A. Waterman, gardener to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford; and

third to Mr. H. Davis, gardener to H. S. Lake, Esq., Furlawn House Chiswick.

Class B, the best collection of Pears, six fruits each.—Seven collections were in competition, and 331 dishes were staged in all. Messrs. Rivers & Son secured the first prize somewhat easily, the second falling to the share of Mr. J. Butler, gardener to N. J. Thomas, Esq., Orchard Lane, Sittingbourne; the third to Messrs. G. Bunyard & Co., and the fourth to Mr. Waterman. Class BB, twelve dishes Pears for amateurs.—This was a good class, the first prize being awarded to Mr. A. Waterman, the second to Mr. Forl, and the third to Mr. C. J. Goldsmith, gardener to C. A. Hoare, Esq., Kelsey Manor, Beckenham, fifteen collections competing. Class CC, twelve dishes of Apples for amateurs. Mr. J. Gilmour, gardener, Hawkhurst, Kent, was placed first; Mr. Dance, gardener to Colonel Lowe, Gosfield Hall, Ha'stead, Essex, second; and Mr. G. Collins, gardener to F. A. Rose, Esq., Wandsworth Common, third.

VEGETABLES.—For the best collection of vegetables (open) Mr. A. Waterman, who showed fruit very well, was an easy first. He staged a very fine collection, which included many noteworthy examples. Mr. J. Neighbour, Bickley, Kent, was second, also showing very well; Mr. T. A. Beckett, Cole Hatch Farm, Penn. Amersham, was third, and Mr. C. J. Waite fourth. For the best twelve dishes of vegetables from amateurs Mr. C. J. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Essex, was adjudged the principal prize for an excellent collection. The second prize was won by Mr. T. A. Beckett, and the third by Mr. Waterman. A class was also provided for cottagers, but only two entries were received.

For a collection of Ornamental Gourds Mr. C. Osman, Southern Metropolitan District School, Sutton, was awarded first prize for a large and complete group, including about thirty sorts. Mr. G. Sturgess, gardener to Dr. E. Fre hfield, Chipstead, was second; and Mr. Jas. Sharpe, gardener to F. Hatchett, Esq., Parkfield, Grove Park, Lee, third. Mr. C. Osman was again well to the fore in the class for Pumpkins and Gourds, Mr. Sturgess being second, and Mr. Sharpe third. The last named exhibitor sent the largest Pumpkin, a monstrous specimen, weighing 108 lbs., securing him the first prize; Mr. Osman was second with one weighing 67 lbs.; and Mr. Sturgess third, with a fruit 48 lbs. in weight.

MISCELLANEOUS.—In the miscellaneous classes some notable exhibits were admired. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, sent a large and very fine collection of Apples and Pears, 120 dishes of the former, and thirty dishes of the latter being staged. Messrs. William Paul & Son, Waltham Cross, Herts, also sent a splendid collection, comprising upwards of 200 dishes; Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, London, S.W., were represented by a collection of more than 200 dishes, most of the fruit being of good quality. Mr. J. Butler showed a fine collection of Pears.

Amongst vegetables were a fine stand of Onions, including twenty-eight varieties, from Mr. H. Deverill, Royal Bulb and Seed Stores, Banbury. Mr. C. Osman showed a good collection of different vegetables, and a large group of tuberous Begonias from Messrs. John Laing & Co., Forest Hill, was much admired.

First-class certificates were awarded for the following Apples:—

Apple Prince Bismarck (J. Veitch & Sons).—A large culinary Apple, 3 to 3½ inches deep, globular in form, with a deep eye, of a white or greenish semi-transparent colour, with a few crimson streaks especially round the stalk. Very handsome and distinct.

Apple September Beauty (Laxton).—A dessert variety, of medium size, richly streaked with crimson. Showy and of good quality.



HARDY FRUIT GARDEN.

FOR our selections of fruit to be as useful as possible we must give the first place to twenty-four sorts of dessert Apples and twenty-four culinary Apples, selected the greatest number of times in a poll taken for the whole of Great Britain at the Apple Congress last year, naming them in the order given in the published lists by Mr. Barron under the auspices of the Fruit Committee of the Royal Horticultural Society.

DESSERT APPLES.—King of Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Pippin, Irish Peach, Devonshire Quarrenden, Sturmer Pippin, Scarlet Nonpareil, Court Pendu Plat, Yellow Ingestrie, Fearn's Pippin, Claygate Pearmain, Worcester Pearmain, Margil, Wyken Pippin, Cockle Pippin, Court of Wick, Red Astrachan, Adams' Pearmain, Mr. Gladstone, Golden Pippin, Mannington's Pearmain, Gravenstein.

CULINARY APPLES.—Lord Suffield, Dumelow's Seedling, Keswick Codlin, Warner's King, Blenheim Orange, New or Winter Hawthornden, Cellini, Ecklinville Seedling, Stirling Castle, Hawthornden, Manks Codlin, Golden Noble, Cox's Pomona, Alfriston, Emperor Alexander, Northern Greening, Tower of Glamis, Mère de Ménage, Beauty of Kent, Lord Derby, Yorkshire Greening, Annie Elizabeth, Norfolk Beefing, Loddington Seedling.

The foregoing selections cannot fail to be very useful for private gardens. If, however, we had to plant trees by the hundred for a market garden we should confine our planting to a few sure-fruited sorts, such as of dessert sorts: Kerry Pippin, King of Pippins, Cox's Orange Pippin, Margil, Fearn's Pippin, and Court Pendu Plat; and of culinary sorts:

Keswick Codlin, Duchess of Oldenburgh, Warner's King, Golden Noble, Blenheim Pippin, and Gooseberry.

PEARS.—Summer Doyenné, Citron des Carmes, Beurré Giffard Jargonelle, Fondante de Cuene, Desiré Cornélius, Souvenir du Congrès Summer Crasanne, Williams' Bon Chrétien, Colmar d'Été, Fondante d'Automne, Doctor Hogg Bergamot, Duchesse d'Orléans, Comte de Lamy, Madame Treyve, Summer Beurré d'Arenberg, Robert Hogg, Fondante de Charneau, Marie Louise, Marie Louise d'Ucole, Doyenné du Comice Knight's Monarch, Seckle, Urbaniste, Maréchal de Cour, Genera, Todleben, Dana's Hovey, Comte de Flandre, Hampson's Forelle, Josephine de Malines, Jewess, Besi vaet, Winter Nelis, Beurré Superfin, Huyshe's Victoria, Glou Morceau, Easter Beurré, Elizé d'Heyst, Olivier des Serres, March Bergamot, Madamo Millet.

PEARS FOR A MARKET GARDEN.—Summer Doyenné, Lammas, Windsor, Caillot Rosat, Bellissime d'Automne, Williams' Bon Chrétien, Yat, Autumn Bergamot, Hesse, Marie Louise, Beurré Clairgeau, Eyewood, Louise Bonne of Jersey, Comte de Flandre, Beurré Bos, Beurré de Capiaumont, Rondelet, Catillac, Bishop's Thumb, Broompark, Fertility, Winter Nelis.

TWELVE PEARS FOR A SMALL GARDEN.—Williams' Bon Chrétien, Fondante d'Automne, Comte de Lamy, Doyenné du Comice, Knight's Monarch, Dana's Hovey, Comte de Flandre, Jewess, Glou Morceau, Winter Nelis, Easter Beurré, March Bergamot.

COOKING PLUMS.—Early Rivers, Diamond, Early Orleans, Victoria, Lafayette, Prince Englehart, Prince of Wales, Automne Compôte, Belle de Septembre, Grand Duke, Cluster Damson.

DESSERT PLUMS.—Green Gage, Purple Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Washington, Bryanston Gage, Denniston's Superb, Jefferson, Coe's Golden Drop, Kirk's Blue Impératrice.

SELECT PLUMS FOR A SMALL GARDEN.—Green Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Coe's Golden Drop, Blue Impératrice, Early Rivers, Victoria, Diamond, Early Orleans, Belle de Septembre, Cluster Damson.

PLUMS FOR A MARKET GARDEN.—Early Rivers, Diamond, The Czar, Blue Prolific, Perdrigon, Violet Hâtive, Early Orleans, Corte's Nota Bene, Dauphine, Belgian Purple, Grand Duke, Washington, Prince of Wales, Victoria, Prince Englehart, Pond's Seedling, Coe's Golden Drop, Belle de Septembre, Prune, and Cluster Damsons.

CHERRIES.—Early Purple Gean, Early Rivers, Belle d'Orléans, Empress Eugénie, May Duke, Black Tartarian, Governor Wood, Archduke, Reine Hortense, Transparent, Bohemian, Black Bigarreau, Bigarreau, Belle Magnifique, Elton, Late Duke, Morello.

Select Cherries for a Small Garden.—Early Purple Gean, May Duke, Bigarreau, Governor Wood, Belle Magnifique, Morello.

Cherries for a Market Garden.—Early Purple Gean, Early Rivers, Adam's Crown Heart, Elton, White Heart, Black Heart, Waterloo, May Duke, Black Eagle, Flemish, Kentish, Bigarreau.

PEACHES.—Alexander, Early Beatrice, Early Albert, Rivers' Early York, Dr. Hogg, Grosse Mignonne, Royal George, Noblesse, Belle Bauce, Barrington, Walburton Admirable.

NECTARINES.—Advance, Lord Napier, Stanwick Elruge, Downton, Rivers' White, Pitmaston Orange, Balgown, Pine Apple.

Figs.—Brown Turkey, Brunswick. Apricots.—Kaisha, Large Early, Moorpark, Peach, Orange. Medlars.—Dutch, Nottingham. Nuts.—Cosford, Pearson's Prolific, Cob, Red Filbert, Duke of Edinburgh. Raspberries.—Prince of Wales, Carter's Prolific, Yellow Antwerp, Belle de Fontenay.

GOOSEBERRIES.—Early Sulphur, Green Gage, Red Warrington, Red Champagne, Yellow Champagne, Ironmonger, Keen's Seedling, Pitmaston Green Gage, Roaring Lion, Crown Boh, Green Walnut. Currants.—Red Dutch, Victoria, White Dutch, Lee's Prolific Dutch.

FOR MARKET GARDEN.—Gooseberries.—Whitesmith, Early Sulphur, Velvet White, Crown Bob, Warrington, Lancashire Lad, Red Rifleman, Golden Drop, Monarch. Currants.—Red Scotch, Red Dutch, Baby Castle, Black Naples, Baldwin's Black, Lee's Prolific Black. Raspberries.—Carter's Prolific, Prince of Wales, Fastolf, Red Antwerp, Belle de Fontenay.

FRUIT FORCING.

VINES.—*Early Houses*.—An examination of the inside borders of houses intended for starting next month should be made at once, and in case they have become very dry a supply of water at a temperature of 85° to 90° will be necessary, as every particle of the soil should be properly moistened before the Vines are started. If the Vines are weak from carrying heavy crops or a long course of early forcing, tepid liquid manure may be employed. Until the time arrives for closing the house ventilate freely.

Early Vines in Pots.—Examine these as they are placed in position for forcing. Top-dress with rich compost, enlarging the holes at the bottom and sides of the pot to allow of the roots finding their way into the plunging material, which is a consideration in crop and quality, also to allow the water, of which they require copious supplies, to pass away freely. Remove young Vines intended for cutting back or planting in the spring to a cool house or west wall, where they can be made secure from injury by wind, protecting pots with spent tan or litter.

Ripe Grapes.—From now until the Vines are clear of foliage will be found the most trying period in the year for keeping Grapes. Black

Hamburgs intended for use through November, and previously divested of all laterals, may be cut back to within two eyes of the bunch, and shoots from which the Grapes have been cut may also be shortened where the wood is crowded. If the inside borders are damp a covering of dry fern or dry straw will absorb much moisture, and gentle fires will be necessary. Examine the bunches twice a week, removing decayed berries, and the house must be cleared of plants, the glass being kept clear of all accumulations likely to cause damp.

Renovating Borders.—The renovation of all midseason borders have been, or ought without further delay to be, brought to a close, and late houses in which the Grapes do not finish well must be attended to. If the Vines have the run of outside as well as inside borders, one or other may be taken out and remade at any time after the Grapes are ripe without detriment to the present or the succeeding crop of Grapes. Dry mild weather is the best for operations of this kind, as the roots are less liable to be injured, and the compost does not become close. Well-drained borders of moderate width, and about 30 inches depth, are best adapted for Vine culture, especially in low situations, as they are least costly, warmer, and take more stimulating food with impunity than large masses of rich matter over which the cultivator has much less control. When the borders are well made and only require keeping up to the mark by the annual top-dressing, all old mulching may be removed down to the roots, substituting good compost, consisting of rough turfy loam, crushed bones, and charred refuse. When the foliage is changing colour place old lights or shutters over the outside borders, with a sharp pitch to the front for throwing off water, but they ought not to be closed at the ends, as a free circulation of air will be needed until the time arrives for cutting and removing the fruit to the Grape room, when the lights may be taken off, a good layer of litter being sufficient for keeping out severe frosts.

PLANT HOUSES.

Shading.—Plants must now have full exposure to sunshine, the blinds being thoroughly dried and stored away for the winter. It is always a good plan to prepare plants for this change by exposing them gradually to more for a few weeks before shading is entirely dispensed with, and then no check or injury to the plants will result. Ferns will bear all the sun we are likely to get after this date if they have been exposed to plenty of light during the growing season; but if they have been heavily shaded their fronds will be weak and tender, and must still be shaded for a few weeks. Phalænopses that have been heavily shaded must now be exposed to as much light as possible, but this must be done gradually, using the blinds only for a few hours during bright sunshine until they will bear full exposure. It is necessary to harden and prepare them as much as possible for the winter, or they will not remain in a healthy condition during that trying season. The blinds will be needed on the south side of the Odontoglossum house for some weeks yet.

Cleaning Houses.—Clean all houses in which plants are to be stored for the winter, thoroughly washing the glass and woodwork with hot water and softsoap, limewash the walls, and renew the moisture-holding material upon which the pots stand. Every portion of the houses should be made perfectly clean and sweet. Clean the paths and curbs if formed of stone by using a little chloride of lime; this is a much quicker process of cleaning stonework than by means of scrubbing, and will in a few minutes leave the stone as clean as when new. The glass outside must also be thoroughly washed. It is a great mistake to leave this work until frost compels the plants to be taken under cover. Our plan is to house all plants first from cold and other frames that require a certain amount of rest during the autumn and winter, and then utilise their places for hardier plants until the houses in which they are to be stored are prepared for them.

Azaleas.—Where these have been standing outside to ripen their wood lose no time in getting them under cover. If they remain outside much longer they are very liable to become saturated at their roots by heavy rains. When the plants stand outside until the soil is saturated they generally throw off a very large per-centage of their leaves after they are housed. As the work of housing proceeds, carefully examine them, and if any trace of thrips can be found, the plants must be well syringed with a solution of tobacco water in which about 1 oz. of softsoap has been dissolved to each gallon of the mixture. If this precaution is taken to examine and thoroughly clean any infested plants, they will give no further trouble during the whole of the winter.

Heaths and Epacris.—Remove these at once into cold frames until the house is cleaned which they are to occupy for the winter. Erica gracilis and hyemalis often turn blind and fail to open their flowers through being left outside until the soil about their roots becomes saturated. This can be prevented by placing them in cold frames, so that they can be protected from heavy rains. Ventilate the frames freely all night when mild, and remove the lights during the day in fine weather. Epacris require the same treatment. Black fly has been very abundant this season, and upon examining our plants we found a quantity established on the upper portion of the shoots. This is the first time we have observed these plants attacked by aphides. The plants have been dipped in a solution of tobacco water and the insects destroyed. Any plants that may have been similarly affected must be carefully examined again when they are housed, for if any insects remain upon them they will spread and probably do much injury when the plants are introduced into heat to force them into flower. These plants must be watered with great care, or else the fine silk-like roots soon perish. Very frequently they are kept too dry after they are housed, and no treatment will sooner prove fatal to the plants. On no account allow them to suffer by an insufficient supply of water.

THE BEE-KEEPER.

USEFUL HINTS ON BEE-KEEPING.

THE honey season for 1885 is now closed. On the whole it has been a productive one, although the low temperature in the north of Scotland has been disastrous to many hives. In fact, considering the many cold days and want of sunshine, with frosty nights every month, it is surprising where the bees could gather so much honey as they have done this year. Where they have been well managed, large takes have been realised, 150 lbs. having been had from some hives, and, as nearly as I can judge, half a hundredweight will be the average yield from each hive, leaving plenty inside to tide the bees over till next May.

The loss of queens through swarming or having been deposed, owing to the nature of the year taxing the queen in a manner similar to that of stimulative feeding, has been great. Bees were swarming so late as the middle of September, and so far as I have observed, thirty per cent. have done so, or have deposed their queen. To keep such hives will but disappoint their owner when spring comes. Now is the time to put matters right. An experienced bee-keeper can easily tell by the movements of the bees and the molestation they get from stranger bees whether a hive is queenless or not. Where young queens have been joined lately there need be little uneasiness; but, to be sure all is right, feed a little for a few days, until the bees are induced to rear the young. When they are observed carrying pollen freely, it may be taken that all is right, and will do for straw hives where a small patch of sealed brood may not be so easily seen as in frame hives. When these are inspected, make sure that the brood is worker, drone seals being raised considerably and convex, while that of the worker is flattish.

Queens to supply the defect may be had at the present time, either from importers or bee-keepers who have spared the lives of some deposed ones. I have several standing on the mantelpiece in a match-box for nearly a fortnight, lively as crickets.—A LANARKSHIRE BEE-KEEPER.

BEE-KEEPING IN MEXICO—PRODUCTION OF WAX.

I AM a resident of Mexico, and derive much pleasure and instruction reading there your valuable paper. I now beg you to answer in your columns the following query.

By what means, entirely regardless of trouble or expense, can the production of wax be artificially increased in a country possessing a very mild, even, and fine temperate climate, with plenty of flowers nine months in the year? Wax in Mexico has a very large demand, and sells readily when bleached at 4s. per lb. and sometimes higher; and although honey sells also well (1s. per lb.) the demand is limited, and on a large production the price is sure to decline very considerably. Bees do exceedingly well there, even with the most primitive systems, which are the only ones used, but the problem is to produce the greatest possible quantity of wax at the expense of everything else.

I enclose circular on "emigration" to my land, offering more liberal terms and greater solid inducements than have ever been presented to emigrants before by any other country of the world. In the depressed condition of all agricultural business in England, as well as in the United States, Canada, Australia, and all other countries where emigrants have been going before, it is quite interesting and very important to those who are looking for a solution to their present difficulties to know that such splendid opportunities are offered to them. By saying a few words on this matter you will surely do an immense good to the farming community and others.—OMEGA.

[Bee husbandry for the production of wax should be conducted much on the same lines as for obtaining honey. Without the latter there cannot be the former. But there are some points which should be kept constantly in view—viz., young queens in plenty, very large frame hives, and strong swarms. It will be advisable to join a young fertilised queen every three months, and to accelerate her introduction

we would cage her some days before the deposition of the reigning one. Raising plenty of queens in so fine a climate will be very easy, but they should be reared from a tolerable strong stock, and divided into nuclei just before hatching. The Cyprian and Syrian races are capital wax-workers as well as producers. To produce the most wax the hive should be 3 feet high, and having eight or nine frames with intermediate bars not more than 9 inches apart; less by 2 inches might be preferable, because large slabs of comb are liable to collapse during warm weather. A number of the hives might be kept for breeding purposes to strengthen the main stocks. Every effort should be used to have strong stocks and plenty of them, and when near the end of the nine months' honey season an entire renewal of queens should be made. Although a frame hive has been advised as being a good one for raising queens, the Stewarton type of hive will be found to answer the purpose well. Block and tackle mounted on a frame will be required for enlarging and handling these hives, because the top ones should be those removed, and often must be enlarged from beneath to keep up the breeding. As the honey is taken it should be immediately fed back (or when the bees will take it, and the weather is favourable not to interrupt outside gathering). This system of feeding back honey to produce wax should be rigidly carried out towards the close of the outdoor gathering. Having plenty of bees at the end of the season to work wax from the honey gathered throughout the year will be a means to that end, though it may not be the solution of the problem.

The centrifugal extractor should not be used, or if so, as seldom as possible. The Lanarkshire Presser (35s.) is a capital machine for expressing all honey, about 5 per cent. only being left, leaving the wax in firmly compressed cylindrical cakes ready for extracting the wax in its pure state, either by solar heat or by steam extractor. The divisional hive has been recommended because the honeycombs which have the most wax can be removed and pressed without touching the brood, which should be left intact. Feed back the honey at every opportunity, and continue the pressing when sealed is the best way of reducing the honey to wax. The extracted wax from the pure comb will require little or no bleaching.

"The best hive in creation," for all purposes and climates, and particularly for wax-raising, will be described in an early number of this Journal.]

NOTES ON BEES.

"CAMBRIDGESHIRE BEE-KEEPER," I am afraid, lacks the necessary experience to criticise our Lanarkshire friend. My advice to him is, "Gain more experience in the bee-keeping art that it may make him a sadder and wiser man. I have gained much information from your correspondent, "Lanarkshire Bee-keeper," and have proved his teaching to be sound. When I first started bee-farming I had a half-starved swarm given me that I might try to keep alive for the winter. Soon after an old stock was given me for the driving, which I accomplished almost to the last bee. These I united with the swarm. I had several mishaps from first to last, especially in the feeding. On one occasion I gave the bees syrup in a cracked jar, and thus I lost hundreds of bees. This occurred while I was a reader of the *British Bee Journal*. Soon after I commenced reading the correspondence in the *Journal of Horticulture* on bee-keeping, and I there found the first hint on perforated zinc flooring, and made a hive myself with a perforated floor. I have had another mishap with the syrup since, but thanks to the perforated zinc the bees had a better chance of recovering than before. Perforated zinc, however, is not only useful in mishaps with syrup, but it lets the *débris* through, and withdrawing a slide is a very simple expedient for keeping a clean hive without the expense of surplus floorboards, drying, and the trouble of removing them.

My first hive was a tea-box, which cost a shilling, with a moveable box for the body hive manufactured by myself on the principle of the instructions found in the third number of "Amateur Work," with the difference that I made a moveable box instead of fixed sides. I gave my stock plenty of room in April, and supers (2 lbs. each) with narrow bottom bars in June, but it did not do very well, possibly from the fact that I was too fond of examining and manipulating them. I am afraid that if I had booked all my time in attending them I should show a very heavy deficit in my cash account. In June of this year I bought a swarm which issued from a straw skep, and set it to work on ten frames of foundation; and having fed them (slow feeding) for a few days I put on 2-lb. sections, and it was from this swarm that I got the greatest profit. I have now the old stock fed with over 30 lbs. of 2½d. loaf sugar, the swarm as a stock, and another stock composed of two driven ones. The old stock I have put into a body box 6½ inches deep from the top to the perforated zinc floor with ten frames of foundation, and although the frames are shallow I have added a bottom bar, and I purpose to make another body box the same depth filled with frames and to put it underneath the one they are now in about April next. I say underneath, because I shall make it without angled tin for slides, having the angled tin and slides on the box they are now in, and then on the top of these two boxes I shall put supers wrought by the manufacturer recommended by "A Lanarkshire Bee-keeper," provided the latter will purchase them

at a fair price. After the removal of the supers I shall extract the honey in the top box and remove the same, leaving the bees one box to winter in, as at present supers and 2-lb. sections will not sell here; in fact, people want something less than even pound sections.

Your correspondent, "Hallamshire," seems to think that stocks in skeps and swarms in bar-frames are best. Will your correspondent tell us what he does with stocks in the skeps after swarming, and also with the swarms in the bar-frames after the honey harvest? Any information in these matters will be pleasant reading for the long nights of winter.

I find it difficult to keep my smoker going when manipulating; in fact, as soon as it is set down it goes dead. I can remember when I was a boy that I dipped brown porous paper in a saltpetre solution for the purpose of forming a fuse to ignite fireworks at the end of a kite tail when in the air. Would paper thus dipped do any harm to the bees?

I find the specimen supers of "Lanarkshire" with the glass give the end view to the combs. I think it would be preferable if they could be made to give a side view of the outside comb. Can any of your readers give hints on preventing wasps entering hives besides contracting entrances?—BASIL.

THE HONEY MARKET.

THE numerous complaints constantly reiterated on all sides by bee-keepers who have honey to dispose of in either large or small quantities, are a sign that in the near future, if the time has not already come, the price of honey will be so low that the question of production will engage the thoughts of all having an interest in the industry. It is no use disguising the fact that comb honey in large supers is an absolutely unmarketable article; at any rate it is so in the city where I dispose of my surplus, and also in other towns where I have endeavoured to sell large amounts of comb honey at any price whatever. True, the Honey Company offered me for a large glass, some 40 lbs., the magnificent sum of 6d. a pound, nett weight, and also stipulated that I was to take all risk of damages and pay carriage, thus reducing the price to about 5d. a pound. I may be told that it is easy to sell such honey when it has been run from the comb at an extra price on account of its purity and freedom from taint of brood or other contaminating influences. My objection to this is that the trouble of running is not inconsiderable, then the wax has to be rendered down, there is also a great loss of weight, and after all so little do many of the grocers and Italian warehousemen with whom I have to deal appreciate the difference between the purest of honey and the inferior article, that they will only give the same price for honey run from supers as they offer for honey run from the combs, which have been used for brood and other purposes, which depreciate the flavour of the honey afterwards stored in them.

If small supers could be sold at a reasonable price there would not be so much ground for complaint; but this season I have had supers of glass, and wood and glass combined, of weights so varied as 6 lbs., 10 lbs., 12 lbs., 20 lbs., and 40 lbs., and have not been able to dispose of one, but have been compelled to run the whole, and bottle in 1 lb. jars. The sale of 1 lb. sections is to some extent more satisfactory, the prices they have realised this year being 1s. 2d. and 1s. 3d. per section, in quantities of two dozen and upwards. Run honey also in large quantities can be sold neatly labelled and in good clean glass jars at 1s. to 1s. 2d. per bottle, according to the quantity sold, but the majority of bee-keepers have had to sell at prices very much below this, although some have, on the other hand, obtained 1s. 6d. per lb. for their samples sold to the neighbouring residents in small quantities.

That there has been a great amount of honey produced during last year and this I am willing to allow, but it lends very small support to the statement often heard, that in a bad season honey will rise again to its old value, and there is this additional drawback that the constant importation of foreign honey will absolutely prevent there ever being so great a scarcity in England as to have the effect of sending up the price to a sum large enough in a bad season to pay better than a smaller price in an exceptionally good year. It is not well to jump to conclusions, and it is satisfactory to see that in Scotland supers meet with ready sale provided they are of convenient size; but notwithstanding, judging from what can be seen and what can be heard from those who deal in honey and sell it retail in large towns, the days of comb honey are fast giving place to a time when run honey only will be acceptable to the consumer, and it is the wants of the consumer that the apianian is bound to consider. If, then, this is the case, some other plan of obtaining honey must be advertised to than supers. For these reasons supers are expensive and are troublesome, less honey is stored in a super than in an enlargement given below, and more care and attention is required in the production of fine quality honey in supers than the difference in price between the finest and the more inferior qualities seems to warrant. These are suggestions only—thoughts thrown out to thinkers—that from these thoughts practical results may be evolved by the numerous talented apianians who are constantly endeavouring to scheme some plan to meet the ever-changing requirements of the most fickle of consumers—the honey-eater.—FELIX.

TRADE CATALOGUES RECEIVED.

Messrs. Morle & Co., 102, Fenchurch Street, London.—*Catalogue of Dutch Bulbs.*

Ketten Frères, Luxembourg.—*Catalogue of Roses.*

Richard Smith & Co., Worcester.—*Catalogues of Trees, Shrubs, Roses Bulbs, Alpine Plants, &c.*



TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Books (R. G.).—The writer to whom you refer has not prepared a work on the subject alluded to, and we do not think he has any immediate intention of doing so. If he writes such a work you are almost certain to hear about it. (*Young Inquirer*).—The most useful book for you would be Mr. F. W. Burbidge's "Cultivated Plants; their Propagation and Improvement," published by Blackwood; but if you desire more scientific instruction on hybridising procure Darwin's "Animals and Plants under Domestication," "The Effects of Cross and Self-Fertilisation in the Vegetable Kingdom," and the "Various Contrivances by which Orchids are Fertilised by Insects," all these being published by Murray.

Dahlias (R., Romford).—The return is too late, as the results have been published in this Journal of October 1st, page 290.

Goddard's Clips for Glass (Inquirer).—Mr. Goddard informs us that as soon as he has made satisfactory arrangements for supplying these useful clips in quantity, he will communicate with us on the subject.

Vines on "the Standard Principle" (T. R. B.).—A more definite explanation of your requirements must be given before we can furnish a suitable reply.

Apples Specked (T. G.).—As the tree is in good condition the specks on some of the fruit may have been caused by hail when the fruit was tender, or by water resting on it and exposed to hot sun. We have often known the fruits on one side of a tree seriously injured by hail, while those on the other, or where sheltered, were perfectly clear.

Climbers, Fruit Trees, and Roses (Constant Reader).—Your letter is such that we cannot answer it satisfactorily to ourselves or usefully to you without further information. Be good enough to say the number of climbers you require, or the length of the walls of the different aspects you desire to cover; also please state whether you desire six Plums as standards and six more as pyramids, or for walls, or only six altogether; also whether you require six Pears for a north wall and the same number for other purposes. If you will make your wants clear and write us as early as possible we shall be able to answer your letter in our next issue.

Clarifying Cider and Perry (W. H. G.).—We know of no modern work on the manufacture of cider and perry, but if all you wish to know is the process of clarifying the liquor you can do so as follows:—To clarify a hogshead take the whites of eight eggs and beat them up in a quart of the liquor, pour this into the cask, and then stir the whole so as to mix them thoroughly. Let it stand for a fortnight or three weeks, and the liquor ought then to be bright.

Plum not Bearing (H. T.).—As your Green Gage trees are in first-rate trim, not too luxuriant, having been root-pruned, and have good bearing spurs, blossoming abundantly, but the incipient fruits drop, all you can do is to protect the trees with nets or blinds from frost and cold winds in the spring. As the trees are on a wall you can do this. The blossom of this variety is more tender than the Victoria, which is one of the most useful Plums that can be grown in cold districts. If you cannot secure a crop with protection we should occupy the whole space with the Victoria, which bears so well on the same wall.

Muscatel Grapes (A. G. F.).—We scarcely know to which Grapes you refer, as Muscatel Grapes are termed Muscatels by some persons, and one of the names of the Muscat of Alexandria is Moscatel Gordo Blanco. The common Muscatel is the White Frontignan, a rather small Grape with cylindrical bunches and richly flavoured berries. The temperature suitable for the Black Hamburgh is also suitable for this variety, but the true Muscatel Grapes only ripen in a Hamburgh house when the Vines are started early in the season and a good temperature is maintained, which even the Black Hamburgh does not object to, though it will succeed very well under what is termed "cool treatment." One of the most useful white Grapes for growing with the Black Hamburgh is Foster's Seedling.

Size of Boiler (W. K.).—Very much depends on the setting and stoking of a boiler as to the length of piping it will heat. As a rule every square foot of effective heating surface in a boiler may be estimated to heat 40 to 50 feet of 4-inch pipe. A saddle boiler 2 feet 6 inches long will answer your purpose. Flued saddles with terminal ends are more powerful than the common kind, but necessarily more costly. In fixing a boiler consideration should be given to the possibility of other houses being erected at a future time, and more piping required to be attached to the existing boiler for heating them.

Apples for Exhibition and Use (Inquirer).—You do not say whether you wish the kinds for exhibition at one time or different times, but we presume they will be required at different times. Dessert Apples: Irish Peach, Worcester Pearmain, Cox's Orange Pippin, Blenheim Pippin, Claygate Pearmain, and Court Pendu Plat. Kitchen Apples:—Lord Suffield, Peasegood's Nonsuch, Bramley's Seedling, Warner's King, Tower of Glamis, and Lewis's Incomparable. These are first-rate Apples, and given somewhat in the order of their ripening. Another dozen are: Dessert.—Kerry Pippin, King of the Pippins, Ribston Pippin, Margil, Boston Russet, and Duke of

Devonshire. Kitchen.—Emperor Alexander, Stirling Castle, Ecklinville Seedling, Grenadier, Dumelow's Seedling, and Galloway Pippin. The ground ought to suit Apples.

Peaches and Nectarines for Unheated House (Idem).—We apprehend you require the fruit to ripen successionally, one kind succeeding the other. Peaches.—Alexander, Hale's Early, Royal George, Belle Beauce, Bellegarde, Barrington, and Walburton Admirable. Nectarines.—Lord Napier, Stanwick Elruge, and Pine Apple.

Phyllocactus Unhealthy (A Constant Reader).—In the absence of any particulars as to the conditions under which the plant is growing, we cannot determine what has caused the blistering on the stems. It certainly is not due to any parasite, but seems to have been caused by some injurious substance dropping upon the surface. The plant is also in an unhealthy condition, and the shrinking of the tissue may be due to an incipient decay. We should advise repotting the plant after removing the worst of the stems. You will find cultural particulars in "Cactaceous Plants," published at this office, post free 1s. 1d.

Culture of the Pomegranate (W. S. P.).—The Pomegranate is usually grown out of doors in the south of England, but the plants are trained to walls with a warm aspect. They are also grown in pots or tubs in conservatories, and only require protection from frost. A light soil, not too rich, is needed, and by shortening the shoots after flowering, and encouraging a free growth, which must be afterwards well ripened, you will find little difficulty with the plant.

The "American Flea" on Chrysanthemums (Subscriber).—Your plants are attacked with the aphid that has received the above name amongst Chrysanthemum growers. It is the same as was alluded to on page 306 last week, where you will observe it was destroyed with soft soap and tobacco water. Another remedy is there suggested to prevent the increase of this destructive pest. All leaves such as the one you have sent should be picked off and burned, as exhausted and discoloured foliage is of no benefit to the plants, only perfectly healthy green leaves assimilating food and storing it in the stems for the support of the blooms. You ought to have watched your plants closely and applied a remedy before the insects took such firm possession of the plants. Remove all insect-infected discoloured leaves at once, and syringe your plants well with the decoctions suggested on the page quoted.

Kiln Dust for Fruit Trees (Laukhill).—It is used extensively and with the best results in the form of a top-dressing to fruit trees in pots at Sawbridgeworth. About one-third of the dust is mixed with twice that quantity of partially dried horse-dung, and the mixture is moistened with strong liquid manure and applied to the surface of the soil. Equal parts of kiln dust, horse droppings or decayed manure, and good loam, make an excellent top-dressing for all kinds of fruit trees that require assistance in the summer.

Gathering Fruit (C. D.).—Fruit should be gathered when it parts from the trees readily on being raised by the hand. When it cannot be separated from the trees without twisting and breaking the stalks it is not ready, still all should be gathered before the occurrence of severe frost, a slight frost not being injurious. When fruit is much attacked with flies and wasps it is usually ready for gathering. Your fruits already gathered that are losing their crispness may have been stored too soon, but early varieties naturally do this. We do not use hay as a bed for fruit, as it does not improve the flavour of either Apples or Pears, and if the hay is old or "fusty" it quite spoils the quality of fruit. We prefer perfectly clean boards for fruit, handling and arranging it so carefully that it is not bruised in the slightest. Clean, new, perfectly sweet and dry straw is better than hay for storing fruit. After the fruit is dry only a gentle circulation of air is needed, and it keeps better in a rather dark place than a very light one, much dry air and light inciting evaporation and consequently shrivelling.

Extirpating Moles (W. G., Midlothian).—The first plan is to trap them, which only requires some experience and judgment. We were for a long time pestered with them on a lawn, and could not catch them simply because the traps were set in the shallow instead of the deep and consequently main runs. We should ascertain the route the moles take in coming into the gravel pit, or find out the main runs, and making a place proper for a trap put in some soil fully as deep as the run and make it rather firm. If it be a main run or one much frequented by the moles they will burrow through the fresh soil, and you may then introduce the trap with a certainty of a catch. If you proceed in stopping up the runs until you find the moles and set the traps in those we think you will soon clear them. If you place Elder leaves or young wood in their runs they will desert them, and tar and petroleum have the same effect, but the only sure plan of riddance is to destroy them.

Retarding Chrysanthemums (Cambridge).—If the colour is only just visible it does not follow that the blooms will be over before the date named, but everything depends on the weather. The best of growers annually lose some of their finest blooms during a warm bright autumn. Keep your plants in the coolest place possible, on the north side of a wall if you have one, sheltering them with canvas or mats (not touching the buds but supported above them) on cold nights. If a glass wall coping could be fixed it would be very suitable, but the plants must not remain out to be injured by severe frost. When the blooms are half expanded the plants may be placed in any cool shed. The light blooms will be improved rather than otherwise by the absence of light, and it is better to sacrifice a little of the colour of the dark ones than to lose the blooms altogether, especially as it often happens that the too early flowers are exceptionally fine. When the blooms are nearly expanded the plants may be kept almost in the dark for a fortnight. A cool house on a north aspect is sometimes more valuable for retarding early blooms than a heated structure is for accelerating the late ones, but the grower who has both those conveniences is to be envied by those who do not possess them.

Pruning Roses (Pen and Ink).—We should not prune either the standard or dwarf Roses now, except so far as to thin out any weakly growths that may be crowding the trees, and shorten any strong shoots that may have extended far beyond the others, and are unduly drawing the sap from them, the shortening to be done to the level of the other shoots. March is quite soon enough for pruning, and numbers of Roses are not pruned till quite the end of that month or early in April. If pruned early the young growths

succeeding are often cut by frost, but by deferring the work, though the top buds may start and be killed, the lower will remain dormant until the shoots are shortened. The exact length to which the shoots should be cut can only be determined by their strength. As a rule, weak growths may be shortened to 2 inches, medium to 4, strong to 5 or 6, more or less according to circumstances. If a great number of flowers for cutting for room-decoration should be preferred to a few large blooms, the strong shoots of established dwarf Roses may be pegged down instead of being closely pruned. Such depressed growths will flower from almost every joint; but newly planted Roses should be rather closely pruned the first year, not pegging down the shoots till the following season, when the plants will be firmly rooted, and can thus support the extended growths.

Earwigs and Chrysanthemums (J. A. E.).—Earwigs are highly destructive, devouring the young leaves near the tips of the shoots in summer, and eating the florets of the flowers when the plants are under glass in the autumn. Hollow bean stalks, elder stems, or anything of that kind placed amongst the plants are often taken possession of by earwigs and should be examined every morning and the occupants taken care of; small flower pots with a little dry moss in them placed near the stems of the plants or fixed amongst them on sticks are also useful. But nothing equals a rigid personal search for the pests after dark, and every bloom intended for exhibition should be closely examined with the aid of a lamp at nine or ten o'clock every night. Earwigs are "on the move" then, but quickly hide themselves in the blooms, so that the light should be turned on suddenly, and a quick eye and nimble finger will do the rest. It is because the pests will lurk in full blooms in the daytime that traps such as those alluded to are not completely effectual. All the varieties in your list are good for exhibition, and you cannot do better than stage the largest, best formed, and freshest blooms you can cut at the time of the show. Golden George Glenny and Mrs. Dixon are the same, and these with others of the "Rundle type" are not always large enough, but are occasionally seen in the front rows of winning stands. You do not indicate how many blooms you wish to exhibit, and you cannot do better than turn to the reports of last year's shows, and you will see the names of the varieties in winning stands large and small. If you exhibit either blooms or plants, it is important that they be neatly and correctly named, and we strongly advise you to spell the names as you find them printed in the Journal or catalogues. There is no such variety as "Miss Hales," but there is a Mrs. Heale, which is probably what you mean, nor is there a "Blond Duty," which you have written for Blonde Beauty; and there are other curious inaccuracies in your list.

Planting Crocuses in Lawns (R. A., Athlone).—Your letter, dated the 3rd inst., is the first we have received from you on the subject. Crocuses and other bulbs are planted informally in the grass of some of the London parks. In some places they are in clumps not far from the margins of shrubberies, with a few bulbs dotted here and there singly between the clumps, so that when in flower they appear as if they had spread naturally from the borders for several feet into the grass. In other cases they are planted singly but informally—that is, not in rows, so as to form sheets of colour, the bulbs being inserted from 1 to 2 feet apart, more or less according as they are near or distant from the walks; the nearer they are the closer they must be put in for producing a good effect. The present is a good time for planting, squares of turf being cut out, the soil beneath well stirred so that water can pass from it freely, the bulbs placed in and the turf pressed in position again. In very poor or heavy ground it is very desirable to remove some of it and add fresh for insuring the growth and increase of the bulbs, but in many lawns that is not necessary provided the soil is stirred and sand is added if of a heavy nature. Some persons simply make holes in grass with pointed sticks, press in the bulbs and tread in the grass over them; but that is not a good plan, as they are then practically suspended in the pointed cavities; and these in firm wet ground act as so many miniature water traps, preventing the growth and causing the decay of the bulbs. The better the soil is and the more careful the planting the more satisfactory will the results be, as bulbous plants cannot increase and multiply in unsuitable soil. Lawns in which bulbs are planted should not be mown in the spring until the leaves of the bulbous plants are matured and commencing to decay.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (J. F. C.).—Striped Beating. (V. Martin).—1, Cellini; 2, Reinette de Canada; 3, Summer Pearmain; 4, Hoary Morning; 5, One of the Crabs. (D. J.).—1, Sam Young; 2, Greenup's Pippin; 3, Golden Harvey; 4, Dutch Codlin; 5, Minshall Crab; 6 and 7, uncertain. (N. H. Pownall).—Pears:—1, Beurré Coloma; 2, Autumn Nelis. Apples:—1, Rosemary Russet; 2, Adams' Pearmain. (Joseph Lane).—1, Hollandbury; 2, Summer Beurré d'Arenherz; 3, Beurré Clairgeau. (P., Surrey).—2, Carel's Seedling; 4, Flower of Kent; 5, Sturmer Pippin; 6, Braddick's Nonpareil. (W. G.).—1, Cellini; 3, Grosse Caebase; 4, Baronne de Mello; 5, Flemish Beauty. (Oakfield).—1, Hubbard's Pearmain; 5, Court Pendu Plat; 6, Dumelow's Seedling. (J. E. E.).—1, Paradise d'Automne; 2, Swan's Egg; 3, Bois Napoleon; 5, Winter Nelis; the Apple is Sweet Nonpareil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (W. E. B.).—1, Lastrea Sieboldi; 2, Gymnogramma tartarea; 3, Lastrea glabella; 4, Asplenium palmatum; 5, Nipholobolus lingua; 5, Polystichum capense. (C. C. Arnside).—1, Impatiens cristata; 2, Lysimachia lanceolata; 3, Galega officinalis. (A Young Gardener).—1, Tradescantia zehriana; 2, Echeveria retusa; 3, Sempervivum arhoreum variegatum; 4, Selaginella Kraussiana; 5, Eonymus japonicus medio aureus; 6, Cordyline indivisa. (W. C.).—Eccremocarpus scaber.

COVENT GARDEN MARKET.—OCTOBER 7TH.

LARGE supplies of Jersey Grapes clearing at low prices. Cobs inclined to fall in price.

FRUIT.

		s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 0	3 6	Peaches	per doz.	2 0 to 8 0
Cobs, Kent ..	per 100 lbs.	24 0	26 0	Pears, kitchen ..	dozen	0 0 0 0
Figs	dozen	0 8	0 9	„ dessert ..	dozen	1 0 1 6
Grapes	lb.	0 6	3 0	Pine Apples English ..	lb.	2 0 4 0
Lemons	case	15 0	21 0	Plums	½ sieve	1 3 2 0
Melons	each	1 0	1 6	Strawberries ..	lb.	0 0 0 0
Oranges	100	8 0	12 0	St. Michael Pines ..	each	3 0 7 6

VEGETABLES.

		s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0	to 0 0	Lettuce	dozen	1 0 to 1 0
Asparagus ..	bundle	0 0	0 0	Mushrooms ..	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 8	0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red ..	dozen	1 0	2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9	1 0	Parsley .. dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0	1 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6	2 0	„ Kidney ..	cwt.	4 0 5 0
Carrots	bunch	0 3	0 4	Rhubarb	bundle	0 4 0 6
Cauliflowers ..	dozen	2 0	3 0	Salsify	bundle	1 0 0 0
Celery	bundle	1 6	2 0	Scorzoner ..	bundle	1 6 0 0
Coleworts ..	dcz. bunches	2 0	4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3	0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0	2 0	Spinach	bushel	2 0 4 0
Heros	bunch	0 2	0 0	Tomatoes	lb.	0 4 0 0
Leeks	bunch	0 3	0 4	Turnips	bunch	0 4 0 0



SOME LESSONS OF THE YEAR.

GREEN manuring has again been done as extensively as possible, especially upon two poor farms where the land was so foul that when they came into our hands last April an excessive proportion of land had been left for a long fallow. Prompt measures were at once taken to clean and sow as much of it as possible with White Mustard, selected in preference to other green crops because of its quick growth. Fairly strong growth from the first sowing upon poor land is insured by the application of a hundredweight of nitrate of soda, and then by ploughing in the green crop when it is in flower, and repeating the process without the nitrate of soda, we impart an ample store of fertility to the soil. Avoiding nicety of calculation, the high value of green manuring may be shown by the fact that the ordinary green crop of an acre contains about half a hundredweight of phosphoric acid, a hundredweight of nitrogen, and a hundredweight of potash. Now, to plough in such a dressing of manure is to enrich the soil sufficiently to insure, so far as manure can do, a full crop of either corn or roots; but when it is remembered that by an immediate second sowing we may add considerably to this rich store of fertility in the soil at a much less cost than was entailed upon us by long fallows, surely it should require no argument to induce a general adoption of a process so clearly to every farmer's advantage.

Charlock was very plentiful this year in every county we visited. What was done to combat and overcome this pest, which is spreading far and wide so fast as to be literally a growing evil? We have already called attention to our own process of eradication, and may usefully do so again. As much land as could be dealt with in the fine weather with which we were favoured last autumn was pared and all the foul rubbish burnt. It was then ploughed, and early this spring it was sowed with White Mustard, as we had enough ashes from the autumn fires to afford a moderate dressing before the ploughing. No nitrate of soda was used. Up sprang the Charlock and Mustard together, and when this mixed growth was in full flower the whole of it was ploughed in and Mustard again sown. Another crop of Charlock came up with it, and the process of ploughing in was repeated. It was then optional for us to do this a third time; and although a third sowing may suffer from drought, yet if there is any reason to suppose more seed of Charlock can be stirred up it ought certainly to be done. We thus get rid of an enemy in the best way of all by making a friend of it, for Charlock is very beneficial to the soil when ploughed into before it has run fully to seed.

We greatly deplore the strong hold which Charlock has been suffered to obtain in the soil, and would urge upon every farmer the importance of destroying the first few plants, from which tens of thousands so soon spring.

Late-sown root crops have again suffered severely from drought, especially Mangolds, but those sown early in the season got so strong a hold of the soil as to suffer little if anything from drought. We have also seen some fields of roots sown much too wide apart. Sow early in fertile soil, and only have the rows sufficiently wide apart for a careful use of horse hoes, and then a quick strong growth will follow, so that the large leaves will soon meet across the rows, tending so materially to screen the soil from the direct action of the sun's rays as to check excessive evaporation of moisture from it. We do not forget that of Mangold sown early in April a small per-centage are apt to run to seed, but the loss is trifling in comparison with the gain upon the entire crop.

Although the experience of another year confirms upon the whole our objection to speculative farming, yet we never would oppose a moderate trial of anything at all likely to relieve us somewhat from the pressure of hard times. Maize, for example, has been grown successfully for silage, but we have also seen it used beneficially in the green state for cattle, and its culture for this purpose is spreading fast in the eastern counties. The idea that it would prove indigestible to animals if used green proves erroneous, due care being taken to use it before the stems become hard and tough, and farmers hail with delight a plant of such easy culture, yielding full 30 tons an acre of tender, rich, juicy succulent food, which is cut and carted from the field on to the pasture for cattle. It is not sown till June, and therefore forms an admirable second crop for land sown with White Mustard early in the year, as we have shown.

Self-binding reaping machines have done such good work this season that the general use of this wonderful labour-saving appliance is only a question of time. To get through the corn harvest in half the time it used to require is now easy by the aid of self-binders. Without them many a man has incurred a severe depreciation in the value of his best Barley through its exposure to heavy rain after it was mown and left lying in the swathe.

The importance of land drainage has again been so forcibly impressed upon us that we must not omit mention of it here. The doing of it may appear costly, but depend upon it the outlay brings a speedier return, a larger interest than almost anything else we can do for the land. Without it all we can do is comparatively useless; with it good culture is almost certain to be rewarded with success, bountiful and rich as is possible to obtain from mother earth.

WORK ON THE HOME FARM.

The sowing of winter Beans has followed that of Rye and winter Oats closely. Wheat-drilling has also begun, and autumn work upon the land is now in full swing, so that what with this work and corn-threshing we are very busy. Particular attention is being given to careful preparation of corn for market, so that if possible the bulk may be slightly superior to the samples rather than inferior. We pay close attention to this matter, for confidence once shaken concerning it is not easily restored. Barley yields well, and the price realised so far may be stated at a mean of 34s. per quarter, which to those who are so fortunate as to have grown six quarters an acre is a paying price, and it must not be forgotten to what good account the straw may be turned for chaffing. For this same reason Oats may also be regarded with a favourable eye. We never can agree with those who are wont to assert that such and such land is not an Oat soil without striving to ascertain wherein it is deficient. If soil does not contain the elements of fertility necessary for the food of the crops we desire to cultivate, is it not worth while to make good the deficiency? Of course it is, and we must determine to find out all about the requirements of each crop, and the precise nature of the soil we have to cultivate, avoiding, of course, all rash experiments and extravagant expenditure, as indeed true knowledge of these important matters enables us to do. Again we say, let us strive more and more to combine science with practice, and see how much more we can wrest from the soil, and how little we can put into it in the way of ntriment to enable us to do it. May we not usefully add the oft-taught lesson—drainage, mechanical division, timely culture, judicious applications of manure, and careful cropping must all go hand in hand if we are to still aim at being successful farmers? Pray let us be teachable, earnest, energetic, and hopeful, for it is altogether contrary to

our national character to submit tamely to hard times. Every step must be carefully weighed now, and there must be no wasteful expenditure of time or labour. This last is a matter demanding particular attention at this season of the year, when a large staff of men cannot be required on a farm. Get the bulk of the corn threshed as soon as possible, but pray don't thresh the Wheat too soon, but give the grain time to harden, and then our earnest hope for higher prices may in some measure be realised.

THE SEED HARVEST OF 1885.—The peculiar season we have experienced has had the result of retarding the development and ripening of all kinds of seeds, and the report we are enabled to offer at date of writing is consequently not quite so comprehensive as that we are accustomed to make, but the general estimates we have embodied may be relied upon.

Red Clover.—In consequence of the dry and somewhat irregular season, the English crop is later than usual, and it is expected that the great scarcity of animal food from the same cause will induce many growers who had intended to take seed to convert the crop into cattle food. The low prices also realised last year has led to a smaller acreage than usual being left for seed, so that it is not expected the English crop will be a very large one. The reports from France, Italy, Hungary, Denmark, and other producing districts speak of an indifferent output, the extreme drought having greatly prejudiced the prospects, and everything depends upon a good rainfall, which at the time of writing has not been generally experienced. From America the reports are not propitious: in fact, the estimates of the crop are so short that it is expected large purchases of European seed will have to be made to meet the deficiencies for home consumption.

Cow Grass.—The limited crop of this article, the production of which (in reliable seed) is entirely confined to England, promises to be a fair average, with a quality equal to that of last year, and values will probably open at last season's closing prices. The importance of this crop is being more recognised every year, inasmuch that foreign Cow Grass is always of doubtful quality, and does not compare favourably with best English samples.

White Clover.—There is a fair average crop of English seed, which is expected to be harvested generally in good condition. Reports from Germany, France, Hungary, Netherlands, &c., and other continental producing districts, point to the crops being less plentiful than last year. The quality all round is expected to be quite up to last year's average, and the ultimate output may yet exceed present expectations.

Alsike.—Some very nice English samples are coming forward, and will be sure to command good values, as the crop of this article on the continent is smaller than it has been for several years. Canadian and American reports are a little more satisfactory, but the small quantities these districts produce for export have no effect upon the general values or supplies.

Trefoil.—An average crop both in English and foreign seed, and reasonable prices are at present asked for bright and hold seed.

Lucerne.—This crop is likely to be a fair average one.

Timothy.—Reports not yet perfect.

Italian Rye Grass.—The English and Scotch crops have been secured in fine condition, and quality will be above the average. Values are at present ruled by reasonable prices.

Perennial Rye Grass.—This is also an abundant crop in excellent quality, and can be bought at present time upon favourable terms.

Rape.—Is better in quality and lower in value than for many years.

Swede and Turnips.—In quality exceedingly good, but the crops have come in very short in many districts. Values may increase as the season advance.

Mustard.—A good average crop, but an exceptionally brisk demand for home sowing for spring food has caused values to harden considerably.

Canary and Hemp.—Reports not yet perfect.

Natural Grasses.—These may be considered satisfactory as to average crop, and samples generally possess higher standards of purity than they have shown in previous years. There is necessarily a great range of values in these articles, as the price entirely depends upon vitality and purity. As usual, there is an abundance of low quality seed upon the market at all sorts of prices.—JAMES CARTER & Co., 237 and 238, High Holborn, London.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain	
1885. Sept. and October.		Baromet- er at 33 1/2 feet Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min	In sun.		On grass.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	27	29.916	44.9	43.5	N.W.	50.7	54.2	33.7	87.4	27.7	
Monday	28	30.127	46.6	43.5	N.	49.4	56.1	35.2	99.8	28.8	
Tuesday	29	29.736	56.8	55.7	N.W.	50.4	63.6	45.6	99.2	39.5	
Wednesday ..	30	29.671	56.7	52.1	S.W.	51.8	61.2	46.7	69.6	41.1	
Thursday	1	29.605	49.4	45.8	S.W.	52.2	57.7	45.6	89.3	33.6	
Friday	2	30.019	51.5	48.7	S.W.	51.2	59.8	44.2	80.4	34.3	
Saturday	3	29.888	51.9	46.7	W.	52.2	60.9	47.3	104.8	42.3	
		29.837	51.1	47.9		51.1	59.1	42.6	90.1	36.6	

REMARKS.

27th.—Fine autumn day.
28th.—Very fine.
29th.—Rain early, dull and overcast throughout, but much warmer.
30th.—Dull morning; rain in afternoon and evening.
1st.—Fine day, but very slight shower in afternoon.
2nd.—Dull, with brief bright intervals; rain and wind at night.
3rd.—Glorious morning and fine day.
The temperature continues to fall, and is this week considerably below the average, with sharp white frosts on 27th and 28th. September proved a very wet month, the total being 4.30 inches.—G. J. SYMONS.



COMING EVENTS

15	TH	Sale of Bulbs at Protheroe's Rooms, Cheapside.
16	F	
17	S	
18	SUN	TWENTIETH SUNDAY AFTER TRINITY.
19	M	Sale of Bulbs at Stevens' Rooms, Covent Garden.
20	TU	
21	W	Pear Congress at Chiswick to November 4th.

POTATOES.

ALTHOUGH the Potato is beyond question the most important of all root crops, a greater amount of ignorance prevails concerning it than any other crop of the garden or the farm, not ignorance in culture, which has much improved of late, but ignorance on the character and qualities of the greater number of the varieties that are now in commerce, and many of which have become prominent by the mention of their names in prize collections at exhibitions. No doubt there are individuals who know all about these—their habits of growth, cropping, quality when cooked, and the period at which they are ready for lifting; but the general public, that is, the great majority of Potato growers, do not, and it does not appear to enter into the minds of those who are competent to impart information to enlighten on the very plain yet decidedly important points indicated.

It appears to be taken for granted that "everybody knows all about" such now popular varieties (for exhibiting at least) as Adirondack, Vicar of Laleham, Cosmopolitan, Reading Russet, Snowdrop, Edgecote Purple, The Dean, Prizetaker, and some others that appear to be included in most collections in which they can be staged; but so far from all gardeners even, not to say amateurs, being acquainted with what may be termed the fashionable sorts, they know practically nothing about them, and there are thousands of persons who would receive gladly such knowledge as is possessed by experts if they should not consider it beneath them to convey rudimentary instruction to the inexperienced. By experts is meant persons who have cultivated the several varieties whose names are familiar, and who are intimately acquainted with their habits and properties.

It is true that a practice has become established of cultivating and cooking new varieties in the Royal Horticultural Society's Gardens at Chiswick before they are considered eligible for receiving certificates of merit at the International Potato Exhibition, that has now become an event of the year. It is impossible to speak too highly of the excellence of that plan, and the reports that are published are valuable, as the character of the tubers of each variety, its productiveness and quality, are indicated with sufficient precision to be comprehended by most persons; but something more appears to be needed to render the reports complete. For practical purposes it is not only important to know whether the varieties are dwarf, medium, or strong in growth, but much more so to be acquainted with the period at which the crops are ready for lifting, say July, August, or later. In the case of some varieties an idea is given as to their habit of growth, but that point is by no means made clear with the whole of them, and it is very rare indeed that the period of ripening is mentioned at all. Yet this is exactly what intending cultivators want to know.

The questions that are asked in respect of new varieties are, "Are they good and heavy croppers? what height do they grow? and what time are they ready for digging?"

Knowledge as to the approximate height is necessary for determining the distance of planting in order that justice may be done to the varieties without wasting ground, and information as to the time of ripening is not less required for determining the positions, so as not to interfere with after-cropping. In gardens in which land for growing Potatoes and other vegetables is limited it is quite as important to know when crops will be ready for removal as it is to know when they should be inserted; and in point of fact, far more mistakes are made through ignorance of the former point than the latter. An instance may be given, and when one is seen and recorded dozens of a similar character occur, but are not publicly alluded to. A gardener being satisfied about the general good qualities of Reading Russet and Reading Hero planted a border with them last spring, on the assumption that the ground would be vacated in time for sowing with winter Spinach, the demand for which is considerable. He has been disappointed. The first-named variety ripened soon enough—indeed, sooner than was expected; but the Hero continued growing so long that it became a question as to sacrificing the crop of it or having only half a supply of Spinach, and the latter course was adopted, with what results time alone can prove. The gardener has chosen what he considers the lesser of two evils, and while he says he expects to be "much bothered," he hopes to "get over it." This may appear a trifling matter, but what may be trivial in one case is often serious in another, and it is certainly very desirable that cultivators should know when the ground occupied with Potatoes will be at liberty for a succeeding crop.

For years I have been engaged where Potatoes are grown as extensively and perhaps as well as in any other district in the kingdom. The growers, though relying mainly on sorts of proved usefulness, are yet greatly interested in what is being done in raising new varieties, and over and over again I have had questions put to me respecting them that I could not answer, because I have not yet been able to try a great number of newer varieties, while those who have grown them have not perceived the necessity of giving full and plain information respecting them, on the ground, probably, that it is not needed. That is a mistake, and the plainer the subject the greater is the need for precise instruction, because what are regarded as simple matters are on that very account so apt to be overlooked.

With the object of becoming acquainted with some of the newer and most popular Potatoes I visited the great Show at the Crystal Palace last week, and noted the varieties above named were very numerous and fine, but when asked to describe their habits and season of ripening I am not able to do so. Are they, or any of them, likely to be more profitable to grow than Myatt's, Regents, and Magnum Bonums? That is what many persons desire to know. There is no doubt a great deal of pleasure derived from growing a number of varieties that may not be of value save for exhibition. It is very far from my desire to seek to deprive anyone of the enjoyment of growing such varieties for that purpose alone, or for raising seedlings, and thus adding to the bewildering number of sorts; but as, after all, Potatoes, broadly considered, are grown to be eaten, it seems important that the peculiar characteristics of the fancy sorts should be made clear to all, and it should never be forgotten that it is the most ignorant who are most in need of instruction.

But though some varieties may be grown for their appearance alone, productiveness with quality are now recognised as the chief essentials, as it is observable that only those which were accorded three marks each for those properties in the Chiswick trials were honoured with certificates at the Exhibition; and in future it may be taken for granted that new varieties thus honoured will possess sterling merit for commercial purposes, but some time must necessarily elapse before they can be increased sufficiently to enable their being sold at such prices that they can be cultivated on a large

scale. Yet surely some of those above mentioned, with others, the names of which are familiar to readers of your Journal, ought to be in some way superior to the "old sorts;" and if not these great Potato exhibitions, interesting as they are, and much as they may have done in stimulating growers to exercise more care in the selection and preparation of "seed" tubers, and to devote greater attention to culture generally, cannot be said to be completely successful. Either six or seven "International" Shows have been held, I forget which, yet very few varieties indeed that have been introduced to the public by their agency and recommended by their authority have taken a commanding position as contributing to the national food supply. The one Potato that has spread over the land in acres, and is poured into the markets in tons, is the Magnum Bonum, and this it has done entirely on its own merits, for I have seen it stated it has not been "certificated" at any of those Shows. It appears time, in the judgment of plain men, that some other of the comparatively recent introductions that have figured in prize lists should have a higher mark of approval—namely, a wide public endorsement of their merits for general consumptive purposes.

At the Exhibition alluded to the pinkish round variety Adirondack was conspicuous in several classes, and judging by appearances it would be regarded as a thoroughly useful variety, but is it so? Is it a great cropper and of good quality, of medium or strong growth, and what time ready for lifting? Equally commanding was the Vicar of Laleham, which must have had time to develop its qualities, yet "all the world" does not know its characteristics in those respects. Its rival in appearance and colour, the Dean, has of necessity not been so fully proved, yet some growers must know whether it is likely to be a serviceable variety or not. And what in those respects is known of the beautiful white kidney Snowdrop, the larger Cosmopolitan, Edgcote Seedling, and Edgcote Purple? There has been time to prove those and others, and it is clear that many persons grow Reading Russet, for exhibition at least, and ought to be able to testify to its usefulness for general garden and field culture for consumptive purposes. Snowdrop is the most attractive white kidney Potato I have seen, and if it is as good as it looks must be a great acquisition.

Some of the newer varieties exhibited at the Palace were all that could be desired in appearance, and as they have presumably been tested at Chiswick we must take them to be good in other respects, still some particulars regarding them would be acceptable to general cultivators. Chancellor was very fine as a white roundish variety, respecting which information would be useful. Prizes were taken in the white round and white kidney classes with Chancellor; are these two varieties of the same name, or were they different forms of the same variety? There seem to be two General Gordons, one of which was certificated and the other not. It is almost certain that confusion will arise sooner or later, and disappointment be experienced in respect of these. There are also two Bountifuls, Fenn's and Fidler's, but as the raisers' names will lapse in the course of culture, there will eventually be some difficulty in telling "t'other from which," and the practice of giving the same names to distinct varieties should be discontinued.

Harvester, Prime Minister, and M.P. were white rounds that commanded attention, and particulars respecting them of the nature indicated would be very acceptable to a large number of cultivators who are on the look out for something equally good as the Regents, but more productive and reliable, Schoolmaster not proving satisfactory in some districts and by no means equal to the old favourite just mentioned. Amongst all the fine-looking Potatoes now arranged so temptingly at shows, some of them must be good and profitable for growing on a large scale as staple table and market sorts; indeed it is not too much to hope that a few may excel those in general cultivation, but the virtues and habits of the newer sorts appear to remain in obscurity too long, and the

ignorance of the majority of Potato growers ought, as far as possible, to be dispelled by persons who can enlighten on this important subject.—A COUNTRY GARDENER.

PLANTING FRUIT TREES.

THE time will soon arrive for those who intend planting fruit trees to arrange about proceeding with the work. The first consideration will be what to plant, and the next the preparation of the ground. Most gardeners have probably selected the varieties they wish to have, but many perhaps are in doubt as to what to choose so as to form a succession or meet the demands of a certain part of the season. I will name at the end of this article a succession of Apples, Pears, or Plums suitable for the garden or orchard, but it must be borne in mind that some varieties which succeed well in one part of the country are not so suitable in another. Gardeners should endeavour to ascertain what varieties are known to succeed well in the district before they decide.

The preparation of the ground for fruit trees is important. Good drainage is indispensable, as without it the trees will not thrive, and if the ground is not drained naturally drains must be provided. Anyone who has noticed fruit trees planted on well-drained land will have perceived how healthily they start into growth, and what good crops of fruit they perfect; but on the other hand, when the ground is not drained the trees never start into clean growth, but become starved and subject to all the ills that attack fruit trees when the ground is a cold and sodden mass. Some soils are much more adapted for the culture of fruit than others, being both deep and fertile, and when this is the case the labour attending their cultivation is reduced to a minimum. The preparation of the ground in this case, and when the trees are to be planted not too close, is to allow each tree a station of 5 or 6 feet, working the soil to the depth of 2 feet. When the tree is planted place a little turfy loam and well-burned garden refuse about the roots, which will help to give the tree a good start. If the ground is being prepared for cordons, or the trees are to be close to each other, but to be eventually thinned, the whole space of ground should be worked.

In many instances the soil is not well adapted naturally for fruit trees, but it must be bad indeed if Apples, Pears, or Plums cannot be brought to succeed fairly well. When the soil is not very good, or the place the trees are to occupy is an old garden which has been under cultivation for a number of years, the ground must be worked to the depth formerly stated, but do not bring the subsoil to the surface if of a poor and hungry description. If the soil is heavy burnt clay and garden refuse and old lime rubbish should be added, and fresh loam and burnt refuse may be placed about the roots.

Early planting is desirable, as besides being better for the trees, the ground will not become wet from the autumn rains. It is also important to plant the trees as quickly as possible after they are received, but endeavour to choose a fine day. Cut off cleanly all bruised ends or portions of roots, and remove enough soil to permit the roots being spread out to their full extent. Place the fresh soil first among and over the roots, and then level the original soil, treading it evenly and rather firmly, but care must be taken that it is not in a wet state. Spread a coating of dry litter on the surface, which will keep out frost and drying winds. Securely stake standards and pyramids if exposed or likely to be injured by wind, but trees against walls should not be nailed in until just before the buds start, securing then, however, so as to prevent injury to the branches from being rubbed against the wall.

The form a tree is to grow in will depend upon circumstances, and it can be understood how unwise it would be to plant standard trees in a kitchen garden, though it is generally the place where they have to be grown. The aspect is another consideration, for if the site is open to the full force of the winds it would be unwise even to plant standards in an orchard. Standards are grown when the orchard is laid down to grass and sheltered, but when the site is exposed bush trees should be planted, keeping the ground clean through surface-stirring, and give a good coating of farmyard manure annually. Other crops could be grown between the rows until the trees require all the space. Growers for market generally have their fruit trees on worked ground, and standards and bush trees are generally adopted. Currants, Gooseberries, and Strawberries are grown between them until the permanent trees require the space. In kitchen or fruit gardens connected with private places Apple trees must be grown in the form of bushes or pyramids, Plums and Cherries the same, or if desired especially large and good

for dessert purposes against walls, when fan-training is the form usually adopted. Only grow the earliest or mid season varieties of Pears in the open, unless the situation is favourable, as varieties in use from November onwards are best grown against walls with a south-west or south aspect.

The cordon system of growing fruit trees should be generally adopted in gardens, especially in those of a small size, and I am glad to see that cordons are being favourably commented upon by gardeners and amateurs generally. Apples, Pears, Plums, and Cherries may be grown on this principle, but it is for Pears that the system will be carried out generally.

SELECT VARIETIES.—**APPLES, Dessert**—Irish Peach, Margaret, Mr. Gladstone, Kerry Pippin, King of the Pippins, Margil, Cox's Orange Pippin, Adams' Pearmain, Ribston Pippin, Pine Golden Pippin, Scarlet Nonpareil, Duke of Devonshire, Kedleston Pippin, Court Pendu Plat, Mannington's Pearmain, Sturmer Pippin, Hubbard's Pearmain, Golden Russet.

Culinary.—Keswick Codlin, Duchess of Oldenburgh Warner's King, Blenheim Pippin, Lord Suffield, Stirling Castle, Small's Admirable, Golden Noble, Cellini, Greenups Pippin, Ecklinville, Northern Greening, Loddington, Rymer, Dumelow's Seedling, Wormsley Pippin, Minchall Crab, Alfriston, Winter Quoining.

PEARS.—Beurré d'Amanli, Comte de Lamy, Beurré Superfin, Louise Bonne of Jersey, Beurré Hardy, Marie Louise, Doyenné du Comice, Pitmaston Duchess, Marie Louise d'Uccle, Beurré Diel. All the above Pears succeed well in the southern part of England when grown in the open. The following should be grown on walls—Beurré d'Arenberg, Winter Nelis, Josephine de Malines, Glou Morceau, Emile d'Heyst, Marie Benoist, Knight's Monarch, Passe Crassane, Bergamotte Esperen, Nouvelle Fulvie, and Olivier des Serres.

PLUMS, Dessert.—July Green Gage, Bryanston Gage, Green Gage, Jefferson, Kirke's, Coe's Golden Drop, Reine Claude de Bavay, Oullins Golden.

Culinary.—Early Rivers, Diamond, Victoria, Prince of Wales, Pond's Seedling, Prince Engelbert, Belle de Septembre, White Magnum Bonum, Yellow Magnum Bonum, and Autumn Compôte.

I have named a good selection of Plums, as I have found some varieties succeed better than others in different seasons. Some Apples bear good crops of fruit annually, and when this is the case it should be planted in quantity if it prove to be a good keeping variety.—A. YOUNG.

THE ROSE CATALOGUES.

LOOKING over the catalogues adds force to Mr. G. Paul's latest remark in his own—"There is much need of a good lot of first-class new Roses." I hardly ever remember such a lull in the announcements. Mr. Bennett makes no sign as to either offering Her Majesty or Mrs. John Laing to the English market, and for the rest there is nothing that stands out really prominent. I had hopes from Gloire Lyonnaise, but it seems doubtful whether this will be an exhibition Rose at all; most people seem to have found it single. It may possibly have been pushed on too fast, as I see M. Guillot, the raiser, vouches that on established plants it will be found good and double.

The admirable and exhaustive article of Mr. Girdlestone on the new Roses really leaves only little to be said. As far as my observation goes, the Honourable Edith Gifford T., almost a Devonensis, has been increasingly winning favour, and Grace Darling and Madame de Watteville are also fully approved. I have been greatly pleased with Comtesse de Paris, a most lovely soft rose colour, which I think is not much known; and equally disgusted with Madame Isaac Perrière, whose promising robustness verges close upon coarseness. Pride of Reigate, on the other hand, has been very beautiful, and is still a solitary variety. I observe another seedling, from the Gloire de Dijon, Etendard de Jeanne d'Arc (there ought to be a law that no Rose shall have more than two names), is favourably reported on by Mr. Girdlestone, and as a pure white Tea must be worth possessing. Certainly Madame Gloire may well be proud of her youthful progeny. "*Mater pulchra filia pulchrior*," may be said of several of them, they will soon require a class if not a box to themselves. This would be an excellent idea for a prize at the National. My last remark shall be the consolation to be derived from two hot summers. A vast quantity of seed must have been successfully ripened, and in two or three years we may expect great results.—A. C.

PEN-Y-BYD MARROW—CUCUMBERS.

Now that the Marrow season is about over, and taking into consideration what an important part they play in the summer and

autumn vegetable supply, I venture to give my experience on the merits of Pen-y-Byd.

Our Marrows were all sown early in March and planted out under handlights about the middle of May, including, besides the above, Moore's Vegetable Cream and the Long White. The last week in June the first Marrow, a Pen-y-Byd, was cut, and since that time up to a week ago this variety has given us a supply of Marrows which have been preferred to either of the others named. It is a most prolific variety, in several instances carrying a couple of fruits from one joint, not large, but of such a size that they can be cooked whole, a mode of cooking this vegetable which is said by many to be preferred to any other. As to quality, I may state that my employers think so highly of it that when having visitors they have asked for the best Marrows, adding, "The long ones will do some other time." For a gentleman's table I consider it a decided acquisition, and should, I think, be grown in every garden where this vegetable is esteemed. I congratulate Mr. Muir, the raiser of the variety.

Cardiff Castle Cucumber, which I have grown since it was first sent out, has again proved a sterling variety. I can only find one fault, and that may be the grower's fault, as with me it grows rather long-jointed; in other respects I consider it the best. Since Rollison sent out Telegraph so many people have sent out Improved Telegraphs, and some much more improved than others, that a few remarks may not be out of place on the subject. During the last few years I have tried several of these so-called Improved Telegraphs, and this season I have found what I consider the finest. I was strongly advised by a friend to try Roffey's Improved Telegraph, and did so, and have found it to be the best I have as yet grown in every respect. I had occasion to be at Croydon a few weeks ago, and having half an hour to spare, I went to see Mr. Roffey, who was busy amongst his Cucumbers, and a fine sight they were. Two houses about 40 feet long were hung with Cucumbers for seed, vary from 18 to 25 inches in length. In many instances two fine fruits hanging from one joint, and in one instance three. Mr. Roffey is evidently an adept at Cucumber-growing. I remarked that they appeared to be growing in pure loam. He at once told me that he did not use much manure, adding "hoofings is the best for Cucumbers, the sweepings from a blacksmith's shop."—W. W. B.

FRUIT AND PLANT HOUSES.

SINCE 1850 there has been a rapid increase of horticultural erections, showing great improvement in the quality of their construction. The impetus was due in a great measure to the repeal of the duty on glass and the increased prosperity of the nation; but the greatest impetus was given by the diffusion of horticultural information. In 1850 the late Mr. Thomas Rivers published "The Orchard House," in which was shown exactly what was required by many—viz. (in Mr. Rivers' own words) "a place requiring but little expense to erect, but little experience and attention to manage, and yet giving most agreeable results." To Mr. Rivers belongs the credit of marking a new era in the construction of horticultural buildings. His plan of cheapening construction caused the erection of houses much better adapted for fruit and plant culture. Instead of conservatories with stone or brick mullions, leaded lights of tiny panes, little or no provision for ventilation, and opaque roofs—plant dungeons—we now have panes of plate glass as large as hundreds of the displaced pigmies, a roof remarkable for its flood of light, little wood or less iron, and ventilation we have in dome, cupola, or lantern. In plant and fruit houses the revolution is quite as striking as it has proved beneficial. Instead of heavy rafters supporting framed lights with many sash-bars, glazed with small panes with wide dirt-holding laps, and a clumsy system of ventilation, we have houses constructed with less than half the strength of rafter, one-third the number of sashbars, and the frames are gone altogether, so that we get fully two-thirds more light. Fixed roofs, a maximum of light, and thorough ventilation are the prevailing features of the new system, which in some modified form or other embodies the principle enunciated by Mr. Rivers, in a majority of the fruit and plant houses of the present time.

Though the system introduced in 1850 is very generally followed, we still have houses constructed upon the old or frame-light system. It is of these two systems that I propose to offer some remarks, especially on their construction, as it appears to me to relate to successful practice. I think that whenever a house is to be built the gardener who will have to answer for the crops that by its means are to be produced should be consulted upon the subject by his employer. It would at least give him an interest which otherwise he does not feel. Gardeners, I may be told, do not as a rule study plant or fruit-house construction. Then they should do so, for, whatever may be stated to the contrary, they ought to know

what kind of structure is most suitable for growing certain crops in the most satisfactory manner, and also be able to form an estimate of the value of materials, so as to enable him to have structures erected in the most economical manner consistent with stability. He ought to be able to state concisely the kind of house, the material it is to be constructed of, the ventilation essential, and heating surface required; in fact, give a ground plan and section to scale, with general specification of requirements embodying his employer's instructions. If he cannot proceed that far, then I grant he has no right to be consulted in the matter.

Horticultural structures are of various kinds, which I shall pass briefly in review, to which certain principles apply. First, whatever the structure may be it should be impervious to wet; second, cold air should be prevented from entering, and warm air from within escaping as much as possible; third, the means of ventilation must be ample; and fourth, the fullest admission of light secured, which will be the last treated of when we come to the details of construction.

The great factor in the growth of vegetation is light—solar light and heat—about which it is only necessary to observe that in passing through glass the rays of light lose much of their force as regards the vegetation on which they act, and the distance the plants or foliage is from the glass still further diminishes the energy of the solar rays. The intensity of the action of the solar rays depends on the angle at which the rays fall upon the surface of the glass, and which is known as the angle of elevation. This angle is now but little taken into account in the construction of fruit and plant houses. The chief thing now considered is an angle of elevation that will insure the throwing off of wet outside, and prevent drip inside; but it is well not to lose sight of the fact that when the sun's rays fall perpendicularly upon the glass very few rays are reflected, and when they fall upon it in a very oblique direction more rays are reflected than pass through it; consequently we get nearly all the sun heat by one and lose them by the other. Although much has been made of the angle of incidence, with our improved mode of applying artificial heat it need not enter much into the consideration of the horticulturist. Nevertheless, it is important that the heat in any structure should be distributed as equally as possible throughout the whole of the interior. The higher the pitch of the roof the greater the accumulation of heat in the upper part of the angle, and the lower the pitch the less the difference in the temperature of the house at the top or bottom. For these and other considerations it becomes advisable to keep the slope of the roof as low as is consistent with the admission of light and the free escape of rain; also to protect the interior from drip. For general purposes an angle of 35° to 40° is suitable, and very generally applicable, from which there need not be any deviation, unless in the case of houses employed for early forcing, when a sharper pitch on account of light, and quite as much for preventing accumulations of moisture on the glass outside or inside, yet this need not be more than 45°—a sharp pitch indeed, and quite enough for any plant to be forced during winter in our climate.—G. ABBEY.

(To be continued.)

CHRYSANTHEMUM NOTES.

CHRYSANTHEMUM SOCIETIES' SCHEDULES.—Several of these are still coming to hand, and this week we have received the following:—The Brixton Hill, Streatham, and Clapham will hold their show on November 4th and 5th, the usual classes being provided. The Richmond Society will hold a Chrysanthemum show this year on November 5th and 6th, in Castle Hotel, when good prizes will be awarded in forty-eight classes. In one class three very substantial prizes are offered—namely, £10, £6, and £4, for forty-eight blooms, distinct, twenty-four Japanese and twenty-four incurved. These should induce some of the best growers to enter, and close competition may be expected. The Kingston Show—one of the events of the season—will take place on November 10th and 11th, when the third champion challenge vase will be placed in competition for the second time, the winner last year being Mr. Molynex, gardener to W. H. Myers, Esq., Bishop's Waltham, who will no doubt do his best to repeat his success this year, but it is rumoured that he may expect a formidable opponent to contest the honours with him. In the other classes the customary liberal prizes are offered. The second Huddersfield Exhibition will be held on November 13th and 14th, in the Town Hall, prizes being provided in thirty-seven classes, the principal that for forty-eight varieties, twenty-four Japanese, and the same number of incurved, the prizes consisting of £10, £7, and £4. The Winchester Show opens on the 17th of the same month. The Northampton Show on the 18th, and at both numerous prizes will be given for cut blooms, plants, fruit and vegetables.

CHRYSANTHEMUMS AT THE INNER TEMPLE.—The extensive collection under the charge of Mr. Newton is this season promising unusually well, the growth being strong but not too luxuriant, while the buds are clean and swelling evenly. The show house at the lower portion of the Inner Temple Gardens, close to the Thames Embankment, is devoted to them, and the exhibition will probably, by the liberality of the benchers, be opened to the public at the end of this month. Many of the new varieties are represented, and visitors will have a good opportunity of judging their respective merits as compared with the older and proved sorts.

NEW VARIETIES OF CHRYSANTHEMUMS.—The continental growers are still sending out large numbers of new Chrysanthemums, and unfortunately these are not all so distinct as they ought to be. It seems as if they do not test them sufficiently before placing them in commerce, and in consequence when they are tried here many are discarded as worthless. Numbers will be submitted this season for certificates as usual, particularly amongst the Japanese, and it behoves those tribunals before which they are placed to exercise considerable caution before honouring them. There is an opinion that in the last two or three years certificates have been granted too freely, and the result is that some varieties upon further trial have not proved worthy of the award they received. The Floral Committee of the National Chrysanthemum Society will undoubtedly be doing valuable work if they restrict their certificates to really meritorious varieties, and this we may rely they will do. Chrysanthemum growers will then know what new varieties they can safely purchase to add to their collections.—B. C.

CHRYSANTHEMUMS AND THE FROSTS.—I have been looking for reports in the Journal of damage by the frosts of the 26th, 27th, and 28th of September, when the thermometer registered 26° each night. I have never noticed bedding Pelargoniums completely killed so early before; of course the more tender plants, such as Dahlias, are often cut off early. I am afraid some of our Chrysanthemum buds were injured. I have examined some of the side buds near the terminal one of some that had not been disbudded, and have found them quite blackened through. What effect will this have on crown buds that are much larger and more exposed, having no foliage close to them?—J. L. B., Leicester.

ARE CHRYSANTHEMUMS SEMI-AQUATIC PLANTS?—All know how partial Chrysanthemums are to moisture at the roots, but this query is suggested by the following circumstance. I planted a number of my own seedlings in front of a south wall, potted some of Mrs. George Rundle and Cullingfordi, and planted similarly an equal number. The cantalever, or eave shoots, commenced to leak in one spot over those named, especially Cullingfordi. I regretted this, as I had but one potted and one planted, being still new. It is two months since the leak commenced, and one of each has been almost continuously saturated. Instead of dying they seem to luxuriate in the moisture, and are much before those ordinarily treated of the same varieties. The foliage is rich, dark, and glossy, and the buds most promising; hence the inquiry.—W. J. MURPHY Clonmel.

TRENTHAM BLACK AND ALNWICK SEEDLING GRAPES.

I THINK you are quite right in your reply to Mr. McIndoe's question with regard to the above two Grapes. The Grape which I know by the name of Trentham Black, coming from a reliable source, has no resemblance to Alnwick Seedling, and it exactly answers the description you give of the true variety. The bunches are very long, rather loose, and (with me at least) a large percentage of small or stonless berries. The berries are large, round, and colour well, and ripen a few days later than the Hamburgs. It is a very strong grower, producing large, dark green, leathery leaves, which turn yellow when ripe—not blotched red, like Alnwick Seedling, and the under side of the leaf is quite smooth, while that of Alnwick Seedling is downy. It is evident Mr. McIndoe has not got the true Trentham Black, and it would be rather strange if all the three Vines—Trentham Black, Alnwick Seedling, and John Downie—should prove to be the same.—A SUSSEX GRAPE-GROWER.

I SHOULD think there are no two Grapes more unlike than these. First of all, having for some four years seen Trentham Black at home and noted its characters well, I can never forget the sight it presented in the narrow upright glass cases as grown by the

late Mr. A. Henderson, who succeeded Mr. Fleming. Since then I have had it in my own care at various times, and have given it up on account of its not paying, it being too much like a Black Ham-burgh. It will keep, but does not improve by so doing. It is not particularly shy in setting, but is very faulty in stoning. The flavour of Trentham Black now and Alnwick Seedling would soon decide which is right; the first would be in season now, but not the latter.

Alnwick Seedling I had from Messrs. Osborn of Fulham, Mr. Robert Osborn assuring me he had the eyes direct from Mr. Bell, is not to be mentioned with Trentham Black only for its good keeping quality. In March it was a very peculiar beautiful eating Grape. I wish that Alnwick Seedling had the shape and form of bunch peculiar to Trentham Black. Having grown the two varieties on the same soil in the same house under the same conditions I can speak with confidence.—STEPHEN CASTLE, *West Lynn*.

WHITE CUP.

NIEREMBERGIA, or White Cup, is a genus belonging to the Potato family, and closely allied to the Tobaccos, and had long been considered as belonging to the sub-tribe *Nicotianæ*, until Mr. Miers, who had given much attention to the variety of structure in this family, came to the conclusion that *Nierembergia* with *Fabiana* were sufficiently distinct to be separated from the section *Nicotianæ*, giving the name *Fabianæ*.



Fig. 52.—*Nierembergia rivalaris*.

owing to their having capsular fruits and other minor differences. In *Nierembergia* the divisions of the calyx are invariably upright and acute, not leafy, the corolla tube generally longer and more slender than in the *Petunia* section, although in the smaller-flowering species the differences are hardly patent to the general observer. The most prominent character by which this genus may be distinguished from the others is the shape of the stigma. It is like an inverted crescent, with small appendages curving round in front and closely adhering to, or clasping the anthers. Although the probable number of *Nierembergias* known is over twenty, there are less than half a dozen at present in cultivation, and only one of these may be said to be sufficiently hardy to stand our severe winters in the open air.

Nierembergia rivalaris (fig. 52), was found by Miers, about the year 1845, growing on the grassy banks of the Rio de la Plata, South America, "the prostrate branches creeping among the grass, above which rise its pretty white flowers." Indeed, under cultivation, and when well established, there are few similar plants that contribute so much in such little space towards the beauty of the rockwork or border as this little gem. Although it seems to prefer a rockery or a similar situation where its roots get curbed, it will do equally well on dry banks or flats, and a large patch I saw on the flat fully exposed was a sight never to be forgotten, so thickly were the large beautiful white cups studded among the leaves on short stalks like so many *Campanula*-shaped Mushrooms. Those not hardy in the open air may be used with great advantage indoors in

the shape of trailing or creeping plants. A hanging basket made with *N. gracilis* as an edging is extremely pretty, besides having the advantage of being permanent. Then there is *N. frutescens*, a strong shrubby species of considerable worth for a greenhouse or conservatory, as it makes fine bushes in a short time, flowering more or less incessantly. *N. rivularis* rarely grows more than an inch or two in height, having long prostrate creeping branches rooting as they spread away from the centre, which requires filling up occasionally. The leaves are alternate, oblong, blunt at the summit, on a long slender stalk; the corolla, shaped like a *Campanula*, is upright, about 2 inches in diameter, pure white, and very handsome. It flowers through the summer, and may be increased by division.—T. Y.

IS A TENANT'S GREENHOUSE A BUILDING?

On September 30th I was summoned by Mr. Elkington, district surveyor of Penge, to appear at Lambeth Police Court on a charge of erecting a greenhouse, 12 feet by 8 feet, in the district of Penge, without having given the notice required under the Building Act. I contended that this greenhouse was a tenant's fixture, and did not come under the Act, being made portable in every respect, boarded up to sill of sashes; standing on but not fixed to another sill or frame at bottom formed of 7 inch by 2½ inch deal.

I was advised to have wheels put on this greenhouse to save being compelled to comply with the Act, which states that all buildings shall have 9-inch brick walls with proper footings and concrete foundations, which, of course, I could not comply with, being only a tenant's fixture. Accordingly I had four wheels put on the bottom frame, so that the whole could be moved in one if necessary, or taken apart and stowed away in a shed if required. The result was that Mr. Chance (Magistrate) decided that this greenhouse, although not connected with the ground either by posts driven in or by brickwork under, but only laid on top of the earth, was a building within the Act, and gave it as his opinion that even Cucumber frames were not exempt.

I report this case to you feeling that it is a matter not to be trifled with, but should be dealt with promptly and decisively, and in the interests of flower growers generally I take the liberty of asking you to give this matter all the publicity possible. Having seen the uncertainty which exists among tenants and the gardening papers generally, I took the precaution of employing a first-class solicitor to defend the case, thus incurring considerable expense, the case being adjourned, and having to re-appear on Saturday, but it was all of no use; I was fined a nominal fine of 5s. and the cost of the summons, with of course, the privilege of appeal.

Now, this appeal will be of no use to me, but if your readers feel sufficient interest in the cause of tenants' rights as to having a greenhouse of their own, and will offer some assistance towards the cost of an appeal against this decision, I am quite willing to join in the expense and allow my case to be used as a test case in the interests of tenants and flower growers generally.

Should you deem this worthy of insertion, those of your readers who wish to help in this important matter may send their names, addresses, and amount they promise to contribute to Basil E. Greenfield, Esq., Solicitor, 17, Katharine Street, Croydon, and they will receive an acknowledgment in the paper they choose to name.

In writing please write the word "Appeal" on outside of envelope.—A. DENT, *Horticultural Builder, 118, Selsden Road, Croydon*.

[We insert this letter, but think it right to say we are advised that tenant's fixtures come under the Building Act, and if a tenant "cannot comply" with the Act, we fear he cannot erect a greenhouse in a position and district to which the Act applies. Those who think differently have now an opportunity of sharing in the settlement of a perplexed question of wide interest to amateur horticulturists who reside in the vicinity of cities and towns where Buildings' Acts exist. Mr. Chance's "opinion" that Cucumber frames come under the Act is not endorsed by us, as we fail to see that a frame is a building. The rigid enforcement of Building Acts is a great impediment to the erection of amateurs' greenhouses, and often presses heavily, if not unjustly, on nurserymen.]

BOUVARDIAS.

DURING autumn and early winter few plants so amply repay for labour bestowed on them as the *Bouvardia*. It is suitable alike for conservatory or for using in a cut state; its neat flowers, which can now be had in so many varied colours, are always admired. Though frequently treated as a stove plant I think that is a mistake, as much better results can be acquired by growing it in cold frames during the summer months, transferring it into warmer quarters when the weather becomes cold in the evenings. Under this treatment it makes stout firm growths, and eventually produces abundance of fine useful blooms, much superior to those obtained from plants grown in heat, which are generally inclined to make soft succulent wood, the flowers from which are inferior both in substance and colour.

In spring when the plants are starting into growth they should be taken out of their pots and all the soil shaken away from the roots, replacing them in pots somewhat smaller, using a compost of equal

parts loam and peat, with a good sprinkling of sand. They should be put into a gentle heat; a newly started vinery answers very well, and if kept syringed they soon grow freely.

If it is desired to increase the stock cuttings may now be had which will strike readily in a gentle bottom heat under a bellglass. Some prefer root cuttings taken off when potting. I have tried both methods, and prefer taking young growths: they strike easily and make better plants, at least this has been my experience. When the growths are 3 or 4 inches long the points should be pinched out to get the plants dwarf and bushy, and they should be attended to in this matter during summer, stopping them whenever sufficient growth has been made to allow of so doing.

As soon as the roots begin to appear at the side of the pot the plants will require repotting, using the same compost as previously recommended, with a small quantity of well-decayed manure and a little soot. Early in June they may be placed in a cold frame and kept close until they are thoroughly hardened, when air should be admitted on all favourable opportunities. Shade for a few hours during bright sunny weather. When the soil has become well filled with roots a little liquid manure applied once a week will prove beneficial. When the nights begin to get chilly the plants may be removed to a house where a temperature of 50° or 55° is maintained, which will assist in bringing forward the blossom, and where this heat can be had they will continue flowering for several months during the dull season of the year.—WILLIAM LITTLE, *Moncrieffe*.

THE ROSE APHIS.

I READ with some surprise "D., Deal's," review of the now past year's Rose season, on which he remarked on the general absence of aphids. My experience was so directly contrary to this, that I quite expected to see some letter on the subject in the Journal. A day or two ago I received a letter from one of the most successful Rose nurserymen in England, in which he writes—"With regard to the past Rose season I have found it as you state, the worst I ever had . . . At the end of July we had such a shower of green fly as to completely smother the plants. It was no use trying to clear them, so they remained until they took their departure. I think they remained nearly three weeks." I should like to hear the experience of others. Perhaps "D., Deal," is unusually happy in his surroundings. Verse tells us that St. Patrick

"Drove the frogs from out the bogs,
And banished all the serpents."

Is it possible that the vicinity of Royalty to Westwell Vicarage has had the same happy effect on the aphids?—H. B. B.

LATE GRAPES AND LATE CHRYSANTHEMUMS.

I NOTICE a suggestion has been duly proposed and seconded in your columns. Shall I be out of order in saying one or two words in support?

The suggestion is that a few prizes should be offered for late Grapes at our late Chrysanthemum Exhibition in January next, to be held at the Royal Aquarium, Westminster. I have but little doubt such a competition would prove both interesting and instructive, and am quite sure the Committee of this Society would be glad to give every possible facility towards carrying into effect the suggestion.

I should, however, like to have the opinions of some of our leading Grape-growers as to the number of classes, and for which varieties they would suggest prizes should be offered. The amount of the prizes I take it need not be very high, and the cost of arranging for the Show, as it is in conjunction with a show already provided for, would be nil. It will therefore only be necessary to raise a small fund just sufficient to pay the actual prizes awarded. I should be pleased to contribute my mite, and, should the suggestion find favour generally, most glad to co-operate with anyone in the matter.—WILLIAM HOLMES, *Hon. Sec., Frampton Park Nurseries, Hackney*.

THE suggestion that the National Chrysanthemum Society should provide a class for late Grapes is well worth the attention of the Secretary and Committee, and I hope we shall hear something more upon the matter. It seems to me that one class would be sufficient for the purpose, and three prizes might be offered, together with the Society's silver and bronze medals, for the first and second winners. This would increase the interest of the competition materially; and though a large display could not be expected, yet it would be useful, and it would moreover be a novelty to see an exhibition of Grapes in the middle of January. I should like to see some other opinions on this subject.—A.

STEPHANOTIS AND GARDENIAS.

In reading the correspondence on this subject between Messrs. Muir and Jenkins, it has occurred to me, that though much may be said for

their different views of the question, both of them have somewhat missed the mark. The question as stated seems to be whether certain of our most valuable and ornamental stove plants are worth the trouble occasioned by constant washing, &c., to keep them free from mealy bug? The somewhat obvious query, Why grow bug at all? seems to have been overlooked. My advice to those who already have a stock is, Get rid of it as early as possible; and to those who fortunately have not, Be careful not to introduce it.

Some gardeners have an idea that certain plants, as Gardenias, Stephanotis, &c., breed mealy bug spontaneously. I have succeeded in some cases in upsetting this notion by showing them a batch of Gardenias 4 feet high and through, which have not been washed for years, and offering £10 each for all the bugs they could find. By starting with a clean stock and putting every new plant introduced through strict quarantine, we manage to grow Gardenias, Stephanotis, and Eucharis in quantity, and a collection of other stove plants, including Crotons, Dracænas, &c., all of which have scarcely ever been sponged, our annual saving in labour, &c., being reckoned in three figures. The case is more simple when commencing with clean houses, &c.; but that an infected place may be absolutely cleared has been proved by many of our best gardeners, and I could name a place under my own observation, which, to use a Nottingham expression, "snived" some years ago, but which is now perfectly free. Granted that the clearing process entails a period of general upsetting and hard work to begin with, followed by months of constant watchfulness, I hold that the result will well repay the outlay.

The constant washings needful to keep down bug are certainly detrimental to the health of the plant, and, in addition to the actual labour bill, the fact must be taken into consideration that mealy bug breeds the fastest, and therefore requires the most attention in the early summer months, the busiest and most critical season of the year to gardeners and nurserymen.

To sum up, it is possible to grow all and any kind of stove plant without this dreaded pest, no one will dispute that the method is easier, cheaper, and more pleasurable. Query, Why not?

I should like to add a note as to the glowing extract regarding the price of Gardenia blooms. If such extracts be quoted from local papers (which as a rule are proverbial for dense ignorance on matters horticultural) it would be less misleading if it were stated that Gardenias may now be sent into Covent Garden during several months of the year without realising more than 1d. or 2s. each, from which cost of carriage, salesman's commission, &c., have to be deducted.—CHAS. E. PEARSON, *Chilwell Nurseries, Nottingham*.



A MEETING of the Council and Committees of the Royal Horticultural Society was held at South Kensington on Tuesday, the 13th inst., Sir Trevor Lawrence, Bart., M.P., in the chair. The object of the meeting was to consider the desirability of holding an INTERNATIONAL HORTICULTURAL EXHIBITION AT SOUTH KENSINGTON IN 1887, and it was resolved that, with the object of obtaining a larger representation of horticulturists than was then present, another meeting be held on November 10th. The Council desire the co-operation of all who are interested in these matters, and invite them to take part in the proceedings of the forthcoming meeting.

— "J. U. S." writes—"MADRESFIELD COURT GRAPE, as I have seen it grown at Trentham and elsewhere, is one of the best flavoured and finest-looking mid-season Grapes in cultivation. I cannot understand 'bags of sugar and water' being placed before the rich, luscious, and piquant Madresfield Court, if all other conditions are equal as to finish, and Madresfield Court will and does finish well."

— THE meetings of the LINNEAN SOCIETY will be held at Burlington House, Piccadilly, W., on the following dates:—1885.—Thursdays, November 5th and 19th; December 3rd and 17th. 1886.—January 21st; February 4th and 18th; March 4th and 18th; April 1st and 15th; May 6th and (anniversary) Monday 24th; June, Thursdays 3rd and 17th. The chair will be taken at 8 o'clock in the evening, excepting on May 24th, which is appointed for the anniversary elections, when the chair will be taken at 3 o'clock in the afternoon. The library is open daily from 10 o'clock till 5 o'clock in the afternoon, and the reading-room, adjoining, from 10 A.M. to 6 P.M., but on days of Council meetings and on Saturdays only till 4 P.M.

— A WELL-KNOWN exhibitor, MR. J. CHILD, gardener at Garbriand Hall, Ewell, is, we are informed, about to leave that establishment owing

to some changes in the family. Mr. Child has been fourteen years at Garbrand Hall, and bears the reputation of a good practical gardener.

— MR. ROBERT OWEN has sent us "some blooms of TUBEROUS BEGONIAS gathered from the open ground this day, to show how they will stand frost." The blooms were fresh, bright, and very little the worse for their exposure.

— SOME time ago we referred to the devastation effected in the DRUMLANRIG WOODS by a severe gale. It appears according to a northern contemporary that "The trees have remained ever since as they fell. No one could be induced to undertake the huge contract of removing them. Just lately, however, an enterprising London merchant has purchased the entire lot from the Duke's stewards, who, indeed, had become so anxious to have them removed that they offered them at an extremely low price. The purchaser has begun to do a flourishing trade, for he can afford to undersell the Baltic merchants. The incident seems to show that forestry is indeed a neglected industry in this country. There seems no reason why the Baltic trade should not be permanently rivalled by the products of our own woodlands."

— MR. GILBERT has sent as samples of THREE GOOD THINGS FROM BURGHLEY—namely, Her Ladyship's Favourite Melon, Burghley Champion Tomato, and the not yet extinct Chou de Burghley. As to the Melon, we have to regard her ladyship as an excellent judge. The fruit was beautifully netted, skin thin, flesh thick, colour deep green, and quality delicious. The Tomato is round, smooth, firm; the fruit looks good, and is as good as it looks. Chou de Burghley was in form like a well-grown Cos Lettuce, and all who tasted it wanted more.

— "T. W., *The Elms*," sends a note upon EXHIBITING GRAPES, in which he remarks that it is unfair working or single-handed gardeners should have to compete in the same classes with gardeners who are in charge of large establishments and have much greater facilities for producing good Grapes. He considers that a class should be set apart at large shows for "Working Gardeners," which would encourage more exhibitors to enter, and be much better than the present system.

— AN Irish correspondent writes as follows on BRITISH and FOREIGN APPLES:—"I am getting my neighbours at last to see that they must grow large fruit of the best quality to compete with the imported fruit, and not small rubbish like our markets are filled with this year. In Portadown last market day Apples were selling freely at £1 per ton."

— A LOVELY little annual is *IONOPSIDIUM ACAULE*, though little known and rarely seen, and if introduced again as a new plant would become popular. In the Whittington Nurseries at Lichfield there is a good breadth of it now in full beauty. It forms a carpet of lovely silvery grey close to the ground, and as it has a habit of reproducing itself so freely from seed, no one need fear losing it, as thousands of young plants are coming up about the bed from self-sown seeds. Such plants will give a charming spring display, whilst spring-sown seeds out of doors give a later bloom.

— LARGE YIELD OF POTATOES.—Mr. J. Rogers, The Gardens, Langton Hall, Spilsby, states that, "Last spring, with several other varieties, I obtained from Messrs. Daniels of Norwich 1 lb. of Imperator, and lifted 108½ lbs., six of the largest weighing 9½ lbs., the heaviest being 1 lb. 13 ozs. The seed was cut into eighteen sets, and only planted in the ordinary way in old garden soil resting on sand. The produce is quite free from disease, is not ugly grown, but mostly of regular shape, rather a long round."

— THE third and fourth "fascicules" of reports of the ANTWERP INTERNATIONAL BOTANICAL CONGRESS, held from the 1st to the 10th of August, are now issued. They continue the reports from page 225 to 420, and contain papers by M. L. de Nobile of Ghent, M. E. Laurent of Vilvorde, Dr. Jules Gandy of Ixelles, M. Amelin of Brussels, M. F. Bravenich of Ghent, M. J. H. Krelage of Haarlem, M. Emile Rodigas of Ghent, M. Adolphe d'Haene of Ghent, Dr. Henri van Heurck of Antwerp, M. C. Wittmack of Berlin, and M. O. Bruneel of Ghent. These deal with a variety of subjects, particular prominence being given to the Flora of the Congo.

— A SUBURBAN correspondent wishes to know if any of our readers can explain the undermentioned fact—"During the four past winters I have had two plants of *AGAVE AMERICANA VARIEGATA* out

of doors in my garden near London, and each season the frosts have destroyed the old leaves—that is, those of the previous year, the young leaves of the current year's production being uninjured. We are so accustomed to seeing the young growing tips of plants first injured by frost, that it seems strange the old leaves should, in the case of this *Agave*, be the only ones affected."

— "It could not be want of a subject," writes "C. S. R.," "that compelled Mr. Muir to so depreciate the *STEPHANOTIS* AND *GARDENIAS* (page 295). 'The pure colour and fragrance may be thought pleasing,' says he, 'but the fragrance of the *Gardenia* especially is so strong that not one person in a dozen can really enjoy it.' How different this sounds to my experience of *Gardenias* and persons, as not one in a hundred speaks but to praise. Are Mr. Muir's olfactory nerves so very acute that the fragrance of the *Gardenia* is offensive? If so he was right in transferring them to the rubbish heap, as no one would wish to hear that the able gardener at Margam Park had died 'in aromatic pain.' That these plants are subject to mealy bug I admit; but if clean to start with the attention that most other stove plants require to do them well will keep the *Gardenias* and *Stephanotis* clean. We find a regular application of weak soapsuds very useful for these plants."

— AN extensive WILLOW FARM IN GEORGIA is thus described by an American contemporary:—"A flying trip yesterday to the Osier Willow farm of I. C. Plant, a mile below the city of Macon, presented a surprise. In a building on the premises were a number of negro women and boys at work stripping the bark and leaves from the Willow switches. This is the first cutting of the crop of two years' growth, and the yield will be two or three tons. These switches are from 4 to 7 feet long, and are cut and placed in bundles like sheaves of Wheat. They are then taken to the stripping building and placed in a vat filled with water. The large ends are then placed in a peculiar little machine, which loosens the bark for a couple of inches. Passing along on the table they are placed one by one in the strippers, and with a pair of pliers are pulled through with one jerk. This process takes off all the bark and leaves. The switches are then wiped off with a woollen cloth by passing them through the hand. They are then bundled and laid away to dry. All the leaves and bark are dried and are used for a certain kind of medicine. Mr. Plant has 400,000 Willows now growing on his farm. He has within one week set out 80,000, and they are growing finely. He will have sixty acres in Willows alone. A ton to the acre is the average yield, and the Willows, when shipped dried, command 200 dollars per ton in a dozen markets. In three years all he has set out now will be high enough to cut."

— AT the annual Cryptogamic Meeting of the Essex Field Club on October 3rd, Mr. Worthington G. Smith read an amusing paper upon BOTANICAL MARE'S NESTS, in which several remarkable cases of "mistaken identity" are given. One of these, referring to the ear cockle in Wheat, was thus noted:—"I always take pleasure in thrusting at shady 'doctors' and 'professors.' I will, therefore, take a 'doctor' first, a German 'doctor.' His name is Dr. Carle Mücke, a peculiar name, in English it indicates a mess or a muddle. This Dr. Mücke, in 1870, discovered a terrific mare's nest in reference to a common and very familiar disease of Wheat termed 'ear-cockle.' 'Ear-cockle,' as every beginner knows, is caused by a minute thread-worm, named *Anguillula tritici*. This little worm, which is allied to the so-called 'vinegar-eel,' causes little offensive galls to replace grains of corn in the ear. Friend Mücke 'discovered' that the disease was caused by a mare's nest fungus, named by him 'Xenodochius,' he probably meant *Xenodochus*. Dr. Mücke's essay was published by the Board of Agriculture of Melbourne, and Dr. Mücke was awarded a substantial money prize by the Board for his wonderful mare's nest. The essay is a remarkable one. The German 'doctor' does not write 'tritici' but in every instance where he should use that word, he writes the extraordinary word 'tritii'; he also tells the Melbourneites that some persons believe ear-cockle to be caused by the 'chrysalis of an aphid.' The 'chrysalis of an aphid' is a grand mare's nest, one of the first water. He illustrates what he calls the 'imagines'—possibly meaning imago—of an aphid without a rostrum. He also figures a very red garden worm, and calls it 'such an eel,' and says it is not always red, for, says he, it is sometimes white. Dr. Mücke says he has examined 'flour' from the roots of Wheat, and found the 'flour' to consist of the 'eggs of an aphid unknown to him.' Fancy 'flour' from the 'roots of Wheat' being not flour but the eggs of an aphid, and an unknown aphid!"

— IN another portion of the paper occurred some observations upon DODDER AND RAFFLESIA as follows:—"In 1873 a trial took place at Bedford for 'breach of warranty.' A farmer had bought Clover seed infested with Dodder seed, the result, of course, being that all the farmer's Clover was destroyed by the parasite. The farmer claimed £202 10s. damages. In defence, great doubts were thrown on the very existence of such dubious and impossible things as Dodder seeds, and it was said in the defence that 'Dodder is a parasite, the propagation of which is wholly unaccountable to the most experienced agriculturists.' Judge and jury were alike perplexed. Although the very existence of such things as Dodder seeds had been tabooed, the jury found the defendant guilty, but assessed the damages not at £202 10s. but £50. The Judge evidently believed in the non-existence of Dodder seeds, and the unaccountable mystery of Dodder, for he gave the defendant leave to have the damages reduced to £6 7s. 6d., the price paid for the seed. Before dismissing Dodder, I will mention a little mare's nest discovered by a writer who described the well-known plant named Rafflesia in the *Edinburgh Review* for October, 1883. The Rafflesia, as is well known, has a similar parasitic habit with Dodder. The reviewer said 'the Rafflesia is a plant or fungus,' observe that! 'a plant or fungus.' The mare's nester elsewhere in his description says 'that fungi are commonly regarded as not bearing flowers;' the Rafflesia fungus was, of course, an exception to this rule."

— IT is estimated that the FRUIT YIELD between Kingston and Newburgh in the Hudson River district in America will exceed by 33 per cent. that of former years. The shipments of Grapes will reach about 5250 tons, valued at 367,500 dollars.

— ONE of the most interesting features of the CRANBERRY MARSHES OF WISCONSIN are the pumps used to flood the ground. On one marsh there are two that draw their supply from the Fox River, and throw 80,000 gallons a minute. The stream is 20 feet wide. 4 deep, and moves at the rate of 160 feet a minute, flooding the 1000-acre marsh to a depth of 12 to 15 inches in ten hours. The water is depended on as a protection against frost, also to drown the insects which infest the Cranberry blossoms in May.

— THE annual conference of the CRYPTOGAMIC SOCIETY OF SCOTLAND was recently held at Corrie, Island of Arran. The weather was unfavourable throughout, and fungi were not abundant. Ferns are plentiful in the island. Trichomanes radicans, Hymenophyllum tunbridgense, and H. unilaterale are found in abundance. Our esteemed correspondent, Dr. Landsborough, has on several occasions sent us notes illustrating the remarkably mild climate of Arran, and in confirmation of these it may be added that Palms, Camellias, Myrtles, Heaths, Fuchsias, &c., have been grown in the open air uninjured through a long succession of winters. At the business meeting of the Society, Dr. Flaxman Spurrell in the chair, it was resolved to publish a volume of Transactions after the next annual conference, which will take place at Aberdeen in the autumn of next year, under the presidency of Professor J. W. H. Trail.

— THE Royal Caledonian Horticultural Society will hold a SPECIAL EXHIBITION AND CONFERENCE ON APPLES AND PEARS in connection with the Society's Winter Show in the Waverley Market, Edinburgh, on the 25th and 26th November. While collections of Apples and Pears are solicited from all parts for comparison and instruction, the chief object of the Conference is to utilise the favourable opportunity presented by the fine crop this year, for the purpose of gaining information about the Apples, and Pears grown in Scotland, comparing their merits and correcting their nomenclature. All fruit-growers, especially in Scotland, are therefore invited to send as complete collections as possible of the Apples and Pears grown in their district; and as the object is solely educational, there will be no competition and no prizes. It is not necessary that the fruit should be grown by the sender. Intending exhibitors must give notice to the Secretary or Assistant Secretary in writing not later than Monday, the 16th November, stating the number of varieties to be exhibited and the amount of space that will be required. Collections of fruit may be consigned to Mr. William Young, Assistant Secretary, 18, Waverley Market, Edinburgh, and delivered there on or before Friday, 20th November. The Council will pay the carriage of fruit and take all possible care of it, and will also see that it is properly staged for the inspection of the Committee; but they will not be held responsible for any error, damage, or loss of any fruit consigned to them.

— A MEETING of the BELGIAN HORTICULTURISTS was held on October 12th at Ghent, when there were present MM. le Cte. de Kerchove de Denterghem, Fr. Desbois, V. Cuvelier, L. Desmet, Edm. Vervaeet, Ad. Rosseel, Ch. Van Geert, M. Ch. Spaë, and Romain Desmet. Certificates were awarded for the following:—Cypripedium Fairieannm, from M. Jules Heye-Leysen; Dendrobium species, from MM. Vervaeet et Cie.; and Eucharis Sanderiana, from M. Desmet-Duvivier. Honourable mention was accorded to Comparetia macroplectron, from MM. Vervaeet et Cie.; Cypripedium Arthuriannum, from M. Ed. Pynaert; and Cattleya superba splendens, from M. Desmet-Duvivier. Cultural commendations being awarded to Cocos Blumenavi, from M. L. Spaë-Van der Meulen; and Tillandsia musaica, from M. Bernard Spac.

— THE first meeting of the Floral Committee of the NATIONAL CHRYSANTHEMUM SOCIETY was held yesterday (Wednesday) at the Westminster Aquarium, the President, Mr. E. Sanderson, in the chair. There was a good attendance, and several exhibitors contributed blooms of new Chrysanthemums and other plants. Messrs. J. Laing & Co. had some fine blooms of Mrs. Cannell, a Japanese of lighter colour than Brise du Matin, L'Ile des Plaisirs, and some handsome Tuberous Begonias. Mr. N. Davis, Camberwell, had some good blooms; Mandarin, a rosy lilac Japanese of great promise, being certificated; also Lackne, a dwarf ree-flowering Japanese, orange bronze in colour, and Mrs. Cullingford, a fine early-flowering white Pompon, being commended. Mr. John Forbes had a certificate for Brise du Matin, a beautiful Japanese variety with fluted florets, of a delicate pale pink colour. Good blooms of L'Ile des Plaisirs, Margot, and M. Mousillac, were also staged. Mr. E. Boyce, Mr. T. S. Ware, and Mr. G. Stevens also showed collections of blooms, and Messrs. H. Cannell & Sons, Swanley, contributed stands of Tuberous Begonias and other flowers.

— A CORRESPONDENT favours us with the following:—"The seventh ordinary meeting of the SCOTTISH HORTICULTURAL ASSOCIATION was held in the Bible Society's Rooms, St. Andrew Square, Edinburgh, on the 6th inst. Mr. Lindsay presided. Dr. J. M. Macfarlane of the Royal Botanic Garden, Edinburgh, gave a paper on 'Nepenthes,' in which he drew attention to the history, general structure, affinities, microscopic structure, and physiological action, species, and cultivation of this curious class of plants. He stated that about forty species are known, of which about twenty have been introduced during the last thirty years. He pointed out the arrangement by which insects are caught in the pitchers of the plant and digested, and drew attention to the very remarkable peculiarities in the species which have been introduced, as well as in those that are still known only in dried specimens. A discussion followed, during which the Chairman stated that the first seedling Nepenthes raised in Scotland was reared by Mr. Kelly of Messrs. Dickson & Sons' Nursery, Edinburgh, about forty years ago. Mr. Burbidge of Trinity College Botanic Garden, Dublin, gave the result of some of his observations in Borneo, the principal habitat of Pitcher Plants. Various exhibits of new varieties of fruits and flowers were shown, as well as a fruit new to Europe—the Aberia Caffra—ripened at La Martolo, Italy, and likely to be a serviceable half-hardy fruit, suitable for cultivation in Peach houses in this country. It is a native of Africa, and belongs to the order Bixaceae. The fruits of this Aberia or 'Kei Apple' resemble Green Gage Plums in shape and size, being of a soft yellow colour and of an agreeable subacid flavour, to which a little sugar is an advantage." The fruit referred to as being "new to Europe" was grown and ripened at Dangstein for years, and is still grown by Lady Dorothy Nevill in a span-roofed conservatory at her residence in Sussex.

NOTES AT MESSRS. J. VEITCH & SONS' NURSERY.

LAPAGERIAS.

LAPAGERIAS are general favourites now, and their culture is fast extending as their value is becoming better known and their peculiarities mastered. For cool houses they are especially useful, and when once well established the charming wax-like flowers are produced in great numbers. An admirable example of this is shown in the corridor of Messrs. J. Veitch & Sons' nursery at Chelsea, the roof of which is draped over its whole length with pendant wreaths of rose and white flowers that have a beautiful appearance when viewed from either end of the building. The shoots which hang free from the roof are about a yard in length, and each bears a dozen or more large flowers, the bell-like form of which is so much seen from below than in any other way. It may be readily imagined that so beautiful an introduction to the nursery causes many inquiries for young plants of Lapagerias, and such inquiries are shown a house of healthy young specimens in the right condition for planting out

or for growing on as specimens in pots. The great point in the successful culture of these is to encourage a vigorous growth, never to allow them to get into a stunted or weakly habit, and to keep them free from all insect pests. Soil is not of so much importance as some might suppose, for we have seen vigorous and freely flowering *Lapagerias* in many composts from charcoal to pure loam.

GREENHOUSE RHODODENDRONS.

The Chelsea nursery has long been the especial home of introduced and home-raised *Rhododendrons* of the group known as greenhouse varieties, and nothing has done so much to popularise these useful as the numerous hybrids which have been obtained by this firm. The term "greenhouse," as applied to them is, however, misleading, for they require a rather warmer temperature than usually provided in such structures, though whilst in flower they will stand in a cool house very well. At other times a temperature intermediate between a stove and a greenhouse is the best for them. The old *Taylori* is still a favourite, and deservedly so, for it produces its trusses of bright pink flowers most freely and continuously. *Queen Victoria*, with buff flowers; *Duchess of Edinburgh*, buff; *Maiden's Blush*, a delicate rose-tinted form, and the species *R. javanicum* are all flowering well, and are more or less known in collections. A house filled with these and other varieties is very attractive now, but it is in another house where the more recent and greatly improved hybrids are found. Amongst the hundreds of seedlings that have been raised from careful well-considered crosses, some are constantly flowering, and varieties with scarlet, rose, blush, yellow, buff, and white flowers of great merit are noted every week. Those showing strongly marked characteristics receive names, and the others are consigned to the rubbish heap. Fortunately, however, there are not many that have to be cast out in this way, and fresh shades of colour are constantly being obtained, together with increased substance of flower. A series of double forms are being secured, and a grand addition has recently been made to these in a white-flowered variety named *R. halsamiflorum album*, which has beautifully formed blooms much like a *Tuherose*, and as pure as a white *Camellia*. Rose and yellow varieties of *R. halsamiflorum* named respectively have already been raised, so that there is now a trio of double varieties that will become great favourites, the flowers being particularly well suited for buttonholes or bouquets.

BOUVARDIAS.

As flower-yielding plants *Bouvardias* have become of the utmost importance in gardens, and they furnish most welcome supplies of bright or delicately tinted blooms, the value of which cannot be over-estimated for bouquets and floral decorations generally. One house at Chelsea has now been gay for some weeks, and will continue so for a long time, with a choice collection of the best varieties, amongst which the following are very notable:—*Priory Beauty*, one of the finest varieties in cultivation, very strong in habit, most floriferous, bearing compact trusses of charming soft pink flowers. In every respect this is a grand variety, and though as yet but little known it will soon take a foremost place in gardens where these plants receive special attention. *Reine des Roses* is also a free and pretty rose-coloured variety; *Dazzler* is bright rosy scarlet, good habit, and free-flowering; *rosea oculata* is distinct, the tube rose-tinted, the lobes white; *Vreelandi* and *umbellata alba* are the best whites, both free and with substantial flowers; *Hogarth* and *elegans*, scarlet; *umbellata carnea*, soft pink; *Humboldtii corymbiflora*, white, long handsome flowers; and *longiflora flammea*, scarlet, are all good single varieties, while of the doubles *Alfred Neuner* still holds its own, producing the best formed flowers.

WINTER-FLOWERING CARNATIONS.

These form another series of useful plants for autumn and winter, and a house is devoted to a collection of the most effective varieties. One that is especially worthy of notice is *Mrs. Keen*, which has dark maroon highly fragrant flowers, produced in great numbers. It is also of such a tall strong-growing habit that it is admirably adapted for training to the roof of greenhouse or conservatory, and in such a position affords an almost perpetual supply of flowers. For training as a specimen on a globular or other formed trellis it is also well suited; but the first-named method is much the better. A few only of the leading varieties can be named, and all are so beautiful that it is difficult to make a selection. *Lucifer*, scarlet, free; *Princess Stephanie*, blush white; *Pride of Penshurst*, yellow, perhaps the best of its colour, certainly very free and with fine blooms; *Juliette*, rosy purple; *Van Houttei*, scarlet; *Sir Evelyn Wood*, rich crimson purple, a fine shade of colour, and most handsome variety; *Phoenix*, dark crimson; *Alexandre Regnier*, yellow; *Sir Charles Wilson*, cerise, the flowers very full, and with cut edges; *Andalusia*, yellow, very floriferous; *Lady Macheth*, delicate pink; *Whipper-in*, scarlet, streaked with maroon; *L'Hermine*, white; *M. Jacotot*, white, flaked with pink; *Ruby*, violet purple; and *Lord Roakey*, scarlet. Those named have been selected chiefly for their floriferous qualities, which can be fully appreciated where large quantities of flowers are in demand.

IXORAS.

A house of *Ixoras* cannot be seen in every garden, and only in few nurseries, yet they are handsome plants when well grown, and their compact globular trusses of brightly coloured flowers are very beautiful amongst other stove flowering or foliage plants. The old *Ixora coccinea* is still among the best in brightness of hue, and it is moreover of good habit. Another form now flowering at Chelsea is *I. Burhidgei*, which is regarded as an improved variety of *I. salicifolia*, the leaves similarly long and tapering, but it is of stronger habit, the flowers rich orange-

red in fine trusses. *I. Williamsi* is also of fine colour, while *I. odorata* is remarkable for the great size of the white or blush-coloured trusses, which sometimes exceed 9 inches in diameter. *I. Westi* is of the same type, with broad handsome leaves and huge trusses of delicate rose-tinted flowers. In the same house some plants of *Ipomœa Thompsoni* trained to the rafters are showing blooms abundantly, and will shortly afford grand display. *Batatas paniculata* is grown with the above, and flowers freely, though they do not last very long.

PITCHER PLANTS.

Wonderful as have been the displays of these plants in previous years, they are still finer this season, and the houses devoted to them present a most extraordinary sight. Hundreds of variously formed and diversely coloured pitchers are hanging from the gigantic *Nepenthes Rajah*, the grandly coloured *N. Northiana*, and the peculiar *N. bicalcarata* to the diminutive *N. ampullaria*, *N. Morgania*, *N. intermedia*, *N. Hookeri*, *N. Rafflesii*, *N. cincta*, and many others attract attention in turn, but one of the best in colour and freedom of "pitchering" is *N. Mastersiana*, of which there is a grand stock. Of this superb *Nepenthes* there are numbers of plants in baskets 8 inches square, bearing twenty-five to thirty pitchers of a deep rich red colour, and clustering closely around the baskets. The plants alone are well worth a visit, and a better time than the present could not be chosen.

There are numberless other attractions at Chelsea just now; for instance, the great collection of Orchids always contains something good in flower. Then there are the miscellaneous stove and greenhouse plants, amongst the former being the magnificent *Anthuriums*, and of the latter the *Heaths* and the newly imported *Azaleas* are in superb condition. Preparations are also being made for the annual exhibition of *Chrysanthemums*, of which a large collection is grown, and in a few weeks' time they will furnish an additional feature.

POTATOES FROM SEED.

I KNOW nothing more interesting to the amateur than raising new varieties of Potatoes from the seed, for the results are so varied and surprising. This year I raised numerous seedlings from *American Purple*, and as they grew it was wonderful to observe how distinct the foliage of each was. Although fifty per cent. of the seedlings turned out to be blue the haulm of each one was different in some respect from the others. The shades of blue were varied also, and whilst one seedling was of an exceptionally light blue colour another was so very dark, so near approaching black, that I have called it "*Niger*." In addition to the blues there were pink kidneys, pink rounds, a bright magenta round and kidney, white rounds and white kidneys, and a flesh-coloured round. The haulm varied from 2 feet high to only 6 inches, and the tubers from the size of marbles to that of a cricket ball. I have selected fifteen of the most promising, and trust next year that I may be able to select at any rate half a dozen out of these, and no doubt the year after I shall be able to settle whether they are all worthless, or perchance one or more of good quality and constitution.

It may interest some of those who have never raised seedling Potatoes to know how I went about it. Last year I picked a few seed balls and hung them up to dry till this spring, when I broke them into pieces and planted the seed in boxes, which I placed in my Melon frame. When 2 inches high I moved them into a cool frame, and gradually hardened them off. In May I dibbed them out in a bed and kept them clean, moulding them up when they grew strong, and raising them a few days ago. The trouble is but little, and I consider that they are well worth a little time and care.—H. S. EASTY.

FOSTER'S SEEDLING GRAPE CRACKING.

"J. W., *The Elm*," puts his case very clearly as a questioner, then gives himself the answer. Let me give him my thoughts by way of suggestions. First I will take the situation of the house in which we will say this Vine is planted. Of course, we will take it for granted that the vineyard faces the south. Now comes the question, Is the Vine at either end or middle of the house? Say it is at the south-east corner, and this a shady one, so that when the sun gets to a certain height it is on it all at once, with the result that cracking takes place at once, simply by the steaming of the berries. To avoid this leave ventilation on all night at the front for this particular Vine, and increase it early in the morning. I have no hesitation in saying much better results are or would be obtained by having the Vine either in the middle of the house or even at the south-west-end. Opening the door or doors with increase of bright sun in changeable weather will materially reduce cracking. Heavy cropping of itself is a check to cracking, but then if fed by stimulants it is commenced at once. Starting the house with fire late just when the buds are showing signs of pushing and thus ripening late, no cracking will appear. Many plants in a vineyard is a fruitful source of evil, and certainly contribute to cracking. If Vine roots are outside the mulching is generally removed at midsummer, thus exposing the border to the drying influence of wind and sun; and if roots are near the surface, as they should be, they suffer, and when rain occurs there is another help to cracking.

Foster's Seedling is not generally a cracking Grape, certainly not with

me, but my horder is inside. I have now cut my crop, and the berries were all sound. I have had a few good gardeners to see me just lately, and I also have had several visits to gardens, but have heard no complaint of Foster's Seedling cracking in West Norfolk. Old berries have done so, but then the cause is known, and is soon removed. It may be asked, Why does this crack in a mixed house more than the black? My answer is, The skin of Foster's Seedling is very fine, so transparent that the stones can be seen and almost counted. Prevent steaming or dew on the berries and there will be no cracking. Foster's Seedling is a very sure cropper, hang-fairly well, but I prefer Buckland Sweetwater on account of its larger berries, better richer colour, and the latter makes by far the best market Grape. Foster's Seedling looks too much like imported Grapes when cut for a few days.

"Thinker" puts a finish on the cracking or splitting of Grapes, and in my idea he is right. I have now two good Vines of Madresfield Court in full crop, and not the least signs of cracking. I have come to the conclusion that as my Vines are at least a month later than last year, in fact, not yet ready for table, I have missed the steaming time. I was fairly successful last year, but at the beginning of September in hot days, notably after a wet or dull morning, although ventilated, yet the house would steam. To avoid this I set the two front ventilators so that they were always open, and kept the foliage fairly free at the top, so that the damp should find its way out. I have not the fine colour this time, but if they will keep till Christmas a point will be gained.—STEPHEN CASTLE, *West Lynn*.

NOSTELL PRIORY.

A SHORT time ago the members of the Yorkshire Association of Horticultural Societies visited this fine old residence of Lord St. Oswald, and the following historical notes have been obligingly furnished by Mr. Herbert Chapman, the Secretary of the Paxton Society, Wakefield, the description of the grounds and gardens being supplied by Mr. W. K. Woodcock, who attended as the representative of one of the Sheffield horticultural societies.

The following history of Nostell or Nostel Priory is taken from Banks' "Walks About Wakefield":—"We come to Nostel, a seat of the Winns, whose fine mansion in the park bears the name of Nostel Priory. The modern house is partly seen from the high road as we cross the elegant bridge that spans the large lake belonging to the grounds. The water lies on each side of the Wakefield and Doncaster turnpike road, and is about forty acres in extent. It consists of an upper, middle, and lower lake, measuring in length three-quarters of a mile. The overflow goes into the River Went. The present Nostel mansion was built in the early half of last century near the site of the Priory, which, having been adapted to the purposes of a private family, was to that time the residence of the owners of the estate. The eastern front looks down an avenue of trees, wholly or chiefly Elms, nearly a mile long, though less than half that distance lies within the limits of the park, the rest being continued across lands beyond the wall. The park, which is said to contain 250 acres of land, is well wooded and stocked with fallow deer.

The church stands within the park, and an inscription in the vestry states that Mr. Winn repaired it. It contains several monuments of the Winn family. The north chancel ceiling is ornamented by King Oswald's three crowns, a lion between three pheons, and other emblems. The priory of St. Oswald at Nostel was founded by Robert de Laci, the Norman baron, son of Ilbert de Laci, the well-known first Norman lord of the castle and honour of Pomfret. The name of Oswald, king and martyr, was held in great esteem in this part of Yorkshire, coming as he did after King Edwin's death at Hatfield, and re-establishing the kingdom of Northumbria. The monastery thus founded was for canons regular of the order of St. Austin. The site of the old monastery is said to have been where the church stands, the new priory of St. Oswald being erected a little north-westward of that and nearer the lake. The priory came to an end at the general dissolution of monasteries.

In 1654 Mr. Rowland Winn, a London merchant, purchased the estate and sold it the same year to his brother, George Winn, Esq., who became a baronet in 1660. The present house was built by the fourth baronet, Sir Rowland Winn, who died in 1765. The estate has descended from him to the present possessor, the recently ennobled Lord St. Oswald.

The gardens and pleasure grounds, which is the part of most interest to readers of this Journal, are large and are throughout in most admirable keeping, reflecting the highest credit upon the good management of the head gardener, Mr. Deavan.

The fruit and kitchen gardens are situated at a considerable distance from the mansion and near the principal entrance to the park. Immediately outside the garden walls is a very fine newly erected range of shedding for poultry, with large asphalted yards, in the which is kept a choice collection of various kinds. Inside the walls are a series of nearly new low brick pits heated by hot-water pipes and well stocked with useful plants for winter flowering, principal amongst which are Gardenias, Tuberose, Bouvardias, and Primulas. The first-named are clean, strong bushy plants well set with buds from cuttings struck in February. Some late Tuberose are throwing up strong flower spikes in the same pit with Gardenias; these being favourites with her ladyship, are grown in large quantities all through the season. Bouvardias also are grown by hundreds, principally for supplying flowers. The stock of Primulas is a fine one, a large number of plants being grown, all large, strong, and healthy, promising well to bear abundant blooms.

We next come to two well-built span-roofed ranges of glass erect about three years since. The first range is devoted to plants, and consists

of a greenhouse 32 by 18 feet, and a plant stove 60 by 18 feet. In each house there is a central bed or stage and side stages with a path round. The greenhouse was at the time of our visit very gay with large numbers of well-grown dwarf specimens of Zonal Pelargoniums profusely bloomed and making a blaze of colour. Most noticeable in the plant stove are the large bushes of Gardenias occupying the greater portion of the central bed. These bushes are about 5 feet through each way, are planted on low conical mounds in the centre of the pit, and are in vigorous health, bristling with bloom buds in all stages of development. The leaves are large, of a bright glossy green, without a speck of dirt apparent anywhere, and so free from mealy bug that Mr. Deavan told us he dare venture to make an offer of one guinea for each one that could be found. The treatment they had received was very simple. They were all lifted and replanted, disturbing the roots as little as possible, in February, the compost being about equal parts of fibrous peat and good turfy loam with a plentiful admixture of broken charcoal and rough grit sand. The drainage is good and the supply of water liberal. They are occasionally watered over the foliage and at the roots with clear soot water.

Whenever mealy bug or scale is seen the plants are at once syringed thoroughly with petroleum at the rate of a wineglass to a gallon of water, which Mr. Deavan thinks the best of all insecticides. His mode of applying it is by having two men each with a syringe, one discharging it vigorously into the pail, and so keeping the water violently agitated, whilst the other distributes it over the plants. Throughout the month of May flowers were cut from these fine bushes at the rate of 250 per day. Trained on the roof of this stove are large and strong Allamandas and Stephanotis, the latter still carrying plenty of fresh flowers, and the foliage as clean as that of the Gardenias underneath, maintained so by the free use of the same insecticide.

The second range consists of two vineries each 40 by 24 feet. The first of these is planted principally with Vines of Black Hamburgh, which have this season finished a fine crop, the greater portion of which had been gathered; but there are still hanging some fine well-shouldered bunches of about 4 lbs. weight each. In the late house a fine crop of fruit is finishing superbly, the varieties being Alicante, Lady Downe's Seedling, Madresfield Court, Gros Colman, and Gros Maroc. The latter is in appearance the finest Grape in the house, and is there considered to be the finest late Grape in cultivation, destined eventually to drive Gros Colman out of the market, owing to its superiority in appearance and flavour. Complaints are often made as to its being a shy setter. As a remedy against this they are impregnated when in flower with pollen taken from Black Hamburgs flowering at the same time in another house, the result being "a set" as good as could be obtained from the latter variety. In this late vinery the Vines are planted 5 feet apart up each side the house, meeting over the central path, and between each two rods a single stem of Tomatoes is trained in the same way, and carrying plenty of good fruit. In the early vinery was a grand pyramidal plant in pot of Rhododendron Gibsoni, 7 feet high and 5 through at the base, well furnished throughout and set with buds at every point; also several Azaleas similar in size and appearance.

Leaving these houses, we were conducted first through a lean-to Pine stove, in which a number of medium-sized useful fruit, principally Black Jamaica, were maturing. Over the pathway, along the back of the Pine pit, a number of plants of Hibiscus and Dipladenias were flowering profusely, and next, through an ancient range of four houses, consisting of three vineries and a plant house, heated by flues and built 120 years ago. The outside timbers of these houses are almost devoid of paint, as they have long been condemned to be taken down, but still they are apparently sound and much more fitted to withstand a gale than many modern houses only recently erected. At the back of this range, running the entire length, is the Mushroom house and potting sheds of the same date. In these we were shown a Mushroom bed spawned on the 22nd of August, and now showing Mushrooms in plenty.

There is a splendid range of comparatively newly erected lean-to Peach houses, facing south, 212 feet long by 12 feet wide, divided into four houses each 53 feet in length. The back wall is covered throughout the range with large and very healthy trees of Peaches and Nectarines, from which fruit had been gathered continuously since the first week in June. Some fine fruits of Bellegarde and Walbrton Admirable were still hanging. The front of each house is furnished with a low curved wire trellis, which in the first house is covered by healthy plants of Gloire de Dijon Rose, producing flowers in quantity. In the second it is occupied by Peach trees, in the third by Figs, and in the fourth by Peaches. It is found, however, in the case of the third house, that Figs and Peaches do not work well together in the same house, the heat required for maturing the late Figs being injurious to the Peaches. It is intended, therefore, shortly to remove the latter, and to convert the house into one for Figs alone. In this house were some large specimens of Tritonia anrea, the head of bloom on each plant being about 2 feet through. The colour was bright, and as thus grown would be very effective in the most choice collection of autumn-flowering plants.

Near this range is an ancient flued wall for fruit trees. This is supposed to be about 200 years old. The flues are not now used, but have been so up till a recent date. It runs north and south, dividing the kitchen gardens into two parts, the total extent of which is four acres, besides two acres of orchard, the greater portion cropped with vegetables between the rows of fruit trees.

In the second part of the kitchen garden is a broad border running the entire length of the garden (150 yards) well filled with bedding plants for cutting purposes, and separated from the vegetable garden by a strong wire fence covered with Gloire de Dijon Roses in fine condition. At one

end of this border is a beautiful specimen of the Maidenhair Tree (*Salishuria adiantifolia*). It is about 30 feet high and a perfect pyramid in outline. Adjoining this garden is a small lawn containing a number of Rose beds, both standards and dwarfs, clean and vigorous, also flanked at each corner by two magnificent specimens of Drooping Ash, the largest we have seen. On the south side of this garden is the riding school and conservatory, occupied principally by large and healthy Camellias and fine pyramid Azaleas, each about 7 feet high by 5 feet in diameter. In this house also, as in the Peach houses previously described, we noticed a great number of pyramidal specimens, about 3 feet in height, of scented *Pelargoniums*. Lady St. Oswald takes great interest in these, and esteems them amongst her choicest favourites, consequently by her wish a great many are cultivated, including amongst them every known variety.

From the carriage drive into the park past the east front of the mansion we have a fine view of a noble avenue of English Elms about one mile in length, the trees all of great size and beauty. About 300 head of deer are kept in this park; numbers of them are visible in the

J. Hall, 26, Westgate, Wakefield, from whom many other beautiful views of Nostell may be obtained.

GRAPES AND GRAPE JUDGING.

I HAVE always entertained a certain amount of respect for "A Kitchen Gardener's" writings, believing him to be an experienced and practical gardener, but when I read such statements as those on page 293 we almost begin to wonder if he really is in earnest or not. He even disputes the superiority of Madresfield Court over Alicante, and this simply on the ground of the popularity of the latter. How this proves the case is a mystery. He asks, "Has his (meaning Mr. Iggulden's) Madresfield Court or any other of his summer Grapes been passed once this season in favour of later varieties?" Did not Mr. Iggulden quote particularly the case at the late Taunton Show, where, if I mistake not, two lots of Alicantes were placed before good Madresfield Court? Just let "A Kitchen Gardener" imagine himself the exhibitor of the latter, especially



FIG. 53.—NOSTELL PRIORY.

avenue, and add much to the picturesque effect. The woods surrounding the lakes contain fine collections of hybrid *Rhododendrons*, which are a grand picture in May and June. A charming view of a portion of the west front of the mansion is obtained from the middle lake. There is also a beautiful miniature garden called the menagerie gardens, from the fact that at one time a collection of wild animals was kept. This garden is formed in the bed of what has been an ancient stone quarry, and the boundary walls of which are the natural red sandstone formation as left in quarrying. Upon these walls British Ferns, principally *Athyriums*, are growing in quantity, and find a congenial home. Some very fine examples of *Lilium auratum* are flowering in this sheltered garden, having occupied their present position about three years. In this garden is a very ancient and romantic cottage, which was once the gardener's cottage, but is now unoccupied. In front of this cottage is a fine old tree of the *Snowy Mespilus*.

Having now concluded our tour of the gardens and pleasure grounds, we have to record our thanks to Lord St. Oswald for the pleasure he has thus afforded ourselves and our large party, and to Mr. Deavan, his able gardener, for the interest he imparted to our visit to Nostell by his courtesy and solicitude to afford all the information in his power.

The view is engraved from a photograph furnished by Messrs. G. and

if he had taken more than ordinary pains to produce it in good condition as probably the exhibitor in this case had done. How would he have taken it. Not in very good grace, I fear.

But after all this does not strike the root of the question. I maintain that judges by following such a course as the one quoted, whether consciously or not, are promoting evil by encouraging gardeners to cut Grapes in August and September which certainly ought not to be cut for months later. Who, I should like to know, would grow Alicantes and Gros Colman to be used in the months named? and this season I saw the latter exhibited in July in the north of England. By all means let the cultivation of Madresfield Court be encouraged, and we shall then in a comparatively short time see whether it is not a "standard" Grape (not for keeping, no one claims that for it) or not. I do not exactly say it will become a standard variety, but I do venture to predict that when its cultivation is better understood, as it certainly is rapidly becoming, that it will occupy a conspicuous place in every Grape-growing establishment of any pretensions.

Everyone who has been interested in this Grape, and who has read the reports of shows published in the Journal, must have noticed how increasingly popular it has become the last year or so, and can we wonder at it? for what other black Grape have we to compare with it for summer

and autumn use? I maintain that the Black Hamburg itself cannot compete with it for flavour nor appearance either when well grown. Muscat Hamburg may be as good in point of flavour, but will not compare in berry or colour. If "A Kitchen Gardener" had seen the grand bunch of Madresfield Court exhibited last month at Dundee, and again at Edinburgh, I fancy he would hesitate before pointing out the bad points, which he did on page 293, for certainly in the splendid examples referred to none of these bad points were to be seen. It reflected the highest credit upon the grower, whose name I unfortunately cannot now remember. I shall never forget the splendid examples of this Grape that used to be seen at Cardiff a few years ago from the gardens of Cyfarthfa Castle. It was these examples of cultural skill that first prompted me to endeavour to overcome the difficulties attending the culture of this grand Grape, and if I have not succeeded yet I feel encouraged by what have been obtained, and shall certainly persevere still further in spite of all "A Kitchen Gardener" may have to say against it.—WM. JENKINS.

I AM glad to find that this subject is receiving the attention it merits and am convinced the outcome of it will be that judges next season will not so readily accord first honours to unripe fruit. According to the views of "S." (page 268), who argues cleverly, and carefully avoids answering important questions put to him, if we discourage the exhibiting of late sorts of Grapes at our early shows, then we inflict great hardships, and what is worse, as being of more general interest, we exclude all our finest sorts, and these will never be shown in perfection. A very few years ago this argument would have had some weight, but is now simply sentimental and worthless. Is it possible he has overlooked the fact that Chrysanthemum shows are now held in nearly every town and village of any importance, through the south and south-western counties at any rate, and that in every case prizes, and in some instances good ones too, are offered for Grapes? It is then when these magnificent examples of late Grapes should be seen to advantage, and receive the honours rightly deserved, but to encourage the general forcing of these so as to have them coloured early—I will not say ripened, for ripe they are not—is a very different matter, and I am surprised to find that there are practical disinterested men advocating it.

I think it will generally be conceded that not one of these showy late Grapes, if we except Mrs. Pince, which under good treatment is much better in quality than the majority, are of first-rate quality, and some of them at their best only second-rate, yet they are, if we may believe "A Kitchen Gardener," to gradually oust out such sorts of Madresfield Court, and doubtless Black Hamburg, one being fully equal to the other taking all things into consideration, and both require about the same amount of skill to bring them to perfection. Black Alicante in particular is considered worthy of every encouragement, and to be the Grape of the future, and why? Simply because, according to his ideas, it is the most easily grown of all Grapes, never failing to set and colour well, and keeping sound and in splendid condition for months, "while its value on the table may be reckoned from the quantity grown everywhere and the great demand for it in the market." The latter qualification completely spoils the whole of "A Kitchen Gardener's" rather overdrawn estimate, and he would have done better to have boldly stated that the quality was all that could be desired, or something to match what he had previously advanced. This correspondent really contrives to refute his own arguments, his zeal evidently overrunning his discretion. For instance, he expresses the opinion, and which it will not serve my turn to dispute, that varieties "which are in the habit of winning prizes, are soon sought after and planted by the public generally," the natural consequence being that showy Grapes, unless intelligently judged, as they certainly were not at Shrewsbury and other shows I have previously mentioned, will gradually oust out sorts that require more skill in culture perhaps, but which are infinitely superior as far as quality is concerned, and that, after all, ought to be the primary test. I would like to call the attention of "S." to this passage, which I quoted from "A Kitchen Gardener's" letter, and would ask him whether a better reason could be given why these second-rate and admittedly easily grown sorts should be excluded from the early shows, or at any rate from classes where they would have the better varieties at a decided disadvantage.

Then as to the other proof of quality, as shown by the great demand for it in the markets. Evidently "A Kitchen Gardener" knows but little about the class of fruit that rules the market, or, if he does, I do not. According to my experience, appearance has more to do with a ready sale than quality, the latter being quite a secondary consideration. Again, how many employers would eat the best ripened Alicantes placed before them if they could have the choice of only moderately well-grown Black Hamburg, Muscat Hamburg, or Madresfield Court? May I ask, Does the noble marquis alluded to have those Alicantes regularly sent to the table after, say, the Black Hamburgs are finished? or is it not rather nearer the mark to say that the majority of those handsome and doubtless well-ripened Alicantes find their way into the markets? Otherwise I shall have but a poor opinion of this nobleman's taste, for the simple reason that I never tasted Alicantes to equal either Hamburgs or Madresfield Court. The latter is by no means so difficult to grow as some people seem to imagine, but it certainly requires more skill to bring it to perfection than does the Alicante. Madresfield Court is, as a rule, quite as well coloured as the majority of the bunches of Black Hamburg, keeps better than that variety, and may safely be said to better please the palate of some connoisseurs. With us it keeps plump and good till late in October, and by that time the Alicante is fit for the table.

We give Alicantes plenty of fire heat, and so must others if they wish

to have it in a presentable condition, or for eating either early or late in the season, and that is why I maintain it is not an amateur's Grape. It is highly satisfactory, no doubt, to win a prize with one of those easily coloured sorts, but when the excitement attending this achievement has subsided, or say when the Grapes, either those cut for the show or those left on the Vine, come to be eaten, it may be found that even their own Grapes may be sour.

"A Kitchen Gardener" asks if my "Madresfield Court, or any other of my summer Grapes has been passed once this season in favour of later varieties." I fail to see how my answer could possibly affect the argument we are holding, but at the same time must answer in the negative. Last season, however, I was very badly treated in that respect, and instead of being third with Madresfield Court in a class "for any other black variety," ought, in the opinion of one of the most successful gardeners of the day, as well as nearly every Grape-grower present, to have been either first or second, and the Alicante third. So much for the assertion that the majority of cultivators approve of this haphazard style of judging. Local societies are in the habit of engaging too many judges, little or no regard being paid to their qualifications. At least one good man of acknowledged reputation should assist to judge in each section at local shows.—W. IGGULDEN.

THERE is a paragraph in "Thinker's" paper this week which I think should not be allowed to pass without a protest. He states that in the "awarding of prizes for Grapes at exhibitions the whole question turns on the purpose for which the objects are staged," and that "in most cases this purpose is to make an imposing display that will attract the public and bring gate money," adding, "this being so, as I think it is, late varieties of Grapes cannot be excluded from summer shows." I think that, perhaps, the purposes and objects of horticultural societies and exhibitions were never before put on such a low ground as this. "Gate money" is the object. What does it matter, therefore, whether the fruits and flowers are in season or not, or whether the real object of cultivating them is served or not? In plain English this is "Thinker's" creed on the subject of shows. It has been often said that the original objects of horticultural exhibitions were becoming obscured by such motives and "purposes" as he describes, but no one has dared openly to avow as much before, and I do not know but that after all we are indebted to "Thinker" for his frankness. I read in the history of horticultural societies, as originally promoted by Mr. Knight, Mr. Wedgewood, Sir Joseph Banks, and others, that their purpose was to "encourage horticulture as a useful and humanising industry, and to promote a taste for flowers and habits of neatness and order among the humbler classes, &c.," and now we have the exponents of the subject putting such good purposes as these quite out of sight.

With regard to exhibiting late Grapes at summer shows, I have always thought that the practice was indefensible. Late Grapes are avowedly grown for winter and spring use, and for no other purpose, and the proof of the excellence and usefulness of such varieties consists in producing them in perfection at the season they are required. That being so, inducements to produce them months before they are wanted or fit to use only defeat their purpose. Take the Lady Downe's Grape for example. Its one good quality is that it keeps well, and but for that quality no one would prefer it to better Grapes like the Black Hamburg. What good is there, then, in offering prizes for such a Grape in summer and early autumn? In other words, if the object of encouraging the culture of the Lady Downe's Grape is its excellent keeping qualities, why not offer the prize for it at a season when these qualities can be proved? always assuming, be it remembered, that the "purpose" is the culture of a good late Grape, and not mere "gate money."—NON-BELIEVER.

MR. WARDEN seems to have entirely misunderstood what I wrote, and I thank the Editor for his footnote. I may say I have no desire to "encourage the growth of late Grapes for summer and autumn shows" solely for the purpose of having them displayed then. What I want is, that seeing late Grapes are shown at these shows in response to the invitations of prize schedules, justice should be done them, and other things being superior, they should not be debarred from obtaining the award simply because they are not shown at times when best for eating. I think this has been made plain enough all through this discussion. "Thinker" seems to have turned the question pretty well over in his mind before putting his "thoughts" to paper. I am glad to see him out once more, as, though he does not always agree with other able writers and experienced cultivators who are entitled to the greatest consideration, still there is very much that is interesting and instructive in his "thoughts," and they have the great recommendation of being written in a pleasant manner entirely free from mere carping criticism.

The meaning of my remarks on the disposal of Grapes after flower shows appears to me quite plain. No doubt Mr. Warden will admit this after again reading them, and also noting what the Editor has appended to his remarks. I hope that an agreement will be come to by all which will prove satisfactory, and that any cause for discontent may be removed. Our flower shows, as "Thinker" remarks, cannot be carried on without due regard being given to the gate money. To banish all late Grapes from our early autumn shows would take away a very attractive feature, and no doubt the consequences would be that financially shows would suffer. The public like appearances, and they must be considered when societies have to depend in a great measure on what is drawn for admission for their maintenance.—S.

MUCH has lately been written in your pages about judging Grapes

The clashing of early and summer season sorts with late or winter season varieties at September shows will always be unsatisfactory with both judges and exhibitors till some alteration is made in the arrangement of prize lists. Those who would limit the prizes to those in season I think make a great mistake, as it of necessity restricts the exhibitor to two or three of the leading sorts, and thereby limits the usefulness and interest of the show. It is disappointing for visitors, especially gardeners, when they seek in vain, amongst scores of bunches, for any other than white Muscat and Black Hamburgh. The general public may be pleased to look at and admire such a display, as they would with longing eyes gaze through the window of a first-class fruiter's shop; but to the fruit-grower it has but a passing interest compared with that evinced at the late show at South Kensington. It was a very interesting show of Grapes, and I should say was satisfactory to judges, exhibitors, and visitors. Now would it not be possible for those engaged in promoting shows to try some means of having as many sorts represented as possible? Why must we always go on in the same old groove, "Two bunches so-and-so," or "Three bunches," as the case may be? Why have two or three bunches of one sort any more than having the same number of Dahlia blooms, one variety, in a stand of twelve (an idea that would be laughed at by our friends the florists)?

I see no reason why prizes should not be offered for eight, six, four, or two bunches, distinct. This, I feel sure, would, without any additional classes or larger prizes, bring to the local exhibition tables many excellent sorts of Grapes seldom or ever seen there, and by their presence lend a fresh interest to the show. "And what about the judging?" some will be ready to ask. I think their task would not be more difficult than it is at present, and I think their awards would, on the whole, be more satisfactory than they seem to be under the present system. As "Thinker" says, Give us good men who know what they are doing, and let them exercise their own discretion.—A WORKING GARDENER.

AUTUMN SHOWS.

EXHIBITORS of Chrysanthemums will soon be actively engaged in preparing for the numerous shows announced for the present season, and the following list of fixtures may be useful as a reminder. Secretaries of Societies not mentioned will oblige by forwarding their schedules.

October 21st to November 4th.—Chiswick (Pear Congress).
 October 27th and 28th.—South Kensington (Chrysanthemums and Vegetables).
 November 3rd and 4th.—Ealing, Southampton, and Lambeth.
 " 4th and 5th.—Brixton.
 " 5th and 6th.—Richmond.
 " 10th.—Southend and Putney.
 " 10th and 11th.—Brighton and Kingston.
 " 11th.—Basingstoke.
 " 11th and 12th.—National Chrysanthemum Society (Westminster Aquarium) and Croydon.
 " 12th and 13th.—Lindfield and Portsmouth.
 " 13th and 14th.—Sheffield and Huddersfield.
 " 14th.—Ramsbottom.
 " 17th.—East Grinstead and Devizes.
 " 17th and 18th.—Lincoln and Winchester.
 " 18th and 19th.—Northampton, Bristol, and Birmingham.
 " 19th.—Taunton, Hammersmith, and Aylesbury.
 " 19th and 20th.—Hull.

GARDEN NOTES.

WORKSOP MANOR.

THE garden at Worksop Manor, Notts, is at all times of the year well worth a visit by members of the craft; but perhaps at no time will they be better repaid for the time so spent than during the months of August and September, the weather being propitious, for then the fine terrace is ablaze with colour. There is abundance in the kitchen garden both of fruit and vegetables, and the numerous glass structures contain fine crops of Grapes, Melons, Pines, late Peaches, Nectarines, and Figs, as well as choice collections of decorative flowering and foliage plants.

A by no means uncommon failing amongst gardeners is that of thinking we possess something better or larger than other people have, and such thoughts are apt to give rise to conceit. Now, there is nothing takes the conceit out of a man (if he is conceited) so much as that of comparing the best of his products with that of his neighbours', when he often find that his Grapes, his Pines, his flower garden, his horses, or his pictures are not so uncommonly good as he thought. In the case of gardens, of course, we cannot convey them from place to place, nor is it desirable, but most gardeners can spare an occasional day or half day to visit some garden of repute in his vicinity, and if he is a man with his wits about him he will not fail to learn something, either what to do or what not to do, for the latter is not less important than the former.

Worksop Manor Gardens have this year well sustained their reputation for beauty and productiveness. Fruit has been plentiful on the wall trees; Peas, Potatoes, Beet, Onions, and Cauliflowers could scarcely be surpassed in quantity and quality. In the Melon house was a fine crop of beautiful Melons, a seedling of Mr. Sutton's, and in the next division was a fine batch of Calanthes. The Grapes in the second vinery were very fine in berry, well coloured, and useful bunches. The early vinery was cleared of fruit. The late vinery and Muscat house contained good crops of Muscat of Alexandria, Black Hamburgh, Gros Colman, White Tokay, Lady Downe's, Alicante, &c. Peaches and Nectarines were plentiful in the orchard house, and in the Fig house a heavy second crop of Figs (Brown Turkey) was ripening. All fruit was cleared out of the early Peach house, and the wood gave evidence of being well ripened. In an adjoining division was a splendid crop of Tomatoes, the plants being on a shelf and trained close to the glass. At the back of this range of houses is a house devoted to plants, and on the roof are trained three Lapagerias,

which are limited to a space of about 36 feet by 6, and in this space the flowers are produced by thousands, the very smallest shoots such as some growers have advocated being cut out, having developed three, four, and five flowers at a joint. One of these plants is growing in a stone trough which holds about 2 cubic feet of soil. These Lapagerias are worth travelling fifty miles to see.

The terrace was never more beautiful than it has been this season, and great credit is due to Mr. Sutton for its artistic arrangement. Not the slightest incongruity was observable, and the whole presented a charming picture, masses of brilliant colour being balanced by judicious grouping of foliage plants and carpet beds of greens and greys. Amongst plants used for edging and carpet beds were *Pyrethrum selaginelloides*, *Achillea umbellata*, *Antennaria tomentosa*, *Iresine brilliantissima*, *Alternanthera amabilis*, *Tradescantia zebrina*, *Centaurea ragusina*, *Herniaria glabra*, and *Mesembryanthemum cordifolium variegatum*. The brighter colours were given by *Pelargoniums Vesuvius* (scarlet), *Corsair* (scarlet), *Bayard* (crimson), *Waltham Seedling* (crimson), *Christine* (pink), *Master Christine* (pink), *Lady Middleton* (rose), *Emile Licau* (salmon), and *Lobelia Brighton*.

BLITHEFIELD.

On the 22nd of September I had the pleasure of visiting the gardens of Lord Bagot, Blithfield Hall, Rugeley. These have been for many years under the superintendence of Mr. Bannerman, and a better gardener Lord Bagot need not wish to have. Mr. Bannerman has made himself a name as a first-class Grape grower during the past twenty years, and has proved himself a formidable opponent at most of the principal horticultural exhibitions in the United Kingdom, and he is likely to do so in the future, judging by what is to be seen at Blithfield. That he is an enthusiast in Vine culture is readily detected as soon as one enters the vineries, and a question asked or a remark made concerning their principal occupants, and the fine crops of superbly grown and "finished" fruit hanging overhead demonstrate that he is a master of the art. Like other competent men, he can afford to impart to others some of the valuable information he has acquired through close observation and long experience, and that he does ungrudgingly, thus making an inspection of the vineries unusually instructive. One of the most striking features in this range was a Gros Guillaume carrying nearly 60 lbs. of well-finished Grapes. There were about twenty bunches in all, several weighing 5 to 6 lbs., and several others 4 to 5 lbs. So highly were they cultivated that only one berry in the total crop showed any appearance of not "finishing." Gros Colman was also worthy of special notice for their large and compact bunches, immense berries (above the average), and superb finish. A walk along the front of the vineries outside and an inspection of the borders gave evidence of the fact that Mr. Bannerman, like other first-class Grape-growers, believes in keeping the Vine roots as near to the surface as possible and consistent with safety. In several low houses Cucumbers and Tomatoes are grown in large quantities, whilst in others clean and healthy stock of Poinsettias, Calanthes, Gardenias, and Eucharises are being grown in quantity for decorative purposes. The Peach trees in the houses were in the best of health, foliage dark green and free from red spider, those in the early Peach house being so well ripened and clean that a shake of the trellis would cause the leaves to fall in showers, and as green as though the trees were in full growth.

The kitchen garden, about four acres in extent, is well cultivated, there being vegetables in quantity of high quality, and fruit in great abundance. In a large conservatory near the mansion are some large Camellias in robust health and well set with buds. The pleasure grounds and flower gardens, extending over fourteen acres, are picturesque and kept in admirable order. In close proximity to, and, as it were, forming a portion of the pleasure grounds next the mansion, is a small orchard, the only dividing line between it and the "dressed" grounds being a broad gravel path flanked with pillars and festoons of Roses trained over iron framework. To me, this orchard in such close quarters with the mansion and the prim flower garden, was an agreeable surprise, for I have never yet been able to understand why the masses of delicate white and lovely pink of our humble orchard trees in spring, and their wreaths of gold, crimson, and russet in autumn, should be relegated to some obscure corner of the garden or farm. I am quite sure that by such arrangements our pleasure grounds are deprived of some most lovely pictures.

INGESTRE HALL.

Returning to Ingestre, the first object that attracts attention is a new block of light, well constructed, span-roofed houses standing north and south, erected by Messrs. Halliday of Manchester. These houses are in four divisions, two of which are parallel to the others, and along the sides of each range, and forming a part of the whole, are useful frames or pits heated by hot water, and in these Mr. Gilman was having planted some thousands of Violets, principally Marie Louise and The Czar, with strong and promising crowns. The first division of the houses was devoted to greenhouse plants, of which there was a good collection; but the plants that attract the most attention were two magnificent specimens of *Dracaena latifolia*, these were about 10 feet high, and were clothed with their rich green and graceful foliage fully two-thirds down the stem, and not a withered leaf to be seen. It would be difficult to find another pair to match them in every respect. The next division is used as a stove and contains a miscellaneous collection of Palms and other foliage plants for house decoration. The first division of the other range is planted with French Beans to come into use from the middle of November, and very promising they looked. In the summer time this house can be used advantageously for the cultivation of either Melons, Cucumbers, or Tomatoes. The next division is filled with a fine healthy stock of

Calanthes, Euphorbias, and Poinsettias. It would be difficult to find a place where Poinsettias are better grown than they are at Ingestre. The low houses devoted to Gardenias are filled with the customary clean and healthy stock, and *Ficus repens* growing from the rafters of the fernery gives a charm to what would otherwise be an ordinary lean-to house, but which contains fine specimens and half-specimens of the usual cultivated Ferns. The Melon house was filled with beautifully netted and tempting fruit, the principal varieties being Bellmore Hybrid, Hero of Lockinge, and Eastnor Castle. An adjoining house was filled with Tomatoes bearing a heavy crop. The late varieties were filled with finely grown and finished fruit, Muscats, Alicantes, White Tokay, Hamburgs, and Gros Guillaume in particular. The Peach houses were nearly cleared of their fruit—and such fruit!—Salwey alone remaining. The trees promise to do as well in the future as in the past, and that is not saying a little as to their condition.

In the large conservatory the specimen Camellias are showing abundance of bloom, and the fine Dicksonias are in the rudest of health. There is a good specimen of *Grevillea robusta*, which reminds me that this elegant and easily grown plant is not so often seen as it deserves to be. Flower gardening, in the general interpretation of the phrase, is in abeyance at present owing to the building operations at the Hall, but the surrounding pleasure grounds are as orderly and well kept as though the family were in residence. In the frame ground were some grand Chrysanthemums for decorative purposes; they were sturdy bushy plants, clean and well set with buds. By the side of the kitchen garden walks were several thousands of Strawberries in pots with thick, dark, and massive foliage and plump crowns, which promise to bring forth abundantly in due season. In one quarter of the garden was a splendid and regular crop of Brussels Sprouts. Mr. Gilman pins his faith to the old imported when it can be obtained true. Carrots were clean and abundant, as were all other vegetables. Hardy fruits of all kinds were plentiful. The walls of Mr. Gilman's cottage were covered by bright red clusters of *Crataegus pyracantha*, which are netted to preserve them from the birds, and are used in winter for decoration.—J. U. S.

FRUITS IN 1885.

THE season of 1885, speaking generally, is one of the best I ever remember, and, with but few exceptions, the majority of fruit trees have borne abundantly. Gooseberries were a good crop. There was a very heavy crop of Black, White, and Red Currants, and the fruit was of good quality, especially from young trees six and seven years old. Anyone having old stools of Black and Red Currants may mark a great difference in the quality of the bunches of fruit, as from a young plantation it is much superior, and, what is of equal importance, requires much less time to pick. The present is a good time to insert cuttings of Gooseberries or Currants or to buy young trees from the nurseries. A good dressing of decayed manure should be dug into the land previous to planting, and if possible choose a dry day. A good distance for the permanent rows is 6 feet apart, and the bushes 4 feet asunder.

Raspberries were plentiful, but Strawberries with me this year were a failure, particularly those on the south borders. The only crop I had worth speaking of was on the north border, where the soil was heavy and cool.

Plums have borne abundantly. Early Prolific, Victoria, Orleans, Mussel, Kirke's, Green Gage, Reine Claude Violette, Jefferson's, Coe's Golden Drop, Mitchelson's, and the Red and Yellow Magnum Bonum have all had heavy crops. I never remember to have seen the Victoria so good as it has been this year. Of Damsons I have only a few trees, but the Prune Damson is particularly good. There is a Plum in this neighbourhood ripening about the first and second week in August that has done well this year. The cottagers know no other name for it than the "Wheaten" Plum; that is the name it has been known by within the memory of the oldest inhabitant, and is so called because it ripens about the same time as the Wheat. I have not seen its name in any trade catalogue, but it is an excellent Plum for preserves, resembling the Green Gage in flavour, and usually realises a good price in the market. It is quite green when ripe, of medium size, oval shape, and easily falls when ripe, so it should always be planted in an orchard with grass beneath to keep the fruit clean. All the trees I have seen have been so planted, as they find that much the easiest way to gather the fruit is to shake the trees and pick it up from the ground. It is propagated by suckers, and when about 6 feet high it bears fruit, never growing to a very great height. In some cases I have seen the suckers thinned out and left about 6 feet apart to form trees, cutting the old ones down when exhausted.

Old orchard trees of Apples in most cases have heavy crops of fruit. One of the very best for culinary purposes that rarely fails is Keswick Codlin. It has been in use from the end of July till the present time, October 1st. It is very prolific. One unpruned standard has had ten bushels of fruit picked from it. King of the Pippins also bears abundantly and seldom fails. Ribston Pippins are a good crop this year. Other varieties that are bearing well are Potts' Seedling, Striped Beeding, two very large varieties, as pruned bushes;

Nonesuch, Borovitzki, Hawthornden, Nonpareil, Adam's Pearmain, Minchall Crab, Dumelow's Seedling, Leydon Pippin, and Baldwin, the three latter being excellent keeping varieties. Some others have only partial crops, but those named are established and in full bearing.

Pears appear to be plentiful this year, and in most cases of good quality. More sunshine, however, is needed to finish off some of the late varieties. The first with me to ripen was Doyenné d'Été, a good early Pear for the end of July. Next came the Lammas, only second-rate, then Beurré Gifford and Jargonelle. Williams' Bon Chrétien followed next. This fine variety wants very little praise. Several trees of it should be planted in different positions in the garden to make its season last as long as possible. Orange Bergamot, a very old variety, is now in use and of good quality. It does well as an orchard standard. Louise Bonne of Jersey, Crasanne, Duchesse d'Angoulême, l'orelle, or Trout Pear, very handsome; Beurré Diel, Beurré Superfin, Beurré Rance, Chaumontel, St. Germain, Catillac, and a few others unknown by name to me are all bearing heavily.

Apricots were a good crop and required thinning; Moorpark was first-rate. Peaches and Nectarines bloomed well, but the east wind in the spring crippled the trees so much that there has been only a



Fig. 54.—*Miltonia cuneata*.

second-rate crop of fruit. Cherries, especially Morellos on a north aspect, were plentiful. Old orchard trees of Elton, Dukes, and Black Hearts in the neighbourhood had good crops of fruit.—A. HARDING, *Orton Hall Gardens, Hunts.*

MILTONIA CUNEATA.

THE *Miltonias* constitute a genus of handsome Orchids. The name was given in honour of Earl Fitzwilliam, who was an ardent admirer of plants of this nature. They are mostly natives of Brazil, and consequently require a warm stove temperature, especially during the season of growth. If given heat and a moist atmosphere few Orchids grow more freely or flower more profusely, and their richly coloured flowers are admirable for cutting and the furnishing of vases.

The plants will grow either in baskets or in pots; if in the latter it is necessary that they be potted very high—that is, the pots should be nearly filled with crocks; and the material, very fibrous peat, sphagnum, and charcoal, should be made to form a cone above the rim of the pot. The creeping stems from which the pseudo-bulbs grow should be pegged to the surface of the compost with small hooked pegs, and with good cultivation the plants will increase in size rapidly. If grown in baskets the plants require much the same treatment as *Stanhopeas* as to heat

moisture, and rest. The species vary considerably in the size and colour of their flowers, but all are attractive and worthy of culture. *M. spectabilis* is white and violet, and is, as its name implies, very showy, as also are its darker varieties *atropurpurea* and *colorata*. *M. candida* has a white lip and yellow and brown sepals, while *M. cuneata*, the wedge-lipped *Miltonia*, is yellow and purple. The plants being epiphytal grow perhaps best in baskets, and will flourish in any plant stove where the summer temperature ranges from 60° to 90°, and the winter temperature 55° to 60°.

GROWING GRAPES ON THE STANDARD PRINCIPLE.

My attention has been accidentally called to an article on Grapes grown in a house 100 feet long, 30 feet wide, six Vines in a row, twenty-five rows, the Vines apparently drawn straight up to the roof, 15 feet high, by a wire. The variety grown was Black Alicante, and the results seemed very extraordinary. The houses belonged to a grower for market, a Mr. Church, near Norwich. I wish to know if others have experience in growing Vines on this plan and what they have to say.—T. RAFFLES BUTTRY.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 13TH AND 14TH.

APPLE AND PEAR SHOW.

THE remarkably successful exhibitions held at South Kensington this season are now drawing to a close, and it is very satisfactory to see that their interest is well maintained or even increased with the concluding shows. The Apple and Pear Show on Tuesday and Wednesday last presented an extraordinary gathering of those fruits, the Apples in particular being exceptionally good. There is also every reason to expect a similarly extensive display of Chrysanthemums and Vegetables at the final show of the series, which takes place on October 27th, when the Royal Horticultural Society and the Committee of the Inventions Exhibition will have every reason to be satisfied with the manner in which the programme has been carried into effect. That they have imparted additional features of great interest to the numerous attractions cannot be doubted for a moment by those who have seen that every day these shows have been held the conservatory has been the most crowded portion of the Exhibition, and on Tuesday last that building was thronged the whole of the afternoon.

APPLES.

The display of Apples was surprising, for many have complained that crops were short, yet it is evident that it is very far from being generally the case, as the competition was as keen in the majority of cases as could be wished under the most favourable circumstances. It is true the fruits were not quite so large, but for colour they were perfectly satisfactory in all the leading exhibits, and there were abundant fine fruits of the Warner's King and Peasgood's Nonesuch type. Worcester Pearmain and similarly highly coloured varieties imparted some beautiful tints, and the general effect was greatly heightened by the numerous dishes of these. The number of dishes in competition was about 1200, and with 500 contributed by nurserymen out of the classes, made a total of 1700, or over 10,000 Apples. The greatest number of exhibitors in one class was eighteen, that being the number of dishes of Blenheim Pippin staged in the class devoted to it, and it may be interesting to note that the five other Apples next to it in point of numbers in the single variety classes were Cox's Orange Pippin, 16; King of the Pippins, 15; Ribston Pippin, 14; Warner's King, 13; and Dumelow's Seedling, 11.

The principal class was that for a collection of Apples not exceeding 100 varieties, confined to nurserymen, in which there were five competitors. Messrs. G. Bunyard & Co., Maidstone, were deservedly awarded the premier prize for an excellent collection comprising some handsome examples of the best varieties, well coloured, and in the majority of cases of good size. They were also very tastefully set up on leaves, which added to the beauty of the exhibit. Amongst so many that were good it is impossible to name all that deserve note, but the following were some of the best represented:—Peasgood's Nonesuch, Lady Henniker, Mère de Ménage, Red Hawthornden, Dumelow's Seedling, Lord Derby, Early Julien, Lady Sudeley, Duchess of Oldenburg, Margil, Cellini, Winter Queening, Warner's King, The Queen, Cox's Pomona, Dutch Codlin, Cox's Orange Pippin, Grenadier, Yellow Ingestrie, Washington, Gascoigne's Scarlet, Melon Apple, Pott's Seedling, Lord Sniffield, Dutch Mignonne, Scarlet Nonpareil, Emperor Alexander, Belle Dubois, Nanny Apple, Worcester Pearmain, Tower of Glamis, Winter Peach, Sykehouse Russet, Court Pendu Plat, and Sturmer Pippin. The second prize was gained by Messrs. J. & G. Lane, Great, St. Mary Cray, who had a pretty and varied collection, Messrs. Paul & Son, Cheshunt, taking the third place for even well-coloured fruits of the best varieties like those already named. In the amateurs' class for a collection not exceeding fifty varieties there was the same number of exhibitors, Mr. Sidney Ford, gardener to W. E. Hubbard, Esq., Leonardslee, Horsham, leading with very handsome fruits, including a good proportion of brightly coloured varieties. The finest were King Apple, Mère de Ménage, Lady Henniker, Devonshire Queen, Hoary Morning, Warner's King, Golden Reinette, Emperor Alexander, Fat Ox, Thompson's, Poor Man's Profit, and Blenheim Pippin. Mr. D. C. Powell, Powderham Castle Gardens, Exeter, was second, and ran Mr. Ford very closely for the first position, as his collection was an extremely good one. There was a back of remarkably fine samples of Peasgood's Nonesuch, Bedfordshire Foundling, Mère de Ménage, Lord Derby, Annie Elizabeth, and Betty Geeson, the others being somewhat small but highly coloured. Mr. A. Waterman, gardener to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford, was placed third, the coloured varieties, such as Worcester Pearmain and Ladies' Favourite, with Emperor Alexander, being very fine.

For a collection of a dozen varieties of kitchen Apples Mr. C. Ross, gardener to Charles Eyre, Esq., Welford Park, Newbury, was first amongst

the four competitors, showing handsome even fruits of Tower of Glamis, Mère de Ménage, Annie Elizabeth, Stirling Castle, Warner's King, Cox's Pomona, Peck's Pleasant, Lane's Prince Albert, Brabant Bellefleur, Hoary Morning, Earl of Derby, and Peasgood's Nonesuch. Mr. Powell and Mr. John Grey, Normanton, Stamford, were respectively second and third. There were twelve entries of six culinary varieties, Mr. F. Miller, gardener to J. T. Friend, Esq., Northdown, Margate, securing first honours with large fruits of Kentish Fillbasket, Emperor Alexander, Peasgood's Nonesuch, Annie Elizabeth, Blenheim Pippin, and Waltham Abbey Seedling. The second and third honours were accorded to Mr. Rutland, gardener to the Duke of Richmond and Gordon, Goodwood, and Mr. C. Ross, both of whom showed well in the class.

Of twelve dessert Apples there were six collections, Mr. Rutland there winning premier position with beautiful samples of Cackle's Pippin, Melon Apple, Nonpareil Russet, Cox's Orange Pippin, Brownlee's Russet, Nanny Apple, Kerry Pippin, Mannington Pearmain, King of the Pippins, Ribston Pippin, and Blenheim Pippin, the last-named being of particularly rich colour. Messrs. F. Miller and A. Waterman were the second and third prizetakers, the former showing Fearn's Pippin, Ribston Pippin, and Cellini well, while the latter had Duchess's Favourite, Worcester Pearmain, and Ribston Pippin equally good. Thirteen exhibitors staged in the class for six varieties of dessert Apples, Mr. Wm. Jacobs, Pound Street, Petworth, winning first honours with remarkably handsome fruits of Nanny Apple, Lady Sudeley, Incomparable, Ribston Pippin, King of the Pippins, and Cox's Orange Pippin. These were some of the richest-coloured fruits in the Show, and fully merited the position they were accorded by the Judges. Mr. Rutland followed closely, showing Nanny Apple, Cox's Orange Pippin, Melon Apple, Ribston Pippin, and King of the Pippins. Mr. C. Ross was third, his best fruits being Cornish Aromatic, Worcester Pearmain, Adams' Pearmain, Cox's Orange Pippin, and Margil.

The single variety classes were very interesting, and the competition in all of them was keen enough to render the judging difficult in several cases. Blenheim Pippin was shown by eighteen exhibitors, the generally good condition of the fruits and even size proving how useful a variety it is. The prizes were won by Mr. Rutland, Mr. Goldsmith, gardener to C. A. Hoare, Esq., Kelsey Manor, Beckenham, and Mr. Gilmour, gardener to the Right Hon. G. J. Goschen, M.P., Seacox Heath, Hawkhurst, in the order named. Cox's Orange Pippin was staged by sixteen exhibitors, Messrs. Bunyard & Co. leading with fine golden-coloured fruits, followed by Mr. J. Burnett, Deepdene Gardens, Dorking, and Mr. A. J. Thomas, Sittingbourne. Of Ribston Pippin there were fourteen dishes, all containing fruits of good size and colour. Mr. H. Folkes, gardener to F. F. Halsey, Esq., M.P., Gaddesden Place, Hemel Hempstead; Mr. A. Smith, gardener to W. H. Sewell, Esq., Warren Hill, Loughton; and Mr. C. A. Hoare, were the prizetakers in that order. King of the Pippins was finely represented by fifteen competitors, Messrs. G. Bunyard & Co. leading with extremely beautiful fruits; Mr. W. Bolton was second with examples but very few points behind, and Mr. Thompson was third.

Dumelow's Seedling was represented by eleven dishes, the winning samples from Mr. Richards, Somerley Gardens, Ringwood, Mr. Thompson, and Mr. W. Dance, gardener to Colonel Lowe, Gosfield House, Halstead, Essex, being large and even. Messrs. Ross, Richards, and Ford had the best of six dishes of Mère de Ménage, the first being the best coloured, and the second the largest. Messrs. Hudson, Bunyard, and Goldsmith were the winners with Golden Noble, the Gunnersbury Apples being of a very rich golden colour. With Cackle's Pippin, Messrs. Rutland, Ross, and Gilmour were the successful exhibitors amongst seven, but most of the samples were small and green. Court Pendu Plat was well shown by Mr. Rutland, Mr. Ford, and Mr. Sich, gardener to J. Abernethy, Esq., Margate, all being finely coloured, though like the six other exhibits in the class they were rather small. Messrs. Bunyard & Co. had the finest Warner's King of the thirteen dishes entered; Mr. J. Fincham, Nacton House, Ipswich, and Mr. Thompson following. Alfriston was shown by eight, but Gloria Mundi by only three competitors, the prizetakers being respectively Messrs. Neighbour, Powell, and Ford, Rutland Divers, and Bailey, of Shardeloes. Peasgood's Nonesuch was grandly shown by all the nine growers who entered. Mr. F. Miller was first with fruits fine in size, shape, and colour; W. Roupell, Esq., Roupell Park, was second, and Mr. Thomas third, with similar examples but few points behind. Lane's Prince Albert was capitally shown by Mr. C. Ross, Messrs. G. Bunyard & Co., and Messrs. E. & J. Lane, who were awarded the prizes in that order amongst seven competitors. A class was provided for Bramley's Seedling, but there were no entries.

PEARS.

The Pears were not quite so satisfactory as the Apples; there was a larger proportion of undersized fruits, and the majority were deficient in colour, the green ones predominating. The display was consequently less beautiful, and the entries were not so numerous, although there was good competition in many of the classes. There were 584 dishes in competition and about 260 not in the classes, the total of 844 being little more than half the total of Apples. The greatest number of entries in one class was twenty, in that for six dessert varieties, but, taking six of the leading single varieties, we find the following were the numbers shown:—Beurré Diel, eighteen; Louise Bonne of Jersey, seventeen; Marie Louise, thirteen; Beurré Superfin, twelve; Glou Morgeau, twelve; and Beurré Rance, eleven.

In this section of the schedule, as for the Apples, there were two classes for large collections, one for nurserymen and the other for amateurs, but the number was confined to fifty varieties. Three entered in the trade class, Mr. A. J. Thomas, Orchard Lane Gardens, Sittingbourne, being adjudged the first prize for a meritorious collection, comprising beautiful examples of the following varieties:—Pitaston Duchess, Beurré Clairgeau Urbaniste, Louise Bonne of Jersey, Catillac, Fertility, Uvedale's St. Germain, King Edward, Duchess d'Angoulême, Beurré Diel, Napoleon, Doyenné Boussoch, Marie Louise d'Uccle, Maréchal de Cour, Beurré Hardy, and Vicar of Winkfield. Messrs. T. Rivers & Son, Sawbridgeworth, who followed, also had fine specimens of most of the varieties already named, together with Rivers' Princess, Rivers' Marguerite, Seedling Bergamot, Pitaston Duchess, and Zoe. Messrs. G. Bunyard & Co. were third, all their fruits being tastefully set upon variously coloured leaves in dishes.

In the amateurs' class Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, was the most successful exhibitor, securing premier honours with handsome fruits of the best varieties set up in the same tasteful manner as the last mentioned. The most noteworthy amongst the varieties shown were Beurré Bosc, Fondante d'Automne, Napoleon, Gansel's Bergamot, Beurré Superfin, Pitmaston Duchess, Marie Louise d'Uccle, Doyenné Boussoch, British Queen, Catillac, Beurré Diel, White Doyenné, Van Mons Léon Leclerc, Grosse Calbasse, Easter Beurré, Louise Bonne of Jersey, and Winter Nelis. Mr. C. A. Houre was awarded the second prize for a collection of rather smaller fruits, but certainly good specimens of Williams. Bon Chrétien, Pitmaston Duchess, Beurré Superfin, Doyenné du Comice, Beurré Hardy, and Duchesse d'Angoulême. Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, was third with rather smaller examples of similar varieties.

A class was provided for twelve dessert varieties, in which there were seven entries, Mr. W. Allan, Gunton Park Gardens, Norwich, taking the lead with the following in praiseworthy condition: Beurré Clairgeau, Glou Morceau, Marie Louise, Beurré Diel, Doyenné du Comice, Marie Louise d'Uccle, Maréchal du Cour, Pitmaston Duchess, Winter Nelis, Louise Bonne of Jersey, Fondante d'Automne, and Beurré Hardy. The second place was accorded to Mr. Thomas, who had some especially fine samples of Pitmaston Duchess; and Mr. A. Waterman was third with well-ripened fruits of the leading varieties.

The class for six dessert Pears brought the largest number of competitors of any in the exhibition, twenty dishes being entered. Mr. Allan won the chief position with a beautiful half-dozen, the varieties being Doyenné du Comice, Pitmaston Duchess, Jersey Gratioli, Maréchal du Cour, Marie Louise d'Uccle, and Fondante d'Automne. Mr. A. Smith had King Edward, Brockworth Park, and Van Mons Léon Leclerc very fine in his second prize collection, Mr. Goldsmith being third. Of the ten entries with three dishes of stewing Pears, Mr. Rutland securing the first place with King Edward, Grosse Calbasse, and Uvedale's St. Germain. Mr. Johnston, Bayham Abbey Gardens, and Mr. M. F. Hatchett, Grove Park, Lee, were second and third respectively.

In the single variety classes the competition was generally good as in the corresponding Apple classes, but particular varieties were much better represented than others, as will be seen from the half-dozen previously named. Those specially provided for were as follows, the number of entries being given after each. Doyenné du Comice, six; Beurré Superfin, twelve; Maréchal du Cour, four; Marie Louise, thirteen, Glou Morceau, twelve; Beurré Rance, eleven; Beurré Diel, eighteen; Pitmaston Duchess, eight; Winter Nelis, 8; Beurré Bachelier, three; Passe Colmar, Urhaniste, and Beurré Benoist, one each; Fondante d'Automne, five; and Louise Bonne of Jersey, seventeen. The winners of the first prizes were Messrs. G. Bunyard & Co., Allan, R. Smith, C. Ross, A. J. Thomas, J. Rutland, Sich, and Johnston.

MISCELLANEOUS.

The non-competing collections both of Apples and Pears were very extensive, and comprised in each case representatives of all the principal varieties in cultivation, but differed slightly in size and appearance according to the district in which they had been grown. Messrs. J. Veitch & Sons, Chelsea, had a grand exhibit, for which a silver-gilt Banksian medal was awarded. There were 160 dishes of Apples and about the same number of Pears, all being remarkably fine, but especially the Apples. A silver Banksian medal was awarded to Messrs. W. Paul & Son, Waltham Cross, for 160 dishes of fine Apples and 100 dishes of Pears. Messrs. J. Cheal & Son, Crawley, were accorded a similar honour for 130 dishes of Apples and forty of Pears, the former being superbly coloured. Messrs. C. Lee & Son, Hammersmith, who had ninety dishes of Apples, all very fine fruits, were also awarded a medal of the same kind, a bronze medal being adjudged to Mr. S. Ford for fifty dishes of Apples and Pears. Mr. H. J. Thomas, gardener to J. Butler, Esq., Sittingbourne, showed handsome Pears, Louise Bonne of Jersey, Beurré Clairgeau, and Pitmaston Duchess being especially good. Mr. S. Jacobs, Covent Garden Market, was awarded a bronze Banksian medal for a huge Pumpkin weighing 213 lbs. W. Roupell, Esq., Roupell Park, also sent fifteen dishes of Apples and Pears, distinct varieties.

VEGETABLES.

Messrs. Sutton & Sons, Reading, offered five prizes for collections of vegetables, the varieties not stipulated, which brought an excellent display of well-grown kitchen garden produce, nine capital collections being staged, and so close in merit that it was not easy to select the winners. Mr. S. Haies, gardener to the Earl of Radnor, Coleshill House, Highworth, secured the leading honours for fresh, clean, handsome examples of Intermediate Carrots, Autumn Giant Cauliflowers, Canadian Wonder Beans, Schoolmaster Potatoes, Reading Perfection Tomatoes, Major Clarke's Celery, Rousham Park Hero Onions, and Sutton's Exhibition Brussels Sprouts. The second position was gained by Mr. W. Meads, gardener to the Right Hon. Viscount Barrington, Beckett Park, Shrivensham, for a collection very nearly equal to the first. Mr. W. Pope, Highclere Castle Gardens, Newbury, was third; Mr. W. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Esher, fourth; and Mr. G. H. Richards, Somerley Park Gardens, Ringwood, Hants, fifth.

COMMITTEES.

Both before the Fruit and Floral Committees there were sufficient exhibits to render the meeting interesting to add materially to the extent of the display, four rows of tables in the conservatory being fully occupied with Apples, Pears, miscellaneous fruits, vegetables, plants, and flowers.

FRUIT COMMITTEE.—Present Harry J. Veitch, Esq., in the chair, and Messrs. John Lee, J. Woodbridge, G. T. Miles, T. Francis Rivers, G. Bunyard, John E. Lane, J. Ellam, John Burnett, Charles Ross, Sidney Ford, F. Rutland, Wm. Paul, Arthur W. Sutton, T. B. Haywood, and G. Paul. Mr. C. Herrin, Chalfont Park Gardens, Gerrard's Cross, sent a bunch of his seedling Grape Chalfont Black, which was obtained from Madresfield Court crossed with Auerkainy Seedling. It has a similar flavour to the fruit named, but is said to surpass it in its quick colouring and freedom from cracking. The berries were of medium size, and bearing a dense black bloom. Samples of Late Prolific Raspberries were also shown bearing a number of firm red fruits, and some large Cob Nuts, for which a letter and vote of thanks were accorded. Similar recognition was adjudged to Mr. G. Thompson, gardener to W. E. Wells, Isleworth, for large fruits of

Russian Transparent Apple and Souvenir du Congrès Pear. Mr. T. Laxton Bedford, sent dishes of the red Plum-like Dartmouth Crab (vote of thanks), the open air Tomato, which was referred to Chiswick for trial, and September Beauty, which was certificated. Mr. A. C. Roffey, St. Andrew's Villa, Church Road, Croydon, sent seed fruits of his Improved Telegraph Cucumber. Mr. W. Howe, The Gardens, Park Hill, Streatham, was awarded a cultural commendation for three bunches of Alicante Grape weighing 18½ lbs., and said to have been taken from a Vine bearing seventy bunches averaging 4 lbs. each. They were well coloured, the berries being of medium size. A cultural commendation was also awarded to Mr. A. Pettigrew, Cardiff Castle Gardens, for an exceedingly handsome fruit of Charlotte Rothschild Pine Apple, large, beautifully proportioned, and finely ripened. Messrs. J. Veitch & Sons, Chelsea, showed their Apple Bismarck, which was recently certificated at the Crystal Palace. The Committee thought highly of it, but require to see six fruits from a tree out of doors. Mr. R. Gilbert, Burghley Gardens, sent a green-flesh Melon of which the Committee think highly, but wish to see it again under more favourable circumstances; the flesh deep, and of a dark green colour. Burghley Champion Tomatoes were also shown very fine, the fruits large, even, and of a bright scarlet colour. Mr. W. Divers, Wierton Palace Gardens, showed several dishes of Apples and Pears. Mr. S. Ford, Leonardslee Gardens, showed Reine Claude de Bavay Plums in good condition; Messrs. T. Rivers and Son, Sawbridgeworth, had handsome fruits of Lady Palmerston, Salway, and Golden Eagle Peaches, and of Grand Duke Plums. First-class certificates were awarded to the following:—

Chou de Gilbert (Mr. Gilbert, Burghley Gardens).—This is described as a cross between Chou de Burghley and Brussels Sprouts, and has a large conical head like the former, with numerous large sprouts at the base, the stems shown being about 2 feet high. One member of the Committee speaks very highly of its flavour and good qualities as a vegetable.

Apple September Beauty (Laxton).—This was certificated at the recent Crystal Palace Show, and was described in that report.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair, and Messrs. J. Douglas, J. Laing, J. James, W. Beahy, W. Bennett, H. Herbst, W. Wilks, John Fraser, G. Duffield, H. Ballantine, J. Dominy, H. Williams, H. M. Pollett, James O'Brien, E. Hill, H. Turner, James Smith, J. Child, James Walker, W. B. Kellock, and Thos. Baines.

A grand group of Gladioli was staged by Mr. Alexander Campbell, Gonrock, N.B., comprising 170 spikes of the handsome varieties we have frequently commended. Very rarely are such fine examples of these flowers seen so late in the season, and the silver-gilt medal awarded was thoroughly deserved. Mr. T. S. Ware, Tottenham, had a varied and bright collection of hardy flowers, in which the early Chrysanthemums predominated, together with several pots of *Colechicum speciosum rubrum*, autumnale flore-pleno, and album flore-pleno, all beautiful bulbs for autumn flowering. A bronze medal was awarded. Mr. W. Bull, Chelsea, showed several new and rare plants; *Alocasia reginae*, with heart-shaped metallic-like leaves, being notable, also *Lælia autumnalis atropurpurea*, with extremely rich crimson-coloured flowers. Mr. Cummins, gardener to A. H. Smee, Esq., Wallington, showed a plant of *Lycaste Smeeana* with white sepals and petals and a small bright rosy lip; also *Cattleya speciosissima Ernesti*, which has blush sepals and petals, a white throat, and a crimson-tipped lip. Dr. Duke, The Glen, Lewisham, was awarded a cultural commendation for a well-grown plant of *Barkeria Lindleyana Centeræ*, which has been previously certificated. Mr. Stevens of Putney sent flowers of a neat Pompon Chrysanthemum named Early White Perfection.

Messrs. J. Veitch & Sons, Chelsea, contributed a group of greenhouse Rhododendrons, comprising a number of their superb hybrids, and some small plants about 8 inches high were bearing trusses of flowers. A cultural commendation was awarded for a magnificent plant of *Callicarpa purpurea* from the same firm, which was about 4 feet high, with long drooping branches, bearing large clusters of bright purple berries in the axils of the leaves. The peculiar but attractive *Amasonia punicea* was also shown in fine condition, its spikes of pale yellow flowers and bright red bracts being very effective. A cultural commendation was awarded to Mr. Hill, gardener to Lord Rothschild, Tring Park, for *Vanda Hookeriana*, with three strong growths and a spike of its lovely rich crimson-spotted flowers. A similar award was granted to F. A. Philbrick, Esq., Q.C., Bickley, for a plant of *Oncidium tigrinum*, with several large paricles of flowers. A vote of thanks was accorded to Mr. Maurice Young for plants of *Hedera Helix minima*, a variety with extremely small leaves produced closely on upright stems. Messrs. H. Cannell & Sons, Swanley, had a collection of fine Tuberous Begonia blooms, also Zonal Pelargoniums and the early yellow Chrysanthemum Fibertia, for which a vote of thanks was accorded. Mr. Forbes, Dover House Gardens, Roehampton, had a stand of new Japanese Chrysanthemums, one of which was certificated; and Mr. T. Sadler, gardener to C. Lambert, Esq., Oakhill Place, Leigham Court Road, Streatham, showed a stand of twelve magnificent blooms of *Elaine Chrysanthemum* with others. A silver Banksian medal was awarded to Mr. H. B. May, Edmonton, for handsome groups of Ferns and fine-foliage plants, most tastefully arranged.

First-class certificates were awarded for the following:—

Begonia John Heal (J. Veitch & Sons).—A graceful variety obtained by crossing *Begonia socotrana* with a seedling tuberous variety. It resembles the former in habit, producing light elegant flowers of a rich rose colour. It will probably form the commencement of a new race of winter-flowering Begonias.

Rhododendron Apollo (J. Veitch & Sons).—A grand variety with brilliant scarlet flowers in large trusses containing from ten to fourteen blooms.

Rhododendron Minerva (J. Veitch & Sons).—The best of the section, the colour a soft yellow with red stamens, fourteen or fifteen flowers being borne in a dense globular noble truss.

Eucharis Mastersi (W. Bull).—A beautiful addition to the genus, the flowers pure white, smaller than *E. grandiflora*, but without the cup or crown, which in that form is rather a disfigurement for bouquets or other floral decorations.

Pelargonium Alice Crousse (W. Beahy).—A double Ivy-leaf variety with large full rosy crimson flowers, a peculiarly soft yet rich tint.

Begonia Earl of Bessborough (H. Cannell & Sons).—A tuberous variety of dwarf compact habit, with large round bronze-yellow flowers, quite distinct in colour and free-flowering.

Chrysanthemum L'Isle des Plaisirs (Forbes).—A Japanese variety with flat or fluted florets, bright bronze red on the upper surface and golden on the lower. Of good substance and form.

NOTED TREES.

THE CHESTNUT.

THE Chestnut tree (*Castanea vesca*) is generally understood to be a native of Asia Minor, but it is abundant, at all events, as a naturalised tree in the mountainous parts of the south of Europe. The famous Castagno di Cento Cavalli, or Chestnut of the Hundred Horses, upon Mount Etna is probably the largest tree in Europe. It is so called, according to tradition, because Jeanne of Aragon and a hundred cavaliers of her suite took refuge under its branches during a heavy shower, and were completely sheltered from the rain. Brydone, who visited it in the year 1770, has given a particular description of it. He states it to have been 204 feet in circumference, but later observers reduce these dimensions to 190 or even 180 feet. It has the appearance of five distinct trees; but whether there were really as many trunks originally, or whether, as in the case of the Fortingall Yew, these trunks be merely portions of one great one, it is difficult to judge. Most travellers, however, who have examined it, incline to the opinion that the trunk is actually formed by the union of five stems all springing from the same root. A hut has been erected in the hollow space in its centre, with an oven, in which the inhabitants dry the Chestnuts and other fruits which they wish to preserve for winter, using at times for fuel pieces cut with a hatchet from the interior of the tree. The Chestnut throws up shoots very readily from the root, and Philippi says it is a general custom in Sicily to cut them down after they have attained a considerable size, when the new stems which are thrown out from the base shortly become trees again. This certainly furnishes a very weighty reason for supposing such to be the structure of the Castagno di Cento Cavalli; but there are other colossal Chestnuts also upon Mount Etna with undoubtedly single trunks. One of these, known by the name of the "Chestnut of St. Agatha," is 70 feet in circumference; another is the "Della Nave," which is 64 feet; and the third, called "Della Navella," is 57 feet. Some general idea of their age may perhaps be formed by a comparison with other individuals whose history is better known, such as that at Sancerre, described by Bosc, which, although only 33 feet in girth at 6 feet from the ground, has been called the "Great Chestnut of Sancerre" for 600 years. Though none of the English Chestnuts rival the Sicilian ones, yet there are some enormous ones in this country. That at Hitcham Priory, in Hertfordshire, had in 1789 a circumference of more than 14 yards, or 42 feet, at 5 feet from the ground; and though the internal part was decayed and hollowed by time, the external part and leaves were vigorous. Grose found four Chestnuts in the garden at Great Crawford Park, Dorset, 37 feet in circumference, and though shattered and decayed, it still bore good crops of fruit. The great Chestnut at Tortworth in Gloucestershire, and which is a signal boundary to the Manor of Tamworth, has, however, had dimensions as well as age assigned it belonging to few other English trees. In 1720 it measured 51 feet in diameter at 6 feet from the ground. Lyons, however, by later measurement, in 1791, made it out to be only 45 feet 3 inches. It bore fruit abundantly in 1788. In the reign of Stephen, who ascended the throne in 1135, it was already remarkable for its size. But even this tree, which has probably long since celebrated its thousandth anniversary, does not equal the smallest of the three Sicilian Chestnuts.

ORIENTAL PLANE.

The Oriental Plane (*Platanus orientalis*) is one of the largest trees of temperate climes. Pliny speaks of one in Lycia whose trunk, hollowed by age, presented a cavity 81 feet in circumference, in which the Consul Licinius Mutianus slept with eighteen persons of his suite; and Olivier, Dr. Walsh, and other modern travellers describe one in the valley of Bujukderé, three leagues from Constantinople, which is 90 feet high, and with a stem 150 feet in circumference. The trunk is hollow within to the level of the soil; the cavity is 80 feet in circumference, and occupies a space of 500 square feet. Vautier mentions one in Tiresia, near Pontus, which was 20 feet in diameter. There are no certain means of determining the age of these trees; but Hunter mentions, in Evelyn's "Sylva," that an Oriental Plane, planted in Norfolk in 1744, was at the age of thirty-one years 7 feet 9 inches in circumference at 1½ foot above the ground, which yields an average annual increase of 10 lines; and this calculation applied to the tree at Bujukderé would make it 150 years old, although if we consider that young trees increase much more rapidly than old ones, we might with safety assume it at between two and three times that age, or at least 400 years old. This is on the supposition that the trunk consists of a single stem, but the recent observations of Mr. Webb leave little doubt but this monster trunk is formed by the junction of several original trees planted in close proximity. Indeed, all along the shores of the Bosphorus, there are many groups of younger Planes, which for their shade have been designedly planted in a small circle, and their trunks will in time become similarly incorporated. Pliny's Lycian Plane may have also had such an origin.

THE ELM.

The Elm (*Ulmus campestris*) attains a large size, and lives to a great age. Mention is made of one planted by Henry IV. of France, which was standing at the Luxembourg at the commencement of the French Revolution. One at the upper end of Clnrch Lane, Chelsea, said to have been

planted by Queen Elizabeth, was felled in 1745. It was 13 feet in circumference at the bottom, and 110 feet high. Supposing it were planted about 1570, its age would be 175 years, and its annual average increase in diameter about 3½ lines. Piffe's Elm, near the Biddington Oak, in the vale of Gloucester, was in 1783 about 80 feet high, and the smallest girth of the principal trunk was 16 feet. From the planting of Sir Francis Bacon's Elms in Gray's Inn Walks in 1600, and their decay about 1720, one would be disposed to assign the healthy period of the Elm in this country to be about 120 years. But De Candolle mentions one at Morges which fell down in 1827, probably undermined by the waters of the neighbouring Lake of Geneva. It was perfectly healthy, and had been growing in a favourable situation. A section of the trunk above the root showed it sage to be 335 years; at the same place the diameter was 16 feet 4½ inches English, and immediately below the branches, at 12 feet from the ground, it was 29½ in circumference; of five immense branches one was 15 feet 9 inches English in girth.

Of American Elms (a different species, however, from any of the European ones) the most noted is that upon Boston Common. Its girth at 5 feet from the ground (in 1844) was 16 feet 1 inch; at the height of 3 feet it measures 17 feet 11 inches, and near the earth 23 feet 6 inches. It is said to have been planted in 1670 by Capt. Daniel Hendman, then a schoolmaster in Boston, and who afterwards joined the artillery. It is therefore (1846) about 175 years old. In an old map of Boston, published in 1720, the Elm is delineated as a large tree. In 1800 there was a great hollow in it, large enough for a boy to hide himself in; but the cavity was then cleared of its rotten wood, and filled with a composition of lime, rubbish from old buildings, and clay. There is now no appearance of the hollow, and the tree is apparently as flourishing as ever. The Aspinwall Elm in Brooklyn is also of considerable size. It was planted in 1656; and in 1837, when 181 years old, measured 16 feet 8 inches at 5 feet from the ground, and 26 feet 5 inches close to the surface. These give the annual increase of growth of the American Elm very accurately at 1½ lines in diameter.—(*Forestry*.)



KITCHEN GARDEN.

TRENCHING.—We do not like to see an empty kitchen garden at any time of the year, but in late autumn and during the winter vacancies do occur, and from now onwards for the next four or five months ground requiring trenching must have attention. Our system is to trench a piece or two every winter, and we have never more to do than can be accomplished comfortably. Shallow soils are not the best, and for the majority of crops, and in most districts, the soil cannot be too deeply trenched. From 2 feet to 2½ feet at least is not too deep for the production of heavy high-class crops. Poor subsoils should never be turned on to the surface in any great quantities in one year. The first crop will not be very satisfactory, and when there is a great extent of bad surface supplies may be deficient. In dealing with bad subsoils we generally keep them in the bottom, and simply fork a quantity of rough rubbish and manure into the bottom of each trench to improve it there, and as this goes on it may be turned on to the surface in a few years afterwards. Three years ago we dealt with a stiff piece of clay land in this manner, and we are now trenching it again, with the result that the cold wet stiff bottom is found to be excellent soil for any vegetable crop. Where manure and refuse is scarce we have trenched ashes into wet soil with good results. We do not begin trenching a quarter to-day and finish it off to-morrow, but it is a "standing job" during the winter, depending upon what else there is for the men to do and the state of the weather.

DIGGING.—We dig every inch of our kitchen garden annually, and although trenching may not be necessary, digging must be done. Short spades are of no use for this work. They should not be put in at an angle, but straight down, and the soil should be turned clean over. At this time and on during the winter it cannot be left too rough, as the frost acts as a pulveriser.

ROOTS.—Carrots and Beetroots which have attained a good size will not become much larger, and they will now be safer under cover. The Carrots may be lifted with the aid of a fork if they cannot be drawn up freely, and the Beet may have to be lifted in this way too, but the utmost care is necessary that the skin should not be broken. The tops may be cut close in to the crowns in the case of the Carrots, but the leaf stems of the Beet should be left a few inches in length to prevent bleeding. When the roots are plentiful it may not be necessary to reserve the worst of them, and small and deformed ones can be used for the pigs, but where they are scarce it will be well to save all, as it is surprising what an obliging cook can do with inferior roots. As in the case of all other roots, these should only be lifted on dry days, and they may be stored as soon as they have become dry. A shed or cellar is a good place for them. Put them down in layers on the top of each other with a quantity of sand, ashes, sawdust, or ordinary garden soil between each. We prefer the latter, as it is always convenient and answers the purpose well. Do not lift autumn-sown Carrots; they will continue growing until Christmas or later and may be drawn up as required. Onions which were taken

under cover a little while ago should be cleaned and stored in their winter quarters. When being dried place them in a single layer, but when stored they may be put on each other until a large heap has been formed.

Salsafy and Parsnips may be left in the ground and lifted as required. White Turnips are the most tender, and those which are of a good size may be lifted and stored. They keep longer in this way than if left in the ground. Swedish Turnips and yellow varieties are much hardier, and need not be lifted until the weather becomes severe.

TOMATOES.—Gather all the green fruit of a naseable size before it is touched with frost, and hang it up in a dry glass house or room to ripen. Keep recently rooted cuttings in a cool house near the glass, and do not attempt to pot them this autumn. Dwarf compact plants are very desirable, and can only be grown in a cool house near the light.

CABBAGE.—Keep on all old plants which are producing a quantity of sprouts. These stand the winter well, and after they have had a little frost become as tender as the most delicate spring Cabbage. Plants which have been out in their bearing quarters for a few weeks may have a little soil drawn to their stems to keep them firm. Plant out more of the largest plants from the seed beds, and see that the slugs do not destroy them.

PARSLEY.—Provision should exist for a daily supply of this. Where it has grown very luxuriantly, and has now many large leaves which are beginning to wither, take these off and only allow the fresh green ones to remain. We never lift any Parsley to put in frames for winter, but when necessary we put hoops over the beds and throw mats over these. It is not very easily injured, and does better without any pampering. Kidney Bean and other seeds should be collected every other day at this season, as the damp soon injures the pods.

PLANT HOUSES.

Cyclamens.—If these are wanted in flower early, and the plants are now in a backward condition, the strongest and most forward should be selected and placed upon a shelf near to the glass. A close atmosphere must be avoided, or the flower stems as well as the foliage will draw up weakly. Arrange them in some light structure where the temperature at night can be kept from 55° to 60°, with a rise of from 5° to 10° from sun heat by day. Ventilate whenever the weather is favourable, and if very mild the ventilators may be open a little all night. If these conditions are carefully carried out the plants will soon commence throwing up their flower stems. If the plants are in small pots, which is generally the case when required for decoration, weak stimulants may be given every time water is required. Liquid made from cow manure and soot water is invaluable for these plants. All later batches may occupy cold frames for some time yet, or a light airy place in the greenhouse or any structure that can be freely ventilated and kept cool.

Double Primulas.—These must not remain in cold frames any longer, especially in low damp localities. They require a little more heat during the winter months than the single forms, and are best on a shelf close to the glass, where the atmosphere can be kept moderately dry and the night temperature 50° to 55°. With careful watering in such a position they will yield abundance of flowers. Weak stimulants are required after the plants have been flowering for some time, and we have found nothing better than clear soot water and an occasional application of artificial manure to the surface.

Single Primulas.—In placing these from the frames in which they have been grown to shelves in cool houses the plants should be sorted. This saves considerable trouble afterwards in the removal of the flowers from those that are not wanted for some time, and in drafting the strongest plants to the house in which they are brought into bloom. The earliest plants will soon push up their flowers in a light airy house, where a little heat is turned on at night and during dull damp days. The plants will be found invaluable for associating with Cyclamens, Roman Hyacinths, Zonal Pelargoniums, and other flowering plants next month. Plants in 3-inch pots are very serviceable, and some of the smallest are retained for flowering in that size. Plants for flowering after the middle of April should now be placed into 3 or 4-inch pots.

Calceolarias.—Frame room now being more abundant, these can be given a lighter and better position than they have been occupying up to the present time. The largest plants can be transferred at once into 5-inch pots, while the smaller ones can be potted if they need it. Those still growing in pans may be placed singly into small pots. At this season of the year small shifts only should be given, and the plants will be found to do much better than if large shifts are given to save the trouble of potting. These plants do well in a mixture of rich loam, one-third leaf soil, one-seventh of cow manure, and a liberal dash of coarse sand.

Cinerarias.—The earliest plants ought to be well advanced, and if placed from the frames into a light house they will come into flower early and prove most acceptable. They must be kept perfectly free from insects by slight fumigations with tobacco occasionally. Clear soot water should be given them every time they need water at their roots. Later plants that are in their largest pots can now be given more room in order that they can develop a good leaf growth without becoming crowded. The successional plants may be placed without delay into 5 and 6-inch pots, while those for late flowering that are still in pans should be placed at once into small pots. The smallest of these plants may be returned to the pans and potted singly in the space of a few weeks when they are ready. These will do very well for some time in frames.

THE FLOWER GARDEN AND PLEASURE GROUND.

Damage by Frosts.—The early and rather severe frosts experienced early in the week commencing September 27th was rather unexpected, and will have caused much damage to numerous plants that had not been protected. *Echeveria metallica*, *E. metallica glauca*, *Pachyphiton bracteosum*, *Sempervivum tabulaeforme*, and a few other tender plants are very badly damaged, and in all probability many will have lost their entire stock. In some cases, if they are potted at once, have all decaying leaves removed and be placed in a rather dry heat, the stems of the plants may push out a few shoots suitable for making into cuttings in the spring. Any other damaged plants, such as *Heliotropes*, *Iresines*, *Tropeolums*, *Ageratum*, and *Alternantheras* that it may be found necessary to take up, should have the frosted portions cut away, be given rather small pots, and placed in a rather dry heat, such as the shelves of a forcing house, and this may save a good many of them. If stood in a cold damp pit or frame the majority of them will rapidly damp off. In some gardens only a few of the beds are badly disfigured, and these, especially where the garden is in a prominent position, ought to have been cleared off and temporarily filled with either neat branches of variegated Hollies, Ivies, Box, and other hardy trees or hardy plants from the spare borders. For instance, quite a showy bed could be formed with Golden Pyrethrum next the edge, inside of this a band of dark Beetroot from the kitchen garden, and a centre of strong plants of *Cineraria maritima*, *Centaureas*, or pieces of variegated Holly. All Tuberous Begonias, where the position of the garden is low, and therefore liable to be more damaged by early frosts, are very badly cut up, and the sudden check may injuriously affect the bulbs' keeping properties. If lifted at once the soil should not be very closely cleared from the roots and as much of the uninjured tops be preserved as possible. They should be closely packed in shallow boxes and rather moist soil, and be stood in a frame or cool house and allowed to ripen gradually. Late Gladioli are also much injured, and these will not therefore perfect such good corms as usual. It is not advisable to disturb them yet, but those that are matured may be lifted, partially dried, and packed away in boxes of sand. Even the Chrysanthemums that were not yet showing colour are much injured, and in some cases ruined, but those that are yet in a promising state may well be lifted with a good ball of earth and roots, and be planted against a wall or in some other position where they may be protected with mats when necessary. The early-flowering Chrysanthemums are also much injured, and on the whole the beds and borders in many places are in a worse plight than they were last year at the end of October.

Roses from Cuttings.—During October and early in November is the best time for inserting Rose cuttings made from strong well-ripened growths. Those inserted last season struck remarkably well, owing principally to the well-ripened state of the wood and the immunity from severe frosts during the winter. It is the simplest method of increasing the stock of dwarf Roses on their own roots, and which succeed very frequently so much better than do those on the Manetti and Briar stocks. Those Roses with few or no thorns, such as John Hopper and Countess of Oxford, are the most certain to strike, but we have also been successful with nearly every sort we have tried. The long firm growths should be selected, rejecting the unripe portion of these, and cutting the remainder into lengths of from 10 to 12 inches. Each should be cleanly cut to a joint and have the lower half of the buds trimmed off. They should not be allowed to lay about several hours, this resulting in the loss of much of the moisture they contain and ending fatally, but they should be inserted in the ground as fast as they are made. An open spot should be selected for them, the soil being well worked, and will be all the better for an addition of horse droppings or old Mushroom beds and road grit, this being well forked into the surface, the cuttings to be dibbled in firmly to about half their length, taking care that each touches the bottom of the hole formed for it and is properly fixed with the point of the dibble. As they will form good flowering plants during the following summer it is advisable to give them plenty of room, or say not less than 12 inches each way. As a few of the cuttings usually fail, we prefer to place the roots 18 inches apart and the cuttings 9 inches apart in the rows, and in this manner the blanks are not so conspicuous. The strongest of those struck last winter may be transplanted in November or next spring, and in all probability will soon become strong free-blooming bushes, and which will remain vigorous much longer than those on stocks of any kind.

Planting Anemones.—Now is a good time to plant the fleshy roots of such kinds as *A. apennina*, *A. nemorosa*, *A. coronaria*, and *A. vernalis*, this supposing they are in a plump condition. When, however, they are newly bought in, and have been kept for some time in paper bags, they are almost certain to be somewhat shrivelled, and if committed to the ground in that state many very probably will decay. It will be found a safer plan to start them in boxes of moist sand, planting them out directly they appear to be commencing growth. They are most effective when planted either in patches of about six roots or in beds. The latter should be raised above the surrounding level, as badly drained positions or too much moisture is apt to prove fatal to the most delicate of them. If it can be afforded it is advisable to mix a good quantity of sandy loam with the ordinary garden soil. The drills may be drawn about 6 inches apart and 2 inches deep, and after a little sand has been added the roots may be planted 6 inches apart, and the bed levelled over. If no fresh soil is added to the bed the roots ought to be surrounded with a good sandy compost, and this will encourage a healthy start. Ranunculuses ought not to be planted till February, while the first week in November is usually found quite early enough for planting Hyacinths, Tulips, and various other bulbs.

THE BEE-KEEPER.

MARKETING HONEY.

THE honey harvest being now over, and the season on the whole having been a good one, many bee-keepers have a large stock of honey on their hands, and the question naturally arises, How they are to sell it?

If they wish to realise at once the only plan is to sell to any of the wholesale dealers, taking care, however, to get their money, as if we were eager to appear in a court of law as a defendant in a libel suit we could refer to cases within our own experience where honey has been sold, but the unimportant (!) part of paying has not followed. By all means let sellers beware to whom they sell their honey. Long prices look very well on paper, but for our part we prefer shorter prices—and cash.

Those bee-keepers, however, who wish the larger profits of selling without the middleman must take care to see that their honey is put up in an attractive form to tempt the public to buy. Honey may be divided for commercial purposes into two classes—honey in the comb, and honey out of the comb; that is to say, run or extracted honey. Of late years section honey has taken the place of the supers of glass, wood, or straw which were formerly so common, and the reason is not far to seek.

The sections, holding nearly one or two pounds, which are generally used, are neat and portable, and if packed in the glass card-cases are very attractive, and will save the bee-keeper the trouble of glazing each section, as unless the honey is protected in some way it will be spoiled by flies, wasps, &c. These cases for 1 lb. sections can be purchased from the hive-dealers for about 15s. the gross.

They consist of really two boxes without covers, the unglazed one being slightly smaller than the other. The section is put into the glazed box, and the other box fits over this, and is made all secure by the little projecting flaps of gummed paper. This doubtless is a considerable addition to the cost of a section, but as they can be used over and over again, any cases returned in good condition could be allowed for. We have frequently seen exhibits disqualified because they were not properly protected from robbing bees, and when judging at a show a short time ago we had to order the removal of a very meritorious exhibit of section honey, and which would have won the second if not the first prize.

The best way of cleaning sections from propolis, &c., is to use a sharp knife and scrape the section, as, if we use spirits of wine, ether, &c., there is generally a stain left on the wood. Run or extracted honey is best put up in glass jars or bottles, and must be carefully corked to prevent the honey leaking. Here again, the cost of the bottle bears rather too large a proportion to the value of the honey. What is wanted is an article which could be retailed for about 6d., very much in the same way as we see jam and marmalade sold in tumblers, &c., which, when empty, can be used for other purposes; but at present we have seen no such inexpensive method with regard to honey.

As regards the price of honey, it is difficult to determine. We have seen run honey (not extracted) sold for 2s. per lb., and we have heard of 1 lb. sections being sold for 6d. each, and in the last number of the *Bee Journal* extracted honey of good colour is offered for 6½d. per lb.

Whether the price of honey will rise during the winter will depend on the demand, and bee-keepers must judge for themselves whether they will hold back or sell at these low prices. If they decide to keep their honey on the chance of getting more later on, they must be careful to keep the honey in a warm dry room, and never covered over until it is fully ripened. A good way to prevent fermentation is to cover the vessels containing honey with unsized paper, which has been dipped in a solution containing one part of salicylic acid to ten parts of spirits of wine. If, however, any fermentation

takes place, the honey must be heated and then carefully skimmed; but this is only of use when fermentation has only just begun, as, after a short time, fermented honey is of no use except for making vinegar.—THE SURREYSHIRE BEE-KEEPER.

THE LAST CHANCE.

SEPTEMBER has passed away, and has not failed to give warning that frost of some severity may shortly be experienced. Unless to repair the neglect of the earlier part of last month no manipulation should now be undertaken, but the bees should by perfect quietness and freedom from interference be allowed to settle comfortably down ready to meet the unkind weather they are likely, at no very distant date, to experience. All unions should now be effected, but most thoughtful bee-masters will already have performed this most salutary operation. Unity is strength: a strong hive now will be strong in spring, and will amply repay any extra expense incurred in the purchase of some pounds of bees if there are no honey stocks to afford the necessary contingent. The stronger a stock is in autumn the greater the yield in spring; the better the foundation the firmer the structure. The seed bed must be in good condition to insure a healthy growth. So must the stock from which the swarms of a future year are expected; or, if the swarms are prevented increasing, must be full of bees with a plenteous store, in a warm hive sheltered from the cold north wind, protected from the rain and damp, freed from vermin, and tended at times, when care is required, by the owner, who is acquainted with the different wants and requirements of his busy insect labourers.

There is, it must be admitted, one fear in connection with buying bees, and that is the importation of foul brood. But with discrimination and due care to buy only from men whose honest dealing and acquaintance with the appearance of a foul broody stock is assured, this danger may be reduced to a minimum. Food, too, must be administered if a full supply has not already been given, and it is here that the greatest care is requisite to prevent "robbing." A little syrup spilt will cause a great disturbance, and if measures be not taken at once to stop the thieves, much mischief may be done, although here again by keeping all stocks strong in numbers, an excellent preventive will be afforded and less loss entailed.

This reminds me that early in August I had a bad case of robbing, but taking stringent measures, and losing no time in their application, peace was soon restored, and no further outbreak has occurred. I was feeding a driven stock of great strength with the ordinary round tin feeder, and although covering the feeder well up, the bees, while not venturing inside the hive, managed, as I afterwards discovered, to get a little syrup from the feeder direct, owing to a flaw so small as scarcely to be perceivable. It was on Sunday morning the "row" was at its height, and on the next morning peace was almost wholly restored. The measure I took was harsh. On the top of the hive, enveloping both it and the feeder, I laid a carbolic sheet. This I should hardly have dared to do had I not been at home to see the result, as driven bees not having any particular attachment to a hive containing no brood, and strongly scented with crude carbolic, might possibly I thought leave the hive. They were, in fact, driven from the feeder; but the robbers, they hovered round and round, and endeavoured to resume their work, but in vain, and gradually their efforts became more feeble. At night the sheet was taken away, a filled feeder placed in the stead of the one the cause of the disturbance; the bees taking possession at once, went peacefully on with the work from which they were compelled to desist by the strongly scented carbolic. So far as I am aware, no robbers have since attempted to assail the stock, which, to their great disgust, they found, when expecting a stolen feast, possessed of a vigilant, if inanimate, assailant of incalculable value to the bee-master. My bar-frame hives are packed for winter in a manner advocated by many as an effectual means of preventing dampness, and to my mind rightly so. Ticking, quilts, and then a section crate filled with cork dust on the top, as warm as possible, clean, admitting of easy ventilation, carrying away the damp, there seems to be no more admirable winter covering.

To a careful apiarian the winter season brings no fear, because he knows his bees are well provided with all the necessities they require to withstand the season. But how different is the case; and I once, and only once, experienced it, of the man who has stocks not strong in numbers nor well supplied with food, and if to this be added an insufficient covering, a very climax of misery must be reached. Each day he fears to find his stock dead; and when, in the latter end of January, mild weather enables him to partly repair his previous neglect by

giving a supply of syrup, his troubles are by no means at an end. Insufficient food in winter, coupled with paucity of bees, generally cripple a stock to such an extent that the honey harvest is, if not over, at any rate far advanced before there is the slightest chance of obtaining surplus honey. Such a stock, indeed, drags on its weary way, yielding no profit, affording no pleasure, but it a perpetual eyesore, reminding the neglectful owner of what "it might have been."—FELIX.

QUEENLESS HIVE—BEE SLAUGHTER.

I HAVE had some little doubt as to the state of one of my bee hives lately. The one I speak of is a frame hive. It swarmed three or four times; the bees, however, always returned, and it was apparently very strong both in bees and honey. It made a sort of attempt at the usual time to kill its drones, but in a very mild way, and after a few days that ceased. I therefore examined it. I could not find a queen, there was no brood, not very many workers, a fair quantity of honey, and a large number of fine drones. I suspected there was no queen, but they were very irritable, and did their best to sting me and my assistant, but we were well protected.

On October 1st I procured a driven swarm, and joined them to my frame hive, taking the usual precautions as to feeding both sets of bees and giving a little smoke. The following morning I removed from the entrance a large quantity of dead bees, most of them appearing as if they had been dead for some days. No dead drones were brought out, but dead bees were dragged out all day.

On October 3rd, at 2 P.M., the drones and bees came out in large numbers suddenly, as if about to swarm; the bees ran about on the entrance board, fed one another, and flew out. After a time they gradually returned. On October 5th the weather was bad, but a few bees were still dragged out, though they were settling down. October 9th the bees are again dragging out the drones, both dead and alive, in a slow way, but evidently more seriously than they did three weeks ago, and more bee bread is coming in. Altogether, there is a more business look about the bees. The weather is still cold and stormy. Will your Lanarkshire correspondent kindly explain the cause of all these proceedings? Am I now to hope that I have a healthy queen? I do not like opening the hive if I can help it.—A BEE-KEEPER IN DUMFRIES-SHIRE.

[There is little doubt from the description given that the hive was queenless, but the driven swarm now added and carrying pollen indicates all is right again.]

The returning of swarms arises from various causes. A common one is where many queens are in the swarm; or it may be that the old queen, from some defect, does not leave the hive, but is ultimately killed by some of the young queens being hatched which were being brought forward to supersede the reigning one.

Bees in queenless hives are sometimes liable to sting on the slightest interference. A drop or two of the oil of peppermint is more effective in gaining swarms than smoke, which in large quantities injures both bees and honey.

The most successful way of joining two or more swarms together is by driving both into empty hives, then, after both are fed, knock them together. Where there are combs, one or both of the bees soon empty themselves, and, where no scent has been used, often result in one or part of both being killed, the conquering bees always managing to cause the rivals to disgorge their honey.

The reason no dead drones were dragged out at first was probably the onput bees being killed, and the great rushing out was perhaps because the queen was encased—a ruse by the bees, as if swarming, to induce those encasing the queen to liberate her, or it might be simply a rally after the battle to put all right, when the slaughtering of the drones and pollen-carrying took place. Sometimes most of the bees killed remain on the floor till carried out, which occupies the bees a day or two. Others are simply wounded, leave the hive of their own accord, and are never observed unless watched for.

A queenless hive does not always retain the drones, neither does one with a young and fertile queen kill them at the usual time. I have one of the latter at present, a young and very prolific queen, which is a perfect treat to see carrying pollen, as well as to hear the deep hum of the drones ringing in the air, reminding us of all the joys of summer weather while it is actually winter, snow and hail falling at intervals, with 9° and 10° of frost at night, but with some sunshine through the day.—A LANARKSHIRE BEE-KEEPER.]

DRIVEN AND FED BEES FOR STOCKS.

On Sept. 19th I drove from three straw skeps 9½ lbs. of bees, and united them in a hive 17 by 12 inches. I divided half-pound foundation comb over the bars (eleven). The bees commenced on all the bars at once, and have built comb fully half way down. I have given them 30 lbs. of best crystallised sugar with nearly its own weight of water made into syrup, but for the last two days they are not taking the syrup as freely as they did at first. What can be the cause of this? I intend to give them another 5 lbs. of sugar. Would that be enough to keep them all right until spring? They are not building comb so fast as they did, but they are carrying in great quantities of pollen every dry day. Will bees treated in this way throw off swarms next year?—J. E.

[The bees referred to seem to have done fairly well considering the very cold and boisterous weather prevailing both in September and the present month. The quantity of syrup given is sufficient to tide the bees over till spring, but it would be better could the bees be induced to build down their combs now, as by that means an excess of drone comb would be avoided. The cause of the bees ceasing to feed arises from two causes—1, The extreme cold; 2, Sitting closely and nursing their brood, which the carrying of pollen indicates there is a good deal of it in the hive, and, what seems better, that it is a young queen they have at their head, which, if so, will do well next season in spite of all any old "fogey" may say to the contrary. As milder days are to be expected yet keep feeding them. The best of all feeders for the purpose is the frame-feeder as recently described. Bees both in autumn and spring when sitting closely upon brood do not feed rapidly, and will sometimes die before they will leave their charge to feed, particularly when the syrup is placed away from the cluster. The frame-feeder places the syrup close to the bees, and as it is wood well waxed they feed from it when all other feeders are deserted.]

THE HONEY MARKET.

I NOTED the above article on page 327, and although not a bee-keeper I should like to say that I have seen exposed for sale in the grocers' shop windows in Lynn sections of honey at 8d. each. It was very good, the cells being well filled and the colour grand. For my own consumption I pay 1s. per lb. for run honey.—STEPHEN CASTLE, *West Lynn*.

TRADE CATALOGUES RECEIVED.

Dammann & Co., Naples.—*Catalogue of Flower and Vegetable Seeds.*
Thomas Roberts, 112, Victoria Street, Westminster.—*List of Stoves (Illustrated).*
Bandriller, Angers.—*List of Fruit Trees, Ornamental Trees and Shrubs*
Richard Smith & Co., Worcester.—*Catalogue of Stove and Greenhouse Plants.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Seedling Primula (*J. C.*).—The variety is a pretty one, and worth preserving, but it would not possess any great trade value, as there are others of similar character.

Lord Palmerston Peach (*F. B., Lankhills*).—Although we have seen larger fruits, we have no hesitation in saying that yours "weighing 9 ozs. is a satisfactory size for an amateur," as it is above the average of amateurs' productions in Peach culture.

Large Tomatoes (*E. S.*).—Your Tomatoes, borne by plants raised from cuttings in October of last year, are larger than those sent by "J. W. L.," but not quite equal to them in shape, firmness, and colour, and had the two lots been in competition yours would have had the second place. Your fruit, weighing 1½ lb., is heavier than any we have received this year.

Fasciated Tropæolum (*Miss H.*).—The name of the plant No. 1 is Tropæolum tuberosum, which is quite distinct from *T. speciosum*. No. 2 is, we suspect, an abnormal form of the same, or a seedling variation from it. It is much fasciated and very curious. We know of no method of inducing it to flower other than growing plants in a very light greenhouse. Perhaps if you were to strike cuttings now and keep the young plants steadily growing on a shelf near the glass through the winter they would flower next year. If it is a form of *T. tuberosum*, as we suspect, the distinctive affix of fasciatum would be appropriate.

Camellias (*W. Kruse*).—There are so many superior varieties of Camellias that we suspect it to be quite impossible for anyone to name half a dozen varieties that would be universally admitted as the "best." Some are best for flowering in a comparatively small state in pots, others for attaining large dimensions planted out. The following are good free-flowering varieties:—Alba plena and Mathotiana alba, white; Marchioness of Exeter and Sarah Frost, rose; Madame Lebois and Bealii, crimson; Comtesse Lavinia Maggi, striped; and Giovanni Santorelli, marbled. You can exclude any two of these according to the colours you prefer.

Peaches on Shaded Wall (*J. T. W.*).—If you remove the Peaches it is very improbable that you will succeed in covering the space with fruitful growths of any other trees you may plant. Victoria Plums would be as likely to succeed as any, but there is no certainty about these. Cannot you lower the front trellis, bending it over in the form of an arch to the side of the walk, securing it there about 3½ feet from the ground, or so that the sun would shine over and reach the trees on the back wall? If you cannot do this you might cover the wall with Camellias which grow well in the shade.

and are hardy enough for unheated houses in the south of England; but you omit to state the district in which you reside.

Insect Cocoons (W. M., Hatfield).—The objects you enclosed are cocoons, produced by a species of sawfly which has no popular name, but is termed in science *Trichiosoma lucorum*. As the specific appellation implies, the insect occurs upon a variety of trees and shrubs, but the larvæ or grubs chiefly consume the leaves of the Whitethorn, Blackthorn, and Rose. Occasionally they occur upon fruit trees, but as the females scatter the eggs here and there it is seldom abundant enough in any locality to produce serious injury to any cultivated plants. After attaining maturity, the larvæ form these cocoons, from which the flies emerge during the spring. If opened now, they will be found to contain the larvæ closely rolled up and motionless; they eventually change to pupæ, in which state they pass the remainder of the winter.

Exhibiting Chrysanthemums (E. C.).—There is quite room in the box illustrated on page 301 for the blooms when cupped and placed in the stands. The exhibitor to whom you allude uses cups, as do all others who succeed in winning the best prizes. Some blooms are so perfect that nothing will improve them, but the majority appear to much better advantage in stands when cups are employed.

Water Lily not Thriving (G. G.).—We suspect you have not got the hardy pink Water Lily, some of the coloured species requiring heat. As you purchased the plant we presume it would be named, and if you will send the name your letter shall have further attention; also please state whether you want two other aquatics for the open air or the vinery, in either case stating the size of the tank.

Preserving Walnuts (H. J.).—If you have no cellars at your command we should place the nuts in large earthenware pipkins, or failing these in large flower pots, and bury them in a cool position in the garden. We have kept nuts successfully by this simple method. In some of the pots we have mixed sand with the nuts, others sawdust, and in other pots the nuts have been placed without either sand or sawdust, and there was little or no difference in the results. Walnuts may be kept for a considerable time in an ordinary shed if they are placed in pots with moderately moist sawdust, but not that from Fir trees, which contains turpentine.

Bone Dust for Vine Border (A. B.).—The quantity of bone dust that should be used depends on the condition of the Vines. If they are the reverse of luxuriant a quarter of a pound lightly pointed into each square yard of the border will not do any harm, neither, perhaps, will it do much good if there are not plenty of fibrous roots working not far from the surface of the border. A great deal of manure is wasted on Vine borders that contain little beyond straight fibreless roots a foot or two below the surface, and the chief feeding roots, as is often the case, far beyond the confines of the border.

Manure for Mushroom Beds (T. W. D.).—The manure collected from the London stables for Mushroom-growing is not weighed. It is true the size of carts vary, but, as stated in "Mushrooms for the Million," the manure is "stacked square 2½ feet above the top of a full-sized cart," and this you may take to mean the largest carts in regular use in your district. Manure that is sold by the ton about London is too much decayed for the purpose in question. One of Mr. Barter's loads would perhaps not weigh much, if any, more than three-quarters of a ton, and if he pays 3s. 6d. per load and sells the old beds for 2s. 6d., and you pay 8s. 6d. per ton and sell for 7s. 6d., you appear to be on a level with him as to profits; for if you buy at a higher rate than he does you would naturally sell at a higher rate too; and the value of the crops of Mushrooms grown in the meantime, assuming them to be equal in bulk and quality, would necessarily be the same in both instances.

Grapes (V. A. Brown).—Your questions were answered on page 261, No. 273, the issue of September 17th. Dr. Hogg Grape is not a Muscat of the type of Muscat of Alexandria, which has large oval berries, but is a Frontignan with much smaller and round berries, with a rich Muscat flavour. It will succeed in a house in which Black Hamburgs ripen in August, assigning it a warm position. The same remarks apply to Gros Maroc, but this is a very strong grower, and requires a width of 5 feet of roof space. Alnwick Seedling will ripen in a Hamburgh house in which the Vines are started in March, and a suitable temperature is maintained for their healthy growth. Foster's Seedling is the most reliable white Grape for growing with Black Hamburgs, and with good cultural attention the berries neither shank nor crack.

Potting Violets (X. X. X.).—You had better take up and pot your Violets at once, removing all decayed and discoloured leaves, also worms from the soil that adheres to the roots, yet as much of this should be retained as can be conveniently placed in the pots. Use fresh loam with a sixth part of manure so much decayed and dried that it can be rubbed through a sieve, adding also a little wood ashes and sand to render the mixture porous. Work this well amongst the roots, then press it down firmly, giving a good watering. The plants should be placed in a frame, which may be kept close, and even shaded for a few days, if that is necessary to prevent the leaves flagging, but the less of shade the better if the leaves can be kept fresh. When the plants have recovered from their removal they require much light, and all the air that can be afforded without checking the expansion of the flowers by sharp currents rushing through the sashes.

Clematises (T. T.).—You appear to require some of the free-growing or rambling varieties, on which a correspondent wrote as follows a short time ago:—"All the species and varieties of this genus are admirably adapted for covering walls or any blank spaces, or for covering a verandah, porch, trellis-work, or bower, or, what is more to our purpose here, for scrambling over old ruins, rookery, or rockwork. In such places even the common English species, *C. Vitalba*—Traveller's Joy, as it is frequently called, in some localities more frequently known as Old Man's Beard—is extremely ornamental. *C. Flammula* is a deliciously fragrant old species, of which there are several forms. All, however, are white and sweet-scented, differing only in size and robustness. The leaves are small, pinnate, and dark green, whilst the pure white fragrant flowers are borne on branching panicles in great profusion throughout the summer and autumn months; and *C. montana* is specially valuable on account of its blooms appearing so early in the year. Th

flowers are large and pure white, with pale green stamens, appearing in April and May. The following are mostly hybrids, which have been raised in this country, and flower somewhat in the order named:—Albert Victor, large, deep lavender, barred with brown; Alexandra, petals broad, reddish violet; Azurea grandiflora, violet blue; Cœrulea odorata, small, dark purple, very fragrant; Fortunei, creamy white, double, fragrant, Japan; Gem, rich blue, continuing into late autumn; Lady Lovelace, double rich blue; Lord Londesborough, deep rich mauve, striped maroon; Lady Londesborough, silvery grey, with pink base; Lanuginosa, large azure blue, China; Lanuginosa candida, large, creamy white; Lanuginosa nivea, large, pure white; Lucy Lemoine, large, double, pure white; Magnifica, purplish crimson; Miss Bateman, large, pure white, striped with creamy white; Jackmani, large, rich violet-purple, a profuse bloomer; Prince of Wales, deep vinous red, shaded violet; Rubella, large, deep claret; Rubro-violacea, maroon, shaded violet; Standishi, violet-purple; Star of India, rich plum, red bars; Thomas Moore, large, rich purplish violet, white stamens; Tunbridgensis, fine shape, deep bluish mauve; Velutina purpurea, large, rich purplish black.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (A. M. Turner).—Cornish Giliflower. (H. Hewat Craw).—American Mother. (X. Loughgale).—Loddington. (Alfred Brook).—1, Fearn's Pippin; 2, Brickley Seedling; 3, not known; 4, Ord's. (S. C. Clay).—Suffolk Thorn, gather it now and keep till it is ready. (J. L. H.).—1 and 4, Northern Greening; 2, White Nonpareil; 3, London Pippin. (James Woods).—Apple, Keswick Codlin. Pears, 2, Easter Beurré; 5, Beurre Sterckmans. (W. S.).—1, Calabasse; 2, Beurré Diel; 4, Hacon's Incomparable; 5, Gilgil; 6, Duchesse d'Angoulême. (W. G.).—A, Forelle; B, Beurré Diel. (A Constant Subscriber).—1, Gloria Mundi; 2, Reinette de Canada; 3, Gravenstein; 4, not known; 5, Hambledon Deux Ans. (C. J. Nicholson).—1, Hollandbury; 2, Stoup Leadington; 3, Greenup's Pippin. (South Essex).—1, Golden Reinette; 2, Bess Pool; 3, Braddick's Nonpareil. (R. E. Filkins).—2, Hollandbury; 5, Ribston Pippin; 6, Northern Greening.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (G. H.).—1, Hibiscus syriacus; 2, Mesembryanthemum echinatum; 3, Davallia canariensis; 4, Davallia bullata; 5, Selaginella Martensi.

COVENT GARDEN MARKET.—OCTOBER 14TH.

SUPPLIES and prices continue much the same as last week.

FRUIT.							
		s. d.	s. d.			s. d.	s. d.
Apples	½ sieve	1 0	to 3 6	Peaches	per doz.	2 0	to 8 0
Cobs, Kent ..	per 100 lbs.	24 0	26 0	Pears, kitchen ..	dozen	0 0	0 0
Figs	dozen	0 8	0 9	dessert	dozen	1 0	1 0
Grapes	lb.	0 6	3 0	Pine Apples English ..	lb.	2 0	4 0
Lemons	case	15 0	21 0	Plums	½ sieve	1 3	2 0
Melons	each	1 0	1 6	Strawberries	lb.	0 0	0 0
Oranges	100	8 0	12 0	St. Michael Pines ..	each	3 0	7 6

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes ..	dozen	1 0	to 0 0	Lettuce	dozen	1 0	to 1 0
Asparagus ..	bundle	0 0	0 0	Mushrooms	punnet	0 6	1 0
Beans, Kidney ..	lb.	0 3	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red	dozen	1 0	2 0	Onions	bunch	0 3	0 0
Broccoli	bundle	0 9	1 0	Parsley	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips	dozen	1 0	2 0
Cabbage	dozen	0 0	1 0	Potatoes	cwt.	4 0	5 0
Capsicums	100	1 6	2 0	Kidney	cwt.	4 0	5 0
Carrots	bunch	0 3	0 4	Rhubarb	bundle	0 4	0 0
Cauliflowers ..	dozen	2 0	3 0	Salsafy	bundle	1 0	0 0
Celery	bundle	1 6	2 0	Scorzoner	bundle	1 6	0 0
Coleworts	dcz. bunches	2 0	4 0	Seakale	per basket	0 0	0 0
Cucumbers	each	0 3	0 6	Shallots	lb.	0 3	0 0
Endive	dozen	1 0	2 0	Spinach	bushel	2 0	4 0
Heros	bunch	0 2	0 0	Tomatoes	lb.	0 4	0 0
Leeks	bunch	0 3	0 4	Turnips	bunch	0 4	0 6



WHEAT SOWING.

Now that the time for sowing Wheat has come again, many a farmer has to consider if it is worth while making any reduction in the number of acres of land for the cultivation of a crop which in many, perhaps in the majority of farms, has proved to be so unprofitable again. Free trade has brought us into competition with the Wheat-growers of other countries; we have now to offer our samples for sale in the world's market. Are we to withdraw from the contest beaten? It is undoubtedly a wiser course to bow to the

inevitable than to struggle on hopelessly against it; but before doing so we ought certainly to see for ourselves if failure in this important matter is really inevitable. In doing this let us omit nothing, but weigh well the cost of foul land, inferior seed, long fallows, farmyard manure with the heavy expenditure involved in its manufacture and use, and then let us strive to master fully the advantages of clean land, no long fallows, the application of manure either in the form of pure artificial home-mixed manure, or of green crops ploughed into the soil, of good seed of the best sort, of a reduction both in horse and manual labour upon the farm. How seldom do we meet with a field of White Wheat, and yet there can be no good reason why it should not be grown extensively upon farms south of the Trent. We were recently asked by a tenant farmer for a reduction of rent upon the plea that his crops did not "pay," adding, by way of illustration, that he had only got a yield of 24 bushels an acre of Red Wheat this year, and he had just sold it for 3s. 9d. per bushel. Messrs. Webb, of Wordsley, Stourbridge, send us extracts from a letter published in a newspaper, and written by Mr. Evan Baillie of Filleigh, to the effect "That from a field which has been considered the poorest on Newhouse Farm, in Chudleigh parish, there has this year been grown, thrashed, and winnowed White Wheat at the rate of 47 bushels per acre. The straw was 6 feet high;" and after telling how the land had been drained, ploughed fairly deep, and cleaned from weeds, he adds: "The inferences to be drawn are, I think, these—first, that under certain favourable conditions, such as having the land in good order, the best seed, and a good season, Wheat may still be grown at a profit; and, secondly, that it is, at least, more advantageous to farm well than to farm badly. Whatever goodness there was in the soil the Wheat plants had the whole benefit of it, there being no weeds to rob them or to choke the good seed." Mark the contrast of results, and let us go a little further and see something of the returns per acre under what may fairly be considered ignorant and intelligent methods of culture. In recent quotations from Mark Lane we have the best Kent or Essex White Wheat at 38s. per quarter, or 4s. 9d. per bushel, which, at 47 bushels per acre, give the following remarkable results:—

White Wheat, per acre.	£	s.	d.	Red Wheat, per acre.	£	s.	d.
Grain.....	11	3	3	Grain	4	10	0
Straw	3	0	0	Straw	2	10	0
	£14	3	3		£7	0	0

It may be said with undoubted truth that there are plenty of worse crops of White Wheat and better crops of Red Wheat in this country, and we agree. But there are nothing like facts, and our object in a comparison of results in two extreme cases is obvious enough, and we have been careful to avoid over-statement in either case. One more fact should not be overlooked, and that is, that although closely pressed by foreign produce, home-grown Wheat still commands the highest price at Mark Lane.

The home farmer must always grow enough Wheat for home consumption, and if he be wise he will not make any reduction in the additional quantity he is accustomed to grow. Let him, however, see that every point of culture has due attention, and is done in the best way. Clean well-drained land, good seed of the best sort, and well-stirred fertile soil. If the land has not been enriched sufficiently by the ploughing in of green crops or folding, then give it a half-dressing of artificial manure at the time of sowing and the other half-dressing next February—quarter cwt. nitrate of potash, three-quarter cwt. nitrate of soda, quarter cwt. of superphosphate, quarter cwt. of ground coprolite, and quarter cwt. steamed bone flour. This is the correct quantity per acre for a half-dressing, each sort of manure being had separately, and then mixed under the farmer's own supervision at the farm. When the mixing is done weigh off the quantity required for each field, put it in bags, and if not used at once set the bags apart from others with a label bearing the name of the field for which it is to be used. Drill the seed corn,

follow with the manure mixture sown broadcast, and then pass the harrows over. Pay no attention to chatter of ignorant people about loss of nitrates, or overgrowth of straw from the use of nitrate of soda. Among really earnest thoughtful men such erroneous ideas have long been set aside, for the simple reason that they were proved—mark the term—proved to be wrong. If we are to have a full strong development of straw and grain among our corn the plant must have full sustenance from the time of seed-germination, and, therefore, the soil must be sufficiently stored with fertility. Do not hesitate to sow Wheat or any other corn twice or more in succession upon the same piece of land if you have only taken care to restore to it the elements of fertility withdrawn from it by the last crop. That is a point of good culture always to be remembered; but, then, in order to do it well and in the right way we must know all about the soil, the crop, and the manure we use. Again we say, regard the soil as a medium for the conveyance of food to plants—a medium from which the store of food is to be absorbed, and to which it can be restored just as often as we know it to be necessary.

WORK ON THE HOME FARM.

The Flock.—In about another week the tups will be withdrawn from the breeding flock, and two or three of the best of them will then be sent to the ewe lambs at two off farms. In view of this the lambs have had plenty of dry as well as green food for some months, in order to bring them forward in growth and strength for breeding thus early. We are bound now to make every stroke tell, and although sheep have fallen much in price we must keep on doing our best with the flock, and we have not yet lost faith in lambs as a profitable investment. For some weeks past the sheep have been withdrawn from the grass land and been on the Clover layers, and the rain has induced so free a growth on the meadows that we have an abundance of food on all the good meadows. Some poor land will soon have old sheep put upon it in folds to help the grass for another season. Old sheep, with plenty of nutritious dry food, doing so much good as to render the soil rich in fertility for another year. We have a considerable number of such sheep either withdrawn from the flock or purchased for folding on poor land, and some of them are almost ready for the butcher, our plan being to withdraw them in hatches from the folds as they become fairly plump. Many old ewes were kept so late with the lambs this year as to be left in wretched plight, and they were then pushed into the market and sold for a trifle, owing to the scarcity of food which the drought caused. To purchase such old sheep to fatten for the butcher is certainly a rash proceeding if done for that alone; but for folding on poor land the plan answers very well—better, perhaps, than anything else we can do for the improvement of poor grass land.

Arable Land.—So busy have we been upon the land that it has been no easy matter to spare horses to cart corn to market. Ploughing and Wheat-sowing is being pushed on as fast as possible, and we hope now to soon turn our attention to the root crops. Mangolds have made a good late growth, and the crop has gained considerably in bulk. This valuable supply of roots will be carefully stored, and the Carrots will be taken to one of the outbuildings for immediate use among the horses and dairy cows. Much of the Mangold field will be ploughed for Wheat, which always answers well after Mangold, plenty of manure remaining in the soil to insure a full Wheat crop. We have taken especial care in the selection of our seed corn for autumn sowing as an important means to success.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Baromet- er at 32 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min	In sun.	On grass		
1885.	Inches.	deg.	deg.	F.	deg.	deg.	deg.	deg.	deg.	In.	
October.											
Sunday	4	29.946	47.2	45.2	S.W.	51.4	59.4	42.0	99.2	35.9	0.010
Monday	5	29.699	59.2	46.0	S.W.	51.0	53.4	47.3	63.6	42.8	0.018
Tuesday	6	29.813	45.9	43.9	S.W.	49.8	56.5	39.4	75.3	33.9	0.475
Wednesday ..	7	29.760	47.5	43.8	N.W.	50.2	56.3	41.2	92.6	39.2	—
Thursday	8	29.739	48.2	45.0	S.E.	48.8	57.1	38.4	79.7	32.2	0.101
Friday	9	29.371	45.9	43.5	N.W.	48.8	55.6	42.6	97.7	38.4	0.386
Saturday	10	28.984	46.2	45.6	N.E.	48.7	52.0	44.7	58.5	39.8	0.041
		29.616	47.4	44.7		49.8	55.8	42.2	80.9	37.0	1.031

REMARKS.

4th.—Fine, but slight shower about 5.50 P.M.
5th.—Dull and drizzly all day.
6th.—Fine bright morning, very wet afternoon, and in night.
7th.—Fine and bright; fine sunset.
8th.—Dull showery morning; fine and bright most of afternoon; showers in late evening.
9th.—Fine and bright.
10th.—Rain in small hours, and till 10 A.M.; damp afterwards.
Rainfall still above, and temperature below the average—in fact, the temperature has fallen almost without interruption since the middle of August, and has been almost always below the average.—G. J. SYMONS



COMING EVENTS

22	TH	Pear Congress at Chiswick to November 4th.
23	F	
24	S	
25	SUN	TWENTY-FIRST SUNDAY AFTER TRINITY.
26	M	Royal Horticultural Society. Fruit and Floral Committees at 11 A.M.
27	TU	[Chrysanthemum and Vegetable Shows.
28	W	

THE HISTORY OF THE PEAR.

THE Pear Congress of the Royal Horticultural Society was opened yesterday (Wednesday) at Chiswick, and proved in all respects a worthy successor to the remarkable display of Apples which was provided at the same place two years ago. A report of the exhibits appears in another portion of this issue, but in view of the interest attaching to the important fruit so well represented in the Chiswick Gardens we give the following *résumé* of the chief points in its early history.

The Hebrews knew the Pear only in its wild state (Agas), but Homer places it among the fruits of the garden of Alcinous:—

"The branch here bends beneath the weighty Pear,
And verdant Olives flourish round the year.
The balmy spirit of the western gale,
Eternal breathes on fruits untaught to fail:
Each dropping Pear a following Pear supplies,
On Apples, Apples, Figs on Figs arise:
The same mild season gives the blooms to blow,
The buds to harden, and the fruits to grow."

Beyond the fact of the ancient Greeks having this fruit in cultivation we know nothing; but when we descend a little lower in the order of time we find among the early Romans not only considerable knowledge of its cultivation, but that they had many varieties, distinguished by names which told of their quality, their place of birth, or their first owners. Thus Cato, who lived half a century before the birth of our Saviour, enumerates, as the most excellent of Pears, the Voleman, Anicianan, and Sementivan; at the same time characterising the time when winter had quite departed, as being "when the Pear begins to blossom."

Cato also gives directions for raising the Pear from seed and giving them a shelter, which might be adopted even here advantageously. He says: "Sow it very early in the spring. Make the beds 5 feet wide; lay in some pulverised manure; spread it and break the clods; make the bed level, or rather a little hollow; then sow the seed thick, like Flax, sift the earth over it an inch thick; level the earth with a tablet or with your feet; fix poles around, lay perches on them, and lay on sprays or hurdles made of the Fig tree, which may keep off the cold and the heat. Make them so that a man may be able to walk under them. Weed the beds often; as soon as the beds begin to grow take them up, for if you pluck up hardy weeds you will take up the Pears with them."

Columella, Pliny, and others are still more copious in their lists of Pears; and some modern fruitists have endeavoured to identify these with varieties at present known to orchardists. Without expressing any assent to these identifications, yet we think they are not without interest; and we would not have the man for our friend who does not care to know that he is partaking of fruit descended from trees of which Pliny, Cicero, Varro, Columella, and Virgil may have enjoyed the produce.

To aid our readers in the enjoyment of this pleasant

possibility we will trace out some particulars which Dalecham and others have suggested upon this subject.

Columella says: "We must be careful to plant our orchards with the most excellent and fruitful Pears. They are these:" Crustumina.—This was so called from Crustuminum, in Hetruria, where it was most cultivated. Pliny says it was of most grateful flavour; and Servius says it was small and partly red. Supposed to be our Petit Blanquet, Little Blanket. Regia, or Royal.—Pliny says its stalk was so short that it grew close to the branch, was oblong in form and green in colour. Dalecham considers it to be the Carmaignole. Signina.—So named from Signia, in Italy. Pliny says it was by some, from its appearance, called Testacea, or Brick-coloured. Dalecham thinks it is the Cat Pear (Poire Chat). Superba.—It is small, says Pliny, but it is the earliest. Hardouin and Dalecham agree that it is our Little Muscat. Ordeacea, or Barley Pear; because, says Pliny, it was ripe in Barley harvest. It is thought to be our St. John's Pear, or Amire Joannet. Favoniana.—Pliny says it was red, and a little larger than the Superba. Dalecham and Hardouin think it is our Great Muscat. Lateritana.—Probably from its brick-red colour; is supposed to be the Poire Prévost, or Provost Pear. Dolabelliana was named after a Roman citizen, and distinguished for its excessively long stalk. Dalecham thinks it is our Musette d'Automne (Autumn Musette), or Pastorale. Venorea, or Venus Pear.—So called, says Pliny, from the beauty of its colours. Dalecham says it is the Poire Acciole. Onychina, the Onyx Pear, from its purple tints. Dalecham thinks it is the Cuisse Madame.

We might extend this catalogue twofold, but, after remarking that though the Romans paid such attention to the Pear, it is entirely neglected by the degenerate race now occupying the territory of the Seven Hills, we will next pass on to the consideration of what has been done to improve this fruit in more modern times.

To show further the knowledge of Pear culture possessed by the Romans we shall not stop to gather together the fragments of information sustaining our opinion, which we find scattered through the works of Cato, Columella, and Varro, but will turn at once to what is said by the brothers Gordian and Maximus Quintilius. They flourished in the second century, and in fragments of their writings, in the "Libri xx. Geoponicorum," we find that they recommend for the Pear a cool and damp soil, adding that if the fruit is gritty the soil should be improved and well watered—a recommendation also given by Palladius. Diophanes, who wrote before Columella, Varro, and Pliny, for they quote from his writings, directs that Pears must be planted in a mild situation; that to promote fruitfulness some of the main roots should be split, and the fissure kept open by a wooden wedge; and that if languid they should be manured with the refuse of the wine-press. The Romans had their Mr. Rivers, or advocate for dwarf Pears, for Tarentinus directs them to be grafted on the Quince (*Malum cydonia*). We might enlarge our extracts demonstrating that they knew how to propagate the Pear by cuttings, a lost art, but recently said to be re-discovered; however, we have quoted enough to justify our statement, and will at once proceed to examine what our earliest English herbal writer, Dr. Turner, says about this fruit tree.

In the second part of his "Complete Herbal," published in 1562, he remarks, "We have many kinds of garden Pears with us in England, and some kinds better than ever I saw in Germany for wholesomeness; and some in Germany more pleasant and greater than ever I saw in England. I have read in no old writer so many kinds of Pears as I read of in Pliny, whereof I will show certain Latin names, and compare them with our English Pears and Dutch Pears as well as I can. Pyra superba—that is to say, Proud Pears, are little, and soonest ripe; and these are called in Cambridge, Midsummer Pears. Falerna pyra have their name, saith Pliny

because they be full of juice. These are called, in some places, Watery Pears or Moist Pears. Dolobelliana are the Pears that have long footstalks. I remember not how they be named in England. Volema, whereof Virgil makes mention in the second book of his Georgicks. These, because they are very heavy, as Virgil sheweth, and very great, as their name betokeneth, for they seem to have their name of vola—that is, the hollow place or loof of a man's hand, because they be as big as a man can grip in the palm or loof of his hand. These are commonly called in English, Wardens, if they have a binding and be red when they are roasted, and indure unto March or February. It appeareth that they have their name of long keeping; for Warden, in Dutch, from whence our English came, is to keep. Serotina pyra are they that hang upon their mother until winter, and were ripe with the frost. These are partly our Wardens, and partly other long-during Pears, which are called in Dutch, Winter Birnen; and they may be well called in English, Winter Pears."

Next in order of time came Gerarde, who says—"The stock, or kindred of Pears are not to be numbered; every country hath its peculiar fruit. Myself knows one curious in grafting and planting of fruits, who hath in one piece of ground at the point of threescore sundry sorts of Pears, and those exceeding good, not doubting but if his mind had been to seek after multitudes he might have gotten together the like number of those of worse kinds." Johnson has altered Gerarde's arrangement of the Pears he specified, and given the following as the ancient titles, and our Pears which are synonymous. Whether correct or not in that respect, they certainly show eight varieties then known in our gardens, and some of which are still surviving. 1, *Pyrus superba* (Katherine Pear); 2, *Pyrus præcocia* (Jenneting Pear); 3, *Pyrus Jacobæa* (St. James's Pear); 4, *Pyrus regale* (Pear Royal); 5, *Pyrus Palatinum* (Bergamot Pear); 6, *Pyrus Sydonia* (Quince Pear); 7, *Pyrus episcopata* (Bishop's Pear); 8, *Pyrus hyemale* (Winter Pear). "All these," says Gerarde, "and many more, and those most rare and good, are growing in the grounds of Master Richard Pointer, a most cunning and curious grafter and planter of all manner of rare fruits, dwelling in a small village near London called Twicknam; and also in the ground of an excellent grafter and painful planter, Mr. Henry Banbury of Touthill Street, near Westminster; and likewise in the ground of a diligent and most affectionate lover of plants, Mr. Warner, near Horsey-down, by London." It would not avail much now to seek for Pear trees either in Tothill Street or Horsleydown!

Descending a few years later we find, in some degree from our increased intercourse with France, but still more from the improvement in our garden literature, that we have much fuller and certain information relative to the varieties then known. Many of them are among our most common Pears now cultivated. Thus Parkinson, in his "*Paradisi in sole Paradisus terrestris*," published in 1629, mentions among others the Bon Chrétien, Bergamot, Green Chesill, Catherine, Windsor, and "the Peare of Jerusalem, which being baked, is as red as the Red Warden, whereof Master William Ward of Essex has assured me, who is the chief keeper of the King's Granary at Whitehall."

Parkinson was certainly not a total abstinent from chirpy liquor, for he says, "The Perry made of Choke Peares, notwithstanding the harshnesse, the evill taste, both of the fruit when it is greene, and also of the juyce when it is new made, doth yet after a few moneths become as milde and pleasant as wine, and will hardly bee knowne by the sight or taste from it; this hath beene found true by often experience, and, therefore, wee may admire the goodnesse of God, that hath given such facility to so wilde fruits, altogether thought uselesse, to become usefull, and apply the benefit thereof both to the comfort of our soules and bodies."

Some old and well authenticated varieties are still in cultivation, but the majority of those generally grown have been raised or introduced during the present century. As

instances of a few of those that made their appearance before that time, and are still found in gardens, we may cite the following. The Achan, probably introduced to Scotland from Norway at an early period, but the actual date is uncertain. The Amadotte was also early introduced to England from France. Angelique de Bordeaux was brought from France about 1708. Autumn Bergamot has been doubtfully supposed to date from the time of Julius Cæsar. Barland was grown in Herefordshire as early as 1674. Besi d'Héry was discovered early in the seventeenth century, in the forest of Héry in Brittany. Beurré Rance was raised at Mons in Hainault in 1762. The Catherine Pear was mentioned by Parkinson in 1629. Chaumontel was discovered in the Château Chaumontel, on the road from Amiens to Paris in 1685. Gansel's Bergamot was known before 1753. Gros Rousselet was mentioned by Rea as the Great Russet of Rennes in 1665. The Longueville is thought to have been brought over to Scotland from France in the fifteenth century. Louise Bonne originated at Avranches in 1728. Passe Colmar is of Belgian origin, having been obtained at Mons in 1758. St. Germain is an old French Pear known about 1690. The Seckle is of American origin, and was in cultivation before 1765. Uvedale's St. Germain was raised in England towards the close of the seventeenth century, and the Windsor Pear was known as early as 1563.

Probably some of these patriarchs of the Pear world will be found amongst the numerous exhibits at Chiswick, as well as the very abundant, handsome, and fine quality varieties of later origin.

ANNUAL MEETING OF THE YORKSHIRE ASSOCIATION OF HORTICULTURISTS.

ADDRESS BY THE REV F. D. HORNER.

[At the last annual meeting of the above Association, held at the rooms of the Paxton Society, Wakefield, the Rev. F. D. Horner delivered an interesting address upon the general objects of the Association, and this was supplemented by a lecture on the Auricula. We have been favoured with the MSS. of both these, and as they are of far more than local interest we present them to our readers.]

I ESTEEM it a great honour and feel it a great pleasure to be asked to take this part in the day's proceedings. If I am to stand before you as a sincere lover of flowers, then my heart does not condemn me, but if it is as one who is able to say all that should be said on such an occasion, then my knees tremble, and I think you might have found someone more capable. Feeling this, I begged our Secretary to call my address a short one. Perhaps that is not as plainly said of my lecture also, but I must ask you to understand it of that too.

The Auricula is a very favourite flower of mine, but lest over it, or the other branch of my subject, I should stray into too great lengthiness, I have taken the precaution to anchor myself, as it were, to the limits of this paper. An important feature of our evening's programme remains after I have spoken, and I wish to keep mindful of this.

Into whose mind the idea which we develope to-day first came as a germ of thought I do not know, but it was a happy thought. The Wakefield Paxton Society, in having taken the first action, may be said to have germinated the idea as far as the seed leaf. That, we all know, is an early crisis in the life of a young plant, and it must soon lay hold of wider stores and stronger elements, and seize the opportunities and means of growth into maturer life that come within its reach. So our seedling idea, finding congenial elements in other horticultural societies of our county, is brought well into the rough leaf of its existence to-day, and now by combined harmonious action on the part of all, we hope, and have good faith in our hope, that the project will put forth branch and blossom, and bear much fruit.

These societies, and especially such strong combinations of their varied strength and experience as we inaugurate to-day, cannot but tend to spread horticultural knowledge and fervour. It is a friendly combination of practical men, and the aggregate force of it will be great. I hope we shall all think much of its intent and inherent powers. It will be held together by that bond of brotherhood which is at once so strong, yet gentle, among lovers of flowers. That love is very innocent, and it is one of the most natural of our affections. It speaks well, it is some relic of bright things in erring human nature to know that one pure taste and love left in it is natural to it, born with it,

and not destroyed. Children learn to love flowers before they learn to understand evil. The country child's first toys are flowers, the town child's chief wonderment outside his dingy surroundings of streets and paving stones are flowers. What a sign of a pure love and taste triumphant was that poor crippled child's sick-room window, that had in it a Hyacinth blooming in an old blacking bottle. I think it was Charles Dickens who noticed this, and he knew the little watcher and sufferer needed no more sweet comfort of flowers, because next spring the child's Hyacinth was not there.

Well, my friends, the bond that draws us now together is that of an early implanted natural affection. This love of flowers is first pure then peaceable; let us keep it so, and then we shall not fail of all the good we seek. Each separate society in our Association does not lose its own identity, its own marked line of interest, its own particular colouring, by joining in one at this point, any more than do the side streams that here and there along the watercourse of a river join in on one common journey to the great sea lose their names and qualities where they are yet separate becks and rivulets. But, like as many tributaries make a river navigable at last, and of untold value not only to a district, but to a whole nation, so do we hope that the Yorkshire Association, which, riverlike, gathers from the wide horticultural area of the grand county of which we Yorkshiremen are so proud, may bring and carry forth results that shall be marked, and broad and valuable to the whole pursuit and science of floriculture.

To change the figure, and speaking, of course, still figuratively, we shall keep one another warm, brace each other up, help and expand each other's views. This nearer view will make us look more narrowly at one another, and we shall find our brethren not so narrow as perhaps we thought. If other of the societies that become kin to-day are like the Paxton Society of Wakefield, then the florist element will be appreciable. I suppose I may say it is a rare, I am sure I may say it is a useful element; I hope it will increase. I daresay I am put down as a specialist and an extremist, and so I may as well say that the florist element cannot be overdone; I believe its essence really pervades and influences further and wider than is thought. One truth our horticultural brethren will learn from us florists is this, that the love and intimate observation which the culture of florists' flowers beget, do not restrict and blunt floral sympathies, but enlarge them. It is just those who go most minutely and strictly into any pursuit or science who have large heart and eye for all. Such devotion is expansive. I have never met any who loved a wild flower so well as brother florists, never any who had a fuller appreciation of all than those who were supposed to care for only one or more strict florist's flowers.

I hope many florists will join this Association, and that many others who have joined will become florists. I hope that every wholesome leaven brought in may work throughout the whole; and, speaking of my brother florists, I think I may say that the general body will find that the particular men the florist specialists have so large sympathy with all floriculture, that they gladly join this Association through its tributary branches, as a welcome means of letting their whole heart go free. None of us can go beyond our opportunities, few of us can find that our means and opportunities are equal to the breadth of our desires, the depth of our floral love, the height of our aspirations. Where we cannot have full scope for these implanted and aroused instincts, what so near and cheering as the advantages of such an Association as this? The very objects of it speak of the wealth we can enjoy in common, the good which we can give and take, according to the varied store in our different treasuries of literature, knowledge, and experience. If we could say that we felt no interest in the objects of our united action as laid before us now, it would be saying we did not value the science of our art, and were content to be more or less solitary and shallow pursuers of it, each one buying his own experience and selling it not.

But where knowledge is wide standards are high, and success is greater in the sense of being more highly prized, but I can remember the time when a secret was the supposed way of success. The time, use, and fruition of knowledge, which is the imparting of it, was not always understood and felt. Now we walk in a fairer truer light, and the endeavour, one with another, is to see not how little we have to learn, and how little we need impart, but how much and how thoroughly.

Of course, exhibitions are instructive; there we see plants and flowers and fruits in such calm and finished perfection, that they seem to have known nothing of the roughness, suffering, and sorrow in which the whole creation, alike of things that feel and things that cannot, groan together in this sad world, and we know that the competition is a sharp spur to effort, and

where competition is healthy and fair it is a life-giving stimulus. But something more besides these contests is required to bring the full life into play, something more than conquests won and disappointments borne with silent grace and fortitude, and one thing more is this broad, brave, and helpful fellowship of friends and fellow labourers. I think our Association is meant to be, and will prove to be, a vital organ of the body floricultural.

If flower shows are the outward features, so fair and varied in their beauty that they seem like something belonging to that old first garden, of which but the name remains to us now, then this new community in which we enrol ourselves will be the power and function that will send the pulse and glow of healthy life throughout. I think I am not too sanguine in anticipating and hoping and prophesying this. I at least take no credit to myself for far-sightedness. I do not consider that I am looking through spectacles rose-tinted by the warmth and enthusiasm of this day's inauguration festival. No, I am looking with naked eye, and I think yours will be as single as mine.

The time has gone by for regarding a brother horticulturist merely as somebody set up to be bowled over at a show, and all the better victim for being as raw and unenlightened and unhelped as possible. What I may call the cold heartless competitions of shows is passing away, or is gone. We meet at many by times, and have wayside intercourse. Men of a fancy, a taste, a pursuit of recreation, are not content to meet as strangers, and as strangers part, they know there is always something valuable in that which helps to an interchange of knowledge, and which gives a body of men coherence, that will be the province of our united horticultural forces. If the example is new, let us keep it good and true, and then the spread of it will be one more bright feature in the prospects of horticulture.

(To be continued.)

NOTES ON GRAPES.

TRENTHAM BLACK.—This may be seen in the early house at Wrotham Park in company with Black Hamburg and Black Prince. The bunches are late in showing and are not very handsome at any period of growth. The berries set somewhat irregularly, but with careful thinning a fairly good-looking bunch can be grown. The shape of berry (if my memory serves me right) resembles Black Prince. It is a good grower, assumes a beautiful colour, and in flavour it is first rate.

MADRESFIELD COURT.—This is a grand Grape, and I am glad to say I have found out the way to grow it. Seven years ago I lifted a seven-year-old Vine out of the late house and put it at the warmest end of the second house, and so pleased are my employers with it that I am instructed to plant more of it in preference to Black Hamburg. I keep the top ventilators open a little at all times, and also in front when the berries are swelling, and have no trouble to finish it without cracking. The only fault I find is that it does not keep so well as Mrs. Pince, Alicante, and Lady Downe's.—G. MERRITT.

JOHN DOWNIE.—I had a young Vine for trial from Mr. Downie of the Vine bearing his name, with the view of proving its worth and its distinctive character. It was planted in a house to be used chiefly for the growth of Muscats along with a few other black sorts. Within a year or so, as is my usual practice, I took from five to ten bunches from each supernumerary Vine. John Downie and Alnwick Seedling appeared to be identical in appearance of foliage, wood, strength of growth, appearance of fruit, and flavour. This year (being their second season of fruiting) I can discover no difference between them. Mentioning the fact to Mr. Downie when he paid a visit here last summer, he stated that he believes a mistake has occurred in sending out this Vine, as the original variety seemed much more like Gros Colman than Alnwick Seedling, and so I think, judging from samples of each which I saw exhibited together.—M. TEMPLE, *Carron House*

JUDGES AND THEIR WORK.

It would seem from the remarks of "A Kitchen Gardener," page 203, that judges are not much better chosen in his district than in this, and I am sorry to say there are other places where similar blunders are continually being made.

In the county town here (Midland) there are five shows held during the year, which are well patronised by the public, yet there are but few examples worth going to see, as many of the best exhibitors do not show now. There are four judges, who are nearly always chosen for each of these shows; one is superintendent of the cemetery, another of the public park, another is a florist, and the other is a clergyman who grows Roses and Pansies well, but never attempts to grow anything else.

What practical gardener would exhibit fruit and vegetables there and expect justice? Why are they chosen? Because they are each well

known in their separate lines of business, yet many appear surprised that showing is on the wane in the neighbourhood.—J. L. B.

THE PRIMULAS.

(Continued from page 313.)

P. CLUSIANA, *Tsch.*—Though as yet rare in gardens this is the most beautiful of all the Tyrolean Primroses, and perhaps the easiest managed in cultivation. Through the early spring months it is unsurpassed by any hardy flower, its firm-textured flowers resisting almost all kinds of weather. The flowers are larger if anything than our Alpine Auriculas and produced with equal profusion. It thrives best on a west exposure in a rich soil to which plenty of limestone has been added. It must not lack water during the growing season, and if planted on a slope it is rarely if ever damaged by moisture during winter. The position should be exposed, and be such as to allow the plant to get the midday and afternoon sun. A plant nearly related to the above has been lately introduced from the Continent under the name of *P. Churchillii* or *admontensis*. It seems to be a hybrid like *P. super-Clusiana*. The leaves are smaller, narrower, and partake a little of the glossy



Fig. 55.—*Primula Clusiana* (Reichenbach's "Icones Plantarum").

P. spectabilis. It is, however, inferior as a garden plant to the type, and only desirable for variety.

P. Clusiana grows from 6 to 9 inches in height, the scape bearing a head of flowers numbering from five to ten, each about an inch in diameter, of a very bright rose colour. Leaves broadly ovate, slightly pubescent, prominent on the margins, which are slightly indented from where the leaf begins to taper to the petiole. Sepals ovate, very blunt, sparingly hairy. It flowers from the end of March until May. It ripens seed freely, and is also readily increased by division.

P. CORTUSOIDES, *L.*—The Cortusa-leaved Primrose is said to have been first introduced to this country about the year 1796 by Messrs. Lee & Kennedy, nurserymen at Hammersmith. It was much admired at that time, when something under a dozen Primulas were all in general cultivation. It has up to the present time held its own ground in the popular estimation, and in some of its forms, including the *amœna* varieties, bids fair to be the Primrose of the future. The remark of Linnæus that it has the foliage of a Cortusa with the flowers of the *Aretia vitalliana* holds good now, the typical form grown in gardens having altered little in all these years. Although perfectly hardy with us it should never be planted in exposed places, as, owing to its tall habit of growth and fine-textured

flowers, it invariably suffers from cold winds if not from late frosts, &c. A sunny sheltered nook in the rockery suits it well close to low shrubs or stones, but with a full exposure to the south or west. It grows best in rich light soil kept free and open with small pebbles, &c. Good drainage is of great importance to the successful growth of this plant, and especially during the resting season. It is from 6 inches to a foot in height, bearing a loose capitate head of handsome rose-coloured flowers of various shades, deeply cut, and about an inch in diameter. The leaves, which die during winter, leaving the crown exposed in the form of a ball, are ovate in outline, bluntly and irregularly toothed, having a cordate base, the edges being involute when in a young state. It has given rise to numerous varieties, the *amœna* section being treated under *P. Sieboldi*. It flowers May and June, and is a native of Siberia, increased by division or seed, the latter being best, as they make the freest flowering plants.

P. CRIDALENSIS, *Hort.*—This is supposed to be a hybrid between *P. tyrolensis* × *Wulfeniana*, and from the appearance of the plant, both habit and leaves, there is every reason to believe this is correct. It was introduced by Mr. Backhouse of York. It is growing well on an east exposure, but seems to suffer from drought more than either of its parents. Leaves ovate, again broadening to the base of the petiole, slightly ciliated, and rough on the upper surface. We have never seen this plant in flower.

P. DAONENSIS, *Leby.*—A name given in 1854 denoting one of its localities, and preferable to *P. œnensis*, *Thom.*, which, though given two years earlier (1852), is altogether unmeaning compared with the other. It is now being generally adopted, and will no doubt in time take the place of the other. *P. daonensis* is a very pretty little plant, never attaining more than an inch or so in height; but as it seems to be variable it may be more robust in some of its forms. It was one of the plants brought home by Mr. Maw from the Lombardy Alps in 1875, at that time considered a rarity and much sought after. It forms little glutinous rosettes as close to the ground as *P. minima*. The leaves are wedge-shaped or cuneate, and may be compared to a lawn tennis bat, the margins of the upper half bluntly serrated and thickly studded with glandular hairs. The large pale rose-coloured flowers are very handsome, their beauty being increased by the lovely silvery white eye. It thrives best on limestone, the plants requiring to be firmly wedged between them. It likes plenty of sun, a south-eastern exposure being the most suitable. It flowers in May and June. Native of the Tyrol, Eastern Swiss Alps, &c., from 6500 to about 1000 feet above the sea level. Syn., *P. cadinensis*, *Hort.*, a garden form with longer and narrower leaves; *P. œnensis*, *Thom.*; *P. Stelviana*, *Vulp.*; *P. hirsuta*, *Rech.*

P. DENTICULATA, *Smith.*—For the introduction of the purple Nepal Cowslip we are indebted to the enterprising firm of Messrs. Veitch of Chelsea. This is also one of the plants that have not got quite used to our climate, either throwing up its handsome heads of flowers too late in the season or too early before the severe frosts and cutting east winds have ceased. In a few places where it can be well sheltered without the exclusion of light it flowers freely and shows an extremely vigorous habit. At Wisley, the experimental garden of G. F. Wilson, Esq., I saw large patches of them growing in the wood. They had plenty of the needful light, and were well sheltered on all sides by the thick brushwood, and overhead with the forest trees. I had also the pleasure of seeing the flowers produced in the spring well-formed heads almost as large as a cricket ball and of a superb colour. Of course there is not such a wood in every garden, but all who wish to grow a really valuable plant will not be long in finding a position suitable to its requirements. Whatever situation be chosen it must be one well sheltered from the east winds, for even in the south of England in the open border the flowers never open, the flower heads are distorted, and the plant rendered useless. It does not seem to be a very good perennial even where it succeeds, and after a year or two seems to lose energy and deteriorate. My plan is to lift the plants every second year, divide them as small as possible and replant; the result is renewed vigour, and a greater number of larger flowers. I have also seen this used effectively in large conservatories, planted as an edging with *P. japonica*, and attaining remarkable dimensions, with both flowers and foliage.

It usually grows about a foot high, throwing up numerous stout flower stalks, which are terminated with large heads of purple flowers in various shades. The flowers are closely packed together, averaging half an inch in diameter. Leaves oblong, spatulate, about 6 inches long, wavy, wrinkled; veins reticulated, and sharply toothed margins; the petioles are generally of a reddish colour, peculiar to Indian species. It has given rise to numerous varieties, among the most distinct being *B. cashmeriana*, which grows larger than the type, and with dark lilac flowers, very distinct and beautiful. *Henryi*, perhaps a robust form of the variety *pulcherrima*, which may easily be distinguished by the presence of meal dust; it is a

much handsomer plant than the type, and in all ways preferable. *Amabilis*, lately introduced by Max Leichtlin of Baden-Baden, is quite distinct, and very showy; the varieties *nana* and *paucifolia*, both of which are distinct, do not appear to be in cultivation. All the above plants flower from early March until June, and where well sheltered form really handsome groups. The flowers last a considerable time in water, and will be found very useful in a cut state. Syn. of type, *P. Hoffmeisteri*, *Klots*. Natives of the Himalayas.—D.

(To be continued.)

JUDGING CUCUMBERS.

MUCH has been written lately about judging Grapes at our exhibitions, and some good hints have been thrown out to judges and others on the subject. While attending flower shows in different parts of the country my attention has been drawn repeatedly to the way in which Cucumbers are generally judged, and I have often wondered why the subject has not been taken up long ago. If I understand rightly, the prizes offered by societies are meant to encourage the cultivation of the most useful varieties; but, as a rule, the prizes are given to long unproductive varieties that have no merit whatever but their length to recommend them. I have been often asked, and by competent gardeners too, "Why it was that judges encouraged the cultivation of these by giving them prizes, as they were unprofitable either for market or for private use?" I had to confess that I did not know myself, but that I had seen them marked in seedsmen's catalogues as being good varieties for showing, and that, I believed, was all they were good for, as it would not pay to grow them for market nor for private use, when there were so many good prolific varieties in cultivation—varieties that yield ten Cucumbers, from 12 to 16 inches in length, of the best quality, for every one that those monster long guns produce. I am fully convinced that the majority of Cucumber growers would give their verdict in favour of the prizes being given to Cucumbers from 12 to 20 inches in length. I would like to know your practical correspondent "Thinker's" opinion on the subject.—EUPHRASIA.

GARDENS NORTH AND SOUTH.

ON page 296, the issue of the 1st inst., reference was made to the condition of gardens as influenced by the great heat and extreme drought that so long prevailed in the south of England, and to the comparative freshness and consequently greater productiveness of gardens two hundred miles northwards. The difference that existed in those respects could not be appreciated except by travelling direct from one part of the country to another, and this I did. In Sussex, for instance, and it was the same in hundreds of gardens in the southern counties, it was found practically impossible to raise Turnips; in Lincolnshire and Yorkshire the fields were packed with them, and so luxuriant were they that on some highly farmed land where the crop was in rows 2 feet apart the growth overlapped the spaces completely. Nothing could better indicate the character of the season in the respective localities, and northern gardeners have had a "better time" than their southern brethren in distress during the summer that has now closed.

Even in the lowlands of Essex and the Fens of Cambridgeshire, so far as could be judged from the Great Eastern express on its way from London to Doncaster, vegetation appeared to be more exhausted than on the higher lands further north, where showers had been more prevalent and the sun consequently less continuously scorching.

FARMERS' GARDENS—ROSES.

In the garden of one of the best farmers in England, Mr. Ismay Fisher, a tenant on the estate of Mr. Sutton Nelthorpe, in North Lincolnshire, beds of Asters far surpassed any I had seen in the south, and if Messrs. Sutton of Reading could have seen the products of their seed they would have been satisfied with the manner in which the excellence of the varieties was displayed. This garden, too, is noted for Roses. Not only do the blooms "take the lead" at local shows, but Mr. Fisher has as one of his possessions a silver medal of the National Rose Society, won at Manchester last July with a magnificent bloom of Lady Mary Fitzwilliam as the best H.P. in the amateurs' classes; indeed, good judges have stated it as their opinion that a finer bloom was not seen during the season. In the chief open class at Hull, in which some of the foremost rosarians entered, though all of them did not compete when they saw what they had to contend against, Mr. Fisher's Roses excelled all others. He does not grow many, possibly not more than 200 plants, but grows them well. Fewer varieties and more of each of those that flourish there will be his future policy, dividing those that are found best adapted to rather light soil from others that prefer strong, and planting them accordingly. This, it will be conceded, is a practical method and can scarcely fail to have a satisfactory result. The grower of these Roses, as may be imagined, is not one of those persons who muddle along in one of those paradisaical "small holdings" in which the so-called "farmer's" wife boasted they kept a "hen and things." Neither is his farm so unwieldy that he cannot do full justice to it, hence by high culture he places himself beyond the pale of "depression," enjoys a good social position, and can indulge in the delightful pursuit of growing Roses to any extent desired.

A COTTAGER'S ROSES—LARCH.

While on the subject of Roses a quick and profitable method of raising them that has been pursued for years by an industrious "son of toil" may

be mentioned. John Braiser "works in the woods" on the estate named; in fact, takes the practical lead in their management, and if he could write about Larch culture as well as he conducts it could tell how sandy and apparently almost barren tracts of land could be profitably occupied. Planting a hundred thousand trees a year has been part of his duties, and the thrifty plantations are a treat to see. There is "money in" Larch-growing as practised there and on land that is practically valueless for agricultural purposes. But to the Roses. This worthy woodman digs up Briars in the autumn and plants them in his well-tilled cottage garden. They root quickly and push strong shoots in the spring, ready for budding immediately buds can be found. This is early in June; they start growing at once, and often flower freely during the season. Three or four buds inserted in a stock form a good head by the autumn, and thus Rose trees are made and sold within twelve months from planting the Briars. This is quick work, and if the plants or trees did not give satisfaction customers would not be retained year after year.

FROST IN SUMMER—THE CZAR PLUM AND HESSLE PEAR.

In contrast with the heat that was so oppressive in the south may be mentioned a "nipping frost" that occurred a little further north in the same country early in August. One large, prosperous, and excellent farmer on the estate of the Earl of Yarborough had three acres of Potatoes cut down, and Scarlet Runners, where not sheltered, shared the same fate. In other fields I saw many Potatoes cut by frost, but not so seriously. Mr. Beaulah, the gentleman referred to, is a good gardener, apiarian, and entomologist, but gardening and orcharding are in their infancy in his new home; still he has in a young plantation of fruits discovered the value of the Czar Plum as an orchard standard, trees of it having "done better" than any others. This and the Victoria he considers two of the most useful and profitable varieties to grow. He is probably not far wrong, yet while the latter is well represented in the north the former is scarcely known. It is known in Kent, and is being extensively planted by the fruit farmers there, which is about the best testimonial a hardy fruit can have.

A Pear not much cultivated in the south is seen in numbers of gardens and orchards in the north—namely, the Hessele, and it is a question if there is a more reliable orchard variety in cultivation. The branches were borne down by their loads, and the fruit sells readily in the markets, as the quality is known to be good. The Hessele Pear is in use in October, but once in it is soon over. It is not at all uncommon for fifty pecks to be gathered from a tree, and if only sold at 6d. a peck, the crop is of more value than the ground which the tree occupies, as it is not of spreading habit. In the district in question one tree of the Hessele is worth more than three of Beurré de Capiaumont, which is esteemed as an orchard Pear in some localities.

APPLEBY HALL.

The description of Lord St. Oswald's Yorkshire seat, Nostell Priory, reminds me of calling at his lordship's Lincolnshire residence, Appleby Hall, a quaint old building, surrounded with fine trees and shrubs. There is an extensive lawn and pretty flower garden, and so far from the drought and heat checking the growth of grass and flowers, the beds were overflowing with luxuriant plants, and the mowing machine was in constant requisition. At the same time lawns in the south were "burnt up" and flowers could not grow for the want of moisture. The gardens at Appleby are admirably kept, and vegetable and fruit crops good both outside and in. Amongst the plants well grown under glass, *Posoqueria longiflora* is cherished; it resembles a vigorous *Toxicophlœa*, and is similarly fragrant. The curious and brilliant *Strelitzia regina* was in superb condition, and *Chrysanthemums* were so good that if disbudding were practised they would produce blooms of exhibition quality. Mr. Johnson is not only an industrious and competent gardener, but appears equally skilled as an apiarian. He is an adept at making hives and sections, secures an abundance of honey of the first quality, and is quite convinced that "hees pay when well managed." That he manages them well, and the garden too, is beyond a doubt.

POTATOES—THE JENSENIAN SYSTEM.

Much has been heard about the Jensenian system of Potato culture of late, as "invented" by a Danish professor as a preventive of the murrain. The plan has this year been tried at Chiswick, but the season has not been favourable for testing its merits. If, as I understand it, the method consists in dividing and partially bending back the growths and "crowning" the plants with soil directly over the roots, the plan has been in operation at Appleby for a quarter of a century, not as an experiment in the Hall gardens, but as a regular method of culture generally adopted in the parish. The plan was to place good sets a yard apart on the surface of the ground and cover them with soil dug from between them. As growths extended they were thinned, leaving about four of the best, these being opened out and "crowned." This crowning was continued at intervals till no more soil could be found. The plants were then on hillocks, with the growths hanging down and covering the sides. The object of the cultivators was to get a peck of Potatoes of 21 lbs. from each root or hillock, and the feat was occasionally accomplished, while the yield was invariably great, as it ought to be considering the labour involved; and what is more, and this supports Professor Jensen, when the murrain was raging furiously in the district in 1872 the Appleby crops were practically free, as I ascertained from the excellent clergyman of the parish, Mr. Cross, to whom I wrote for information at the time. I shall be glad to learn in what respect the Jensenian system differs from the method described, and which I saw extensively adopted in the parish

named thirty years ago. It is not much practised there now, if at all, but recourse would perhaps be had to it should wet summers come again, and with them a malignant outbreak of the Potato disease. Be that as it may, someone commenced the practice at Appleby that appears to be identified with a foreign name, and I am sufficiently patriotic to desire Englishmen to have the credit to which they may be entitled, even in a method of growing Potatoes.

OAKBROOK—SHARPE'S VICTOR POTATO—DESTROYING WASP NESTS.

Moving on I next found myself at Sheffield, and a passing call on Mr. Woodcock at Oakbrook enabled me to see how well he continues managing Mrs. Mark Firth's gardens, and also to note that there had been no parching summer there, and lawn-mowing, that lapsed in the south, was a weekly duty. The Royal trees, of which there are seven in the grounds, are making good progress, the specimens of Fisher's Golden Irish Yew, planted by the Prince and Princess of Wales a few years ago, sharing the honour with a pair at Chatsworth of being the finest in the country. Lapagerias, which are so well grown at Oakbrook, were commencing to expand. The Parsley-leaved Bramble was producing long clusters of its large black fruit, thrice the size of wild Brambles, and regarded as indispensable; and Sharpe's Victor Potato had just been lifted—as fine a lot of tubers as was ever seen, and mentioned here because the variety is described by Mr. Woodcock as the best early Potato he has ever grown in frames or outside, and others may like to know it. Mr. Woodcock had also a very fine lot of Chrysanthemums, but I was sorry to hear from Mr. B. Simonite that most plants on the north side of the town were cut to shreds by a hailstorm early in August.

Though the summer was not hot wasps' nests were numerous, and the easiest, cleanest, and quickest way of taking them may be mentioned. The agent employed is cyanide of potassium. Many persons know how effective this is, but numbers have not tried it. They may do so next year if they are troubled with the fruit-devouring pests. A strong nest was found, and in the daytime, when the wasps were busy, about a teaspoonful of the rough salt-like substance was placed on the end of a 3-foot lath and tipped into the entrance, that is all. No more wasps came out till dug out; but what about those that are not in? They return from their foraging expedition and go tumbling in never to come out again alive. We watched attentively for half an hour, and not one escaped. The nests are dug out the next morning, but if firmly blocked up it is difficult to conceive what more is needed, except baits for fishing or food for fowls, which eat the white fat "grubs" ravenously.

TO CHATSWORTH.

And now on we go over the hills to Chatsworth—a twelve-miles drive, than which it is not easy to imagine anything of the kind more delightful in summer; but the run from Callendar to Loch Katrine leaves nothing to be desired. I have yet to see the lakes of Killarney, but as both Mr. Burbidge and Mr. Murphy have invited me "over," I hope to be able someday to compare Irish with Scottish and English scenery. There are two routes from Sheffield to Chatsworth by coach, and persons who have not travelled by either of them, and should have the opportunity, should choose the one by Froggat Edge (if there is another "t" in the word those who know can add it, I am sure I do not). It is marvellously cheap, only costing 1s. 6d. The "Edge" is the abrupt termination of a range of hills, rent and riven as if by some Titanic force tearing the rocks asunder and spreading the ponderous masses on the slope as if they had been so many pebbles in the hands of a sportive child. This is the work of far past ages. The ruin, if it may be called so, is stupendous, and is as rugged and wild as the most romantic mind can imagine. It is on the left; and on the right, what a contrast! Below us and stretching far away is a smooth charming pastoral valley hiding itself here and there between the tree-clad hills, the twisting Derwent shimmering in the foreground. If there were nothing but this even the gardening tourist would be satisfied; but there is Chatsworth at the end of it, and from a gardener's point of view the assertion may be ventured that it was never better worth seeing than during the present year. No attempt will be made to describe it. A notebook is essential for that, and it would be filled; but as this was deliberately and, if you like, by "malice aforesaid," left at home, only a fringe of the great place will be touched, with the object mainly of directing attention to a delightful Water Lily that all should grow who can, and which many might succeed in doing if they tried without the convenience of such a luxury as will be alluded to, and which can only be possessed by the few.

VICTORIA REGIA HOUSE—NYMPHÆA DAUBENIANA.

Since its erection this splendid structure has always been one of the noble features of these princely gardens. This year it is no exception to the rule, having recently been thoroughly repaired and redecorated. At the time of my visit it presented a sight not easily forgotten. The centre tank, 36 feet in diameter, is occupied with the Victoria regia, which was planted late in April. It has now twenty leaves on, many of them 6 feet in diameter. Between forty and fifty flowers had then expanded, and there were many more to follow. The largest flower measured 12½ inches in diameter.

Round the edge of the large tank are planted many varieties of Nymphæas which flower freely during summer and autumn, and add much to the beauty of the house as well as proving most acceptable in supplying a great quantity of choice cut flowers. The variety Daubeniana is the most useful for the latter purpose, and might with advantage be more extensively grown in stoves, where its fragrant and beautiful flowers would be much appreciated. Mr. Thomas has kindly penned a few lines

on the cultivation of this variety, which will be found in another column. Another superb species is the new Nymphæa zanzibarensis, its large purple flowers with brilliant orange centre producing a rich effect among other choice Nymphæas, such as pure white dentata and the Carmine Devoniana. There are many other varieties of Nymphæas in this tank, but the above are the most popular and showy. In the side tanks (eight in number) are planted Nymphæas of various sorts, Nelumbins, Thalia dealbata, Pontederias, Triana bogatensis, Ceratopteris thalictroides (the Water Fern), and other rare aquatic plants. The side of the house and the curbs round the tanks are occupied with ornamental plants, conspicuous among them being the Musa coccinea (true variety), flowering freely on plants potted from suckers this spring. Celosias are splendidly grown in this house, the abundance of light, heat, and humidity seeming to suit them admirably. Coleus also succeed well here. I do not remember having seen any better coloured before, and, what is unusual, they are allowed to flower, which they do freely—a dozen spikes on a plant, several of them measuring 18 inches long. The effect of these light blue flowers against the brilliant foliage of the Coleus is most charming.

The doorway and a portion of the sides of the house are festooned with climbers, such as Cobæa scandens variegata, Cissus discolor, Vitis gongyoloides, and the pillars are effectively clothed with Allamandas, Bougainvilleas, Clerodendrons, &c. A notice of this house would be incomplete without a mention of the superbly grown baskets of Achimenes, which have been grown there for many years past, suspended from the roof. They have charmed and surprised all who have had the privilege of seeing them. They have been as fine this year as usual, as will be admitted when it is stated they were complete floral halls, varying from 12 feet to 15 feet or more in circumference.

In other departments the Chatsworth Gardens will bear close inspection. Eighty-years-old last-autumn-lifted Vines were bearing a splendid crop. Pines have undergone a striking transformation, 130 handsome fruits then advancing for autumn and winter; the plant houses near the mansion being thoroughly restored, and their contents in excellent condition, while the kitchen garden was filled to overflowing with useful crops. Scarlet Runners, however, that were exhausted by heat in the south, the sun burning off the flowers, were so checked by cold at Chatsworth that they could scarcely produce any flowers and no crop of pods worth gathering. Gardens, then, have not been "burnt up" all over, and the reports of heat and drought with the consequent scarcity of vegetation in the south must have been almost regarded as exaggerations by some northerners; but they were not.—J. W.

EARLY PRUNING OF VINES.

I WISH we had a few more men like Mr. Iggulden, who would give us their experience when they strike out of the beaten track. We are so apt to follow another, without stopping to consider if it is the most practical course to pursue, until we either stumble over something accidentally, or someone points out a much more reasonable way. I am but a young man, yet I have considerably altered my method of cultivating many plants from what I was first taught, chiefly through reading the Journal.

I was very pleased to read Mr. Iggulden's remarks on early pruning of Vines, as I have been practising early pruning about six or seven years by shortening the laterals and sub-laterals a little every week, commencing about the 1st of September (according to the season and the ripeness of the fruit), until the laterals are shortened to the leaf next above the bunch, and the sub-laterals have been all removed up to the last two years. Since, then, I have left the three lowest on each lateral. Since doing so, I think I have had better bunches. Previously I used to pull off all the lower sub-laterals when they were quite young, about the time they were in flower, or thinning commences. I should like the opinion of Mr. Iggulden and others on this, Are these lowest sub-laterals better left on and pinched to one or two leaves, or taken off when quite young? —J. L. B.



THE meetings of the NATIONAL ROSE SOCIETY have been arranged for 1886. The Metropolitan Show will be held at South Kensington, July 6th, the Provincial Show at the Botanic Gardens, Birmingham, on July 15th. The following Rose show fixtures have also been announced—Farnham, June 30th; Reigate, July 1st; Tunbridge Wells, July 2nd; Eltham, July 3rd; Sutton, July 7th; Hitchin, July 8th; and Wirral, July 10th. These Societies are all affiliated to the National.

— WILLIAMS' ORCHID ALBUM for October contains plates of the undermentioned. SCHOMBURGKIA TIBICINIS, the noted Cowhorn Orchid of Honduras, which is remarkable for its large conical hollow pseud-

bulbs. It bears a great dense spike of crimson and purple flowers, not unlike some of the *Lælias*.

— AN excellent plate of the small-flowered *ONCIDIUM BRUNLEESIANUM* is also given. The flowers are about an inch in diameter and are borne on closely branching panicles; the sepals and petals are pale yellow with slightly darker bars; the lip is rich orange, with the fore part dark brown, a curious contrast. The species is a native of La Plata and was found with *Oncidium varicosum* on the Rio de la Plata.

— A DELICATE and pretty introduction from Brazil is *LÆLIA MEASURESIANA*, which was pure white sepals and petals, the lip slightly fringed rosy crimson with a yellow throat. It flowers in April and May lasting "three weeks in perfection," and was named in honour of R. H. Measures, Esq., Woodlands, Streatham.

— THOUGH little known *TRICHOGLOTTIS FASCIATA* is a pretty and curious species, which is of scandent habit and grows somewhat like a *Renanthera*. It bears racemes of flowers upon the stems, the sepals and petals being yellow barred with chestnut brown, and a three-lobed white lip. At a glance it is not unlike some of the *Odontoglossums*.

— THE series of articles communicated to this Journal during the present year on the HISTORY OF THE CHRYSANTHEMUM by Mr. Harman Payne have been embodied by the author into a neat treatise of thirty-seven pages. It is not necessary for us to point out the exhaustive yet concise manner in which the subject is treated, but we may venture to say there are few if any growers of the popular autumn flower that will not find something in the treatise that they did know before it was pointed out by the author; and we suspect very few of them will fail to possess this little work, in which so much historical information is compressed.

— THE "Journal des Roses" for October gives a coloured plate of ROSE SOUVENIR DE VICTOR HUGO, which, judging by the figure, is a pretty brightly coloured variety, somewhat of the *Homère* style. It is a Tea variety, and is said to have been obtained from Comtesse de Cabarthe crossed with *Regulus*, and was obtained by M. J. Bonnaire, Monplaisir, Lyon. The flowers are very neat in the bud, the petals pale yellow or buff, edged and deeply tinged on the upper surface with bright rosy red.

— MR. R. SILK, gardener to J. Abernethy, Esq., Whiteness, near Margate, writes:—"In the prize list of the fruit show on the 13th and 14th inst., at Kensington, my name was mis-spelled 'Sich.'"

— THE date of the SHEFFIELD CHRYSANTHEMUM SHOW has been changed from the 13th and 14th to the 20th and 21st of November, on the ground that the flowers are so late in the district that they could not be fairly represented on the date first named.

— WE learn that Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, has secured the contract for the FLORAL DECORATIONS AT THE GUILDHALL on Lord Mayor's Day, in open competition.

— MR. DAVID THOMSON, Drumlanrig Gardens, writes:—"The statement quoted from a northern contemporary about THE DRUMLANRIG WOODS is not correct, beyond the fact that an immense number, about 300,000 trees, were blown down nearly two years since. Great numbers have been sold to various parties, but probably only about one-third of them have been disposed of. It will take years to clear the woods, yet I am happy to say that a visitor who had never seen the forests would not miss the fallen trees, so vast is the extent over which they are strewn."

— THE troublesome CHRYSANTHEMUM APHIS, to which English growers have applied the name of "the American Flea," and concerning which we have had several letters the past week or two, is also occasioning much annoyance in the United States, whence it is said to have been imported to this country in plants or cuttings of new varieties. A correspondent of "Meehan's Magazine" writes—"Every purchase of Chrysanthemums brings us an army of this pest, but I have always succeeded in getting rid of them. My method is to watch the plants carefully every day and wash them in strong soapsuds. Tobacco soap is best, but any good soap will do, taking care to allow none to escape from the dish of suds, and follow up this treatment without intermission as long as any remain. Various insect remedies are said to keep down all these pests of the greenhouse, but that is not at all satisfactory, and calls for 'eternal vigilance.' When extermination is at all practicable it should be the result aimed at."

— MR. G. F. WILSON writes:—"The authorities of the *Graphic* sent down a good artist to make drawings of our EXPERIMENTAL GARDEN AT OAKWOOD, WISLEY. Would you oblige me by letting my gardening friends know that these will appear in the No. of Oct. 24th?"

— THE Council of the HACKNEY MICROSCOPICAL AND NATURAL HISTORY SOCIETY will hold a Fungus foray in Epping Forest on Saturday next, October 24th. The trains will leave Liverpool Street station at 10.9 A.M. for Chingford, and 2.10 P.M. for Loughton. The route will be through the Green Ride and High Beach to the "Robin Hood" by the early train, where the afternoon party from Loughton can join at from 3.15 to 3.45 P.M. Dr. M. C. Cooke, F.L.S., Worthington G. Smith, F.L.S., Mr. J. English, Dr. H. L. Wharton, F.L.S., E. M. Holmes, Rev. J. McCrombie, and George Massee, are expected to be present. Mr. Collis Wilmott, F.R.M.S., of the Triangle, Hackney, is the Hon. Secretary.

— A JAPANESE has discovered a process of making PAPER FROM SEAWEEDS. It is described as thick in texture, and owing to its transparency can be substituted for glass in windows, and when coloured makes an excellent imitation of stained glass.

— "It requires," says an American contemporary, "a great deal of labour to run a LARGE VINEYARD. The proprietor of a raisin vineyard of 400 acres at Fresno, California, employs a force of 120 men to pick the Grapes, and will require this large number for a period of three months. His pay-roll for that time will average 3500 dollars per month."

— MR. J. HIAM, The Wren's Nest, Ashwood Bank, writes as follows respecting OUR MIGRATORY BIRDS:—"House martins are always the last to leave of our summer migrants. A few remained with us until Tuesday last. About forty broods have been reared here this summer. Swallows were noticed on Sunday, but not since. The redwings were here on Wednesday, nine days later than formerly noticed. A woodcock was seen near here at the beginning of the week."

— SINCE June our borders have had no finer plant than *ROSA RUGOSA*, with immense trusses of large, clear, brilliant rose-coloured flowers. The foliage is very handsome, but the hips are even more so, being produced in large clusters, and are of a brilliant crimson colour. They are very effective, rendering the plants beautiful in early autumn, and are useful for purposes of decoration. The white variety, *R. rugosa alba*, is not so free-growing, being more erect in habit, still it has been admired as much as the rose-coloured form. In the bud state the flowers are charming. Both ought to find a place in every garden, being suitable for the front of shrubby borders, the herbaceous border, or the rockwork.

— MR. R. OWEN, Castle Hill, Maidenhead, has sent us a bloom of an extremely handsome DOUBLE IVY-LEAF PELARGONIUM, which is one of the best and brightest-coloured varieties we have seen. The flower sent was 2½ inches in diameter, very full, and of a peculiar rosy scarlet hue, with a glossy surface, which has a beautiful effect in a bright light.

— THE same correspondent also wishes us to state that he was awarded a vote of thanks by the National Chrysanthemum Society for cut blooms of Chrysanthemums shown at the recent meeting in the Westminster Aquarium.

— THE NEW ENGLAND CROP OF APPLES promises to be larger than last year, and there continues to be a large supply of Apples in the market, especially from western New York. For the week ending Sept. 26th, shipments of Apples to Great Britain were 279 barrels from Boston, 10,146 from New York, and 559 from Montreal, making the total for the week of 10,984 barrels. For the season, the shipments foot up 27,232 barrels, against 64,792 for the corresponding period of last year. The last sales in Glasgow range from 3½ to 4½ dollars per barrel. Green fruit was neglected. In Liverpool prices were about 25 cents per barrel lower.

— THE first monthly dinner and conversazione of the HORTICULTURAL CLUB for the winter session took place on Tuesday last at their rooms, 1, Henrietta Street, Covent Garden. There was a large attendance, including Mr. John Lee (Chairman), Professor Foster, Rev. F. H. Gall and H. Flintoff, Messrs. Deal, Geo. Paul, Druery, Cousens, Collins, Stunfels, &c. The following new members were elected.—Rev. W. Willis, Shirley, Croydon; Messrs. E. B. Lindsell, Hitchin; Arthur Turner, Slough; W. H. Williams, Salisbury; Herbert J. Cutbush, High-

gate; and Geo. Bunyard, Maidstone. Professor Foster opened an interesting discussion on the "Germination of Seeds," which was continued by Messrs. Geo. Paul, Druery, Cousens, &c. The thanks of the members present were given to Professor Foster for his kindness in introducing the subject, and for the interesting facts brought forward.

— THE British colonies include the richest and LARGEST FORESTS IN THE WORLD, extending over millions of square acres. In India alone about 60,000 square miles are afforested, and the forests of Canada, Australia, New Zealand, and Cape Colony are second to none in size and the variety and value of their productions. The acreage under timber in France, Germany, and Great Britain is small and constantly decreasing. Of the 20,000,000 square acres of Scotland only about 700,000 to 800,000 acres are woodland.

— MR. GEORGE AUGUSTUS SALA is contributing to the *Daily Telegraph* a series of articles descriptive of Australia, the majority being readable and freely written letters. In a recent one on Adelaide he makes, however, an amusing BOTANICAL BLUNDER. He states that—"The site was, less than fifty years ago, literally a swamp, intersected by numerous small creeks and overshadowed by the maleficent umbrageousness of the Mangrove. That gruesome plant is said to shriek when it is interfered with by man. How the Mangroves must have bellowed when the practical utilitarianism of the last generation of South Australian colonists built up a commodious haven and a thriving town out of this quagmire." Is it possible that this usually accurate writer can have confused the British Mandrake with the tropical Mangrove?

— IN the production of ROSE BLOOMS for OTTO OF ROSES no less than 145 towns and villages are concerned. Under favourable circumstances 2000 lbs. of Rose leaves will yield 1 lb. of the otto, whereas at other times it will take no less than 5000 lbs. weight of leaves to produce the same quantity. The area required to grow the Rose trees to produce such innumerable quantities of flowers covers large tracts of country, and in order to save loss by evaporation after picking small stills are erected in the open fields. It is the more necessary to have the apparatus close at hand, as all the flowers for the same reason are picked if possible before sunrise.

— THE fourth annual report of the NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION contains a general report of the proceedings and several papers that have been read by the members during the past season, those on the education of young gardeners, the culture of the Chrysanthemum, and the culture of the Tomato being particularly good. The Association is making substantial progress, and now includes 258 members. The programme for the present season is as follows, the meetings taking place the third Friday in each month at 7 P.M., in the Young Men's Christian Institute, 198, Union Street, Aberdeen:—November 20th, "Climbing Plants;" James Cannon, East Seaton. "Dinner-table Decoration;" J. M'Kay, Westwood. December 18th, the Lessons and Experiments of the Year. 1886.—January 15th, "Should Science or Practice Obtain Most Prominence on Discussions on Horticultural Subjects." Science, A. Robson, 18, Market Street; Practice, J. Henderson, Wellwood. February 19th, "Rose Propagation;" A. Innes, Ruthrieston. "The Construction of Fruit and Kitchen Gardens;" J. Forrest, Haddo House. Meetings at 8 P.M.—March 19th, "The Origin and History of a Few of the More Interesting Cultivated Plants;" Prof. Trail, Aberdeen University. April 16th, "Formation of Hardy Fruit Tree Borders and Management of Trees;" P. W. Fairgrave, F.B.S., Dunkeld Gardens. May 21st, "The Action of Light, and the Colour of Flowers;" J. Taylor, Clashfarquhar. "Peas;" R. Farquhar, Fyvie. June 18th, "An Hour among the Lichen;" G. Murray, 115, Causewayend. The Secretary is Mr. William Reid, 8, Hadden Street, Aberdeen.

JUDGING GRAPES.

Now that this most important subject is being well discussed in the columns of the Journal, I trust that all who are interested will lend their aid in trying to solve this most difficult problem. Much good may be expected from having this subject thus freely ventilated through the medium of the press. Still, gardeners should not neglect to use their influence in having the subject discussed in the horticultural societies to which they belong. I think the subject could not have cropped up at a more convenient season, as there is still enough time to have the matter fairly discussed ere the majority of schedules and prize lists are prepared for the ensuing year. It only requires a few energetic and influential individuals to take the matter up in earnest, and endeavour to induce the

leading horticultural societies to adopt some method which would bring both exhibitors and judges to a better understanding.

For instance, if a committee were formed composed of men well known for their experience and success as Grape-growers to gather evidence and carefully consider the respective merits of all the varieties of Grapes generally grown in our gardens, to decide the maximum number of points each variety ought to receive, and to draw out rules for the guidance of judges and exhibitors, such rules to partake of a kind of national character and free to any society which might choose to adopt them, the society adopting such standard rules would, by printing them in their prize lists, give intending exhibitors an idea of the lines upon which their fruit was to be judged. Besides, it would to a great extent prevent judges displaying their individual tastes and fancies, which are often as wide and diversified as the localities to which they may belong.

On page 292 of the Journal of October 1st, under this heading, "A Kitchen Gardener," while comparing Alicante to Madresfield Court, indulges in some rather hard remarks and a prophetic announcement regarding the latter variety, which must raise the ire of every lover of this noble Grape. I could not help thinking, while reading the remarks referred to, that if "A Kitchen Gardener" is as ungenerous in his cultural treatment of this variety as his style of writing about it is, I do not wonder at it both splitting, cracking, and failing to set with him. Some time ago I read in the pages of the Journal of an exhibitor who had for four or five years in succession taken first prize with this variety for flavour (black) against all comers, and that, too, at the largest Grape shows in the country, where hundreds of bunches are shown annually. So much for its "standard quality." As for its appearance, I have always been led to consider Madresfield Court has the handsomest bunch of any Grape with which I am acquainted. At the September show of the Royal Caledonian Horticultural Society a magnificent example of this Grape was shown by, I think, Mr. Brown of Abercainey, in a class for any other black, which was considered by many as the finest bunch in the show—no mean honour considering that over 400 bunches were staged. Judging from its appearance it would weigh about 6 lbs., was well shouldered and beautifully tapered, compactly built, with large berries, no evidence of any having been removed through splitting, perfectly black to the footstalk, and with a bloom as dense as any Alicante.

Again, I know a large establishment where Grapes are exceptionally well done, where this variety is as much esteemed for general use as Black Hamburg, being found as sure a cropper, as free a setter, more handsome in bunch, keeps as long, scarcely ever splits, and is found to bring to maturity a heavier crop than the Hamburg. It has peculiarities, I admit. But what first-class Grape of recent introduction has not faults? Duke of Buccleuch, Golden Queen, Golden Champion, Muscat Hamburg, Mrs. Pince, Madresfield Court, and a few others, comparatively new Grapes, have each their peculiarities, and more difficult to manage than either Alicante or Black Hamburg; but are they to be discarded and denounced as worthless, as many writers are trying to do, upon this ground alone? I daresay that during the last twenty years more matter has been written in connection with Grapes than all other home-grown fruits together. And what is to be the result of it all? Is no greater success to be expected from us than was achieved by our forefathers fifty years ago, who, with thin old-fashioned pits and frames, could grow Black Hamburgs, and such varieties, as good as we can do now? or the amateur of to-day, who, with his little greenhouse, would put many of us to shame in growing these common varieties?—D. BUCHANAN.

I AM pleased to think of the regard Mr. W. Jenkins (page 341) has had for my writings, and I should feel still more exalted if he would give me full credit for what I have written on this subject. He says I "even dispute the superiority of Madresfield Court over Alicante, and this simply on the ground of the popularity of the latter." Now, let me ask him if this was the only ground I claimed for the superiority of the Alicante? "S," who deals uncommonly fairly with his opponents, remarks at page 320, "A Kitchen Gardener" defends Alicante vigorously, and ably states his reasons for doing so. I also gave my objections to Madresfield Court, and if Mr. W. Jenkins can see nothing more in my notes than the brief distinction of "popularity," I can only say he is making poor use of his Journal. It is new to me to know that Madresfield Court has become more popular this last year or so. I have seen it better shown in Mr. Meredith's time than I have ever seen it since. "The grand bunch" shown at Dundee and "again at Edinburgh" does not speak highly for its abundance.

Referring to your report of the Edinburgh Show (page 248), I observe in the collection of twelve sorts Mr. Hammond (first) exhibited "grand Alicante," Mr. McKelvie (second), "Alicante, fine." In eight varieties, Mr. Hammond (first), "Alicante;" Mr. Jenkins, Durham (second), "Alicante, fine." In four sorts, Mr. Boyd (first), "fine Alicante;" Mr. Hammond (second), "Alicante, fine." "Messrs. Hammond and Boyd took prizes for Alicante, both with grand examples." Here we have Alicante figuring in all the prize collections, but not a word as to Madresfield Court or "the bunch" referred to by Mr. Jenkins. The same thing is occurring at all shows, no matter where they are held or who is judging, and so long as imperfectly finished Madresfield Courts are shown against those grand Alicantes all the writing in the world would never bring prizes to the former at the hands of impartial judges.

I see Mr. Iggulden has got as far as Shrewsbury in his crusade against this blind and foolish judging, but if I might be allowed to offer my candid opinion, I would say he is getting beyond his depth and including that which lies quite outside his experience. Unless it be Mr. Iggulden

no one will agree with Mr. Jenkins that the Black Hamburgh cannot compete with Madresfield Court as a summer Grape.—A KITCHEN GARDENER.

THIS discussion seems in danger of ending, as others before it have done, in personalities, which are no aids to the decision of a question, and which only tend to lower the tone and weaken the effect for good which free expression of opinion and experience otherwise would have. I hope, however, that the little symptoms of personalities which have already displayed themselves may be nipped in the bud by the good sense of the controversialists, and even if that does not promise to be the case, that the editorial curb will be applied in time. My only aim and object in taking part in the discussion was the advancement of what would benefit Grape-showing and judging, totally apart from any personal desire to either appear as a "clever" arguer, or as evading important questions when put to me, as Mr. Iggulden seems disposed to think.

Whatever comes of the present discussion, I hope it will be clearly understood by Mr. Iggulden and those who side with him, that I have no desire to champion the Alicante against the Madresfield Court in a blind or bigoted way. When I said that, "other points being superior," Alicante should get the award at an autumn show in a competition for any black Grape, even when brought face to face with Madresfield Court, which at that time would be superior—much superior, I admit—in regard to eating qualities, I simply said what I honestly think.

As long as prizes are offered in the way they are, "in season" and "out of season" distinctions will always bring about controversy. Judges must be allowed discretion in the matter, and I believe that the cases where gross injustice is done, as some would have us believe, are very rare indeed. Let there be, if it can be managed, entirely distinct classes for summer and winter Grapes at our shows. Let Alicante, Lady Downe's, Gros Colman, and other late kinds never be brought into competition with Madresfield Court, &c., and then a difficulty would be swept away. Prizes may be offered for late Grapes at autumn shows—as there will always be some growers who think they may be shown then—but keep them distinct and do away with "any other black class" if it is to be the cause of controversy.

In collections of fruit shown at our autumn shows, something the same would need to be done in regard to the varieties of Grapes shown in them. We see often a first-prize collection which has all or nearly all its Grapes composed of late varieties, which according to Mr. Iggulden should not be shown then. Collections of fruit must be in future only made up with those "in season" if the views of Mr. Iggulden and others are to prevail, or two classes be made, one in which the Grapes would need to be "in season" and the other in which late Grapes might find a place.

There can be no doubt that to exclude all late Grapes from early autumn shows would raise as much controversy as this question of "in season" and "out of season" has done. It remains, therefore, that the best that can be done is to make some re-arrangement in the classes to obviate this difficulty as far as possible, and also, be it remarked, that judges of experience and skill be in all cases chosen, so that there may be no occasion for after remarks and reflections. Those who would publicly denounce the judgment of men who are known to be without fear and without reproach, especially when their judgment has been made somewhat simpler by a slight re-arrangement of classes, are so very few that I venture to think they would never appear.

I do not forget that there are many Chrysanthemum shows held in England during November and December, but in Scotland such is not the case. This November there is to be an Apple Congress in Edinburgh, at which opportunities for displaying Grapes "in season" may be had, but I am not aware if there are any—or, if any, very many—prizes offered for Grapes, and this Congress is entirely exceptional. From September till March in Scotland there is as a rule no chance of showing Grapes at flower shows. Can it be wondered at, then, if there are numerous exhibits of late Grapes in September, especially when prizes are freely offered for them?

But Mr. Iggulden would have me believe that at these English Chrysanthemum shows there are plenty of opportunities, and much encouragement given for the display of Grapes "in season." Now I read in your Journal for October 15th some suggestions for the encouragement of Grape-showing at January Chrysanthemum shows, a time when late Grapes generally may be considered "in season." They certainly are not all, or nearly all, "in season" in November when the bulk of the shows are held to which Mr. Iggulden draws my attention. By "in season" of course Mr. Iggulden and others will understand the time when Grapes are at their best for the table. These suggestions for prizes for late Grapes in January are remarked on as being something novel, and therefore justify my remarks on the paucity of opportunities hitherto afforded for showing late Grapes at proper times. Even at the Chrysanthemum shows held in November and December I am disposed to doubt if there are as many inducements held out to Grape-growers to exhibit as Mr. Iggulden would wish to make out. Until there are many more opportunities afforded in November, December, January, February, and March for the proper display of late Grapes, I maintain that to discourage their exhibition at autumn shows will be considered a mistake; and this I do at the risk of being told that my arguments are "sentimental and worthless."

Mr. Iggulden seems anxious to account for the great popularity of Alicante. I think he may do so by calling to mind the fact that Alicante, while, to quote Mr. Iggulden, "fit for the table" in October—though I would rather say end of November—keeps plump and fresh till April, and thus allows one to "cut and come again" without the fear of finding

a "burst up" in the way of wholesale cracking, as is too often the case with Madresfield Court.

Certainly no one with much taste would care for Alicante in October, when so many other Grapes are to be had; but there comes a time when it may be deservedly appreciated. At the present moment we have both Duke of Buccleuch and Black Hamburgh in splendid condition for the table, the former being golden coloured, with a rich lusciousness which cannot be excelled, if even attained, by any other Grape. As long as these last no one with any taste would think of taking the late Grapes in preference; but the latter have their value at the proper time, and are therefore duly prized.

It may be remarked that as a rule early-coloured late Grapes keep much better than those which are behindhand in that respect. This is the reason why they are in general started and forced along, so that they may be black in September, and not because, as some of your correspondents seem to think, they are wanted for showing in September, and for that alone. Experience has taught that early-coloured late Grapes are best. When prizes are offered in September, why should fault be found with those growers who have successfully coloured their late Grapes at that time—sure augury of their having Grapes that will keep—and who respond to the invitations of the prize schedules? No reasonable employer will ever grudge the cutting of a few bunches of late Grapes in September, when he is well served by his gardener, and knows that there is a good general crop to rely upon for the winter and spring, as there should ever be with those who exhibit.

Prohibit late Grapes entirely if you like from early autumn shows, if thereby Grape-growing will be improved. I for one would then not object. But until such provision can be made as would insure the exhibition and proper appreciation of late Grapes when "in season," I think it a pity to talk about excluding them from autumn shows because they are not "in season." Does Mr. Iggulden mean to assert that at the Chrysanthemum shows to be held in November and December there are prizes for late Grapes equal to those which every autumn show offers in all quarters of the land? I am afraid he cannot prove that sufficient inducement is held out at the present time, whatever may come to pass. However, I trust the outcome of the present discussion will be nothing but good, and that Grape culture may be stimulated and not discouraged by the different opinions expressed. I now take leave of the subject for the present.—S.

CHRYSANTHEMUM NOTES.

POPULARITY OF CHRYSANTHEMUMS.—Once more the season has rolled round, brimful of expectation. The anxious exhibitor is looking forward to the time when he hopes to recoup himself for his past year's labour and watchful care. Not in a pecuniary sense would he ever expect to be paid, but in the pleasurable anxiety in watching the unfolding of the flowers of the old favourites, and the anticipation of the characters of the newer varieties. The zeal and enthusiasm thrown into the cultivation of the Chrysanthemum in some districts can scarcely be exaggerated. We have heard of the same thing with the old school of florists, but we in the south never hear of a complaint called "the Tulip fever," or "the Auricula fever," but the Chrysanthemum fever is now very prevalent, and very contagious both amongst gardeners and amateurs when once it gets in a district.

THE SEASON—EARWIGS.—This year I anticipate will prove no exception to the rule; indeed, the increasing number of exhibitions and the extra amount of prizes will help and keep alive the interest amongst the older growers, and each year adds new recruits to the ranks of cultivators. Whether the exhibits this season will be up to the usual standard remains to be proved; it is rather too early to say, as much depends on the weather during the next fortnight, but certain is it the season has so far been most fickle. The early part of the year was favourable to a good growth, as the weather was so mild that the plants could be exposed to make them sturdy. Then the long spell of drought brought green fly, which was very prevalent in the neighbourhood, and also seemed to favour the production of an extra amount of earwigs, which throughout the autumn have been very troublesome. One noted grower in this neighbourhood has filled a pint and a half bottle with them in this way. A quantity of short pieces of bean stalks have been stuck in the rows of plants, and every morning these have been blown into a bottle which had a small quantity of salad oil put in at first; this kept working up as the bottle filled, and suffocated the insects as they were put in. There is not the least doubt but that these earwigs do much damage to the young shoots and buds in an early stage, and cause many deformed flowers, and if not well looked after now will soon damage a good bloom by eating away the base of the florets. If any loose florets appear lying about under the plants of a morning it is a sure indication that one has been to work in the night. The best plan is to search the plants every night by candlelight. It needs a quick action to catch them, as they have such a knack of slipping off the plants at the sight of a candle, and lying motionless on the ground.

EARTHWORMS—MILDEW.—Earthworms in the pots are another troublesome pest, especially where the extra precaution has not been taken to grow the plants on boards or tiles throughout the summer. These disturb the roots and cause the flowers to be thin and weak. A good nob of fresh unslacked lime put into a two-gallon watering can and left to settle will make sufficient lime water for a good number of plants, which is the best thing to use to kill the worms in the pots. Mildew will appear more especially on high-fed plants. The best remedy is sulphur, which should be dusted over at the first sign of it. Some varieties seem more susceptible to this than others. Val d'Andorre of the Japanese, and Triomphe du Nord, and also Dick Turpin amongst the Pompons, are the only varieties that have given me any trouble this season.

NEW VARIETIES.—Of the new varieties it is yet too early to speak, but I shall be much mistaken if there are not some good additions as to colour and size in the Japanese class. Madame de Sevin is very promising, and I think will be a good addition. Trizon is a good colour, but I am afraid too small for exhibition. Cullingfordi is unfolding well with me, and I shall be disappointed if it does not come large enough to be included in the Japanese section, it is such a grand crimson colour. Then John Laing promises well for a good deep flower and a good colour, but like Mons. Mousillac, rather short in the petal. My favourite amongst the comparatively new varieties is Mons. Henri Jacotot, and I shall be surprised indeed if after this season it does not become a general favourite. It is a grand colour, crimson, of good size, and very certain. Of the others more anon as the season gets on.—C. ORCHARD, *Coombe Warren*.

CHRYSANTHEMUMS AND THE FROST.—Like "J. L. B." I, too, had been waiting to read accounts of the damage done to Chrysanthemum by the frost of September 27th before I recorded its effects, which I regret to say are serious, for the majority of the plants are more or less injured according to the stage the bud was in. Not expecting the temperature to fall to 24°, as it stood at 35° at eleven o'clock on Saturday night, I had only housed the earliest plants showing colour, when on Sunday morning a sight met my eyes I shall never forget. To have seen in September Chrysanthemums blackened by one night's frost, especially in the case of the Pompons, also Meg Merrilees and Peter the Great (Japanese). Scarcely a flower of the Pompons will open, they look as though they had been near a fire and got scorched. The large varieties are now showing the effects, since they have been housed a fortnight. Many of the crown buds are quite decayed; others are attempting to force out a few outside petals, but the centres are gone; some had the footstalks injured and, becoming soft, the buds hung down. In the case of Princess Teck and Meg Merrilees the buds were killed, so that I have cut the plants down together with many others.

They were all arranged in rows 3 feet apart on a piece of ground covered thickly with ashes in a situation open to the south, east, and partly to the north-east, sheltered on other sides by the plant houses, it being the only vacant space available here for the purpose. The district is low and damp. Dahlias, Pelargoniums, and all other tender plants shared the same fate.—A. A., *Mitcham*.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL MEETING.—The annual general meeting of this Society was held at the Old Four Swans Inn, Bishopsgate Street, on Monday, the 19th inst., when there were over thirty members present, Mr. E. Sanderson presiding. The minutes of the last general meeting were read by the Hon. Secretary, Mr. Wm. Holmes, the Society then proceeding to elect new subscribers and transact other business. It was stated that there are now over 290 members, and that sixteen provincial societies have become affiliated with the National, medals having been supplied to those who desired them. The Secretary read a letter from one correspondent in which it was proposed that the National Society should form a list of competent judges for Chrysanthemum shows and recommend them in rotation to such societies as required their services. No action was, however, taken in the matter. A sub-committee was then appointed to frame rules for the guidance of the Floral Committee. Mr. Wm. Holmes referred to the proposal that classes for late Grapes should be provided at the Show of late Chrysanthemums in January, and stated that the Society's funds would not admit of prizes being offered for the purpose named, but that he would be pleased to co-operate with all who are interested in the matter if a special fund could be raised. The meeting concluded with the usual votes of thanks to Mr. E. Sanderson, Mr. Wm. Holmes, and Mr. Ballantine.

CHRYSANTHEMUM SOCIETIES.—The Lambeth Amateur Society

will hold their Show in the Hawkstone Hall, Westminster Road, November 3rd and 4th, and a satisfactory display is expected, though the date is somewhat early. Yeovil Show takes place on November 17th; Havant, November 5th and 6th; Walton, November 12th; and Wimbledon, November 17th. The schedules including the usual prizes.

LONDON EXHIBITIONS.—The Exhibitions at the Inner Temple and Finsbury Park are now open to the public, but are not yet at their best. A week of fine weather will, however, make much difference.

CUTTING DOWN APPLE AND PEAR TREES.

It is known, and the fact is sometimes acted upon, that by cutting down old Grape Vines young ones are produced from the old stumps, which yield much better crops than could be obtained previous to this surgical treatment. It does not seem to be so generally known that the same operation may be advantageously carried out on old worn-out Pear and Apple trees to renew the vigour and bearing qualities of the tree. I have seen old trees with gnarled and knotted stumps, which for years has been fruitless, or occasionally so far fertile as to bear a few fruits of the poorest quality, after having been cut over send up strong, healthy, and fruitful growths, which bore large crops of the best quality. One of the Apples most subject to canker in the garden here is Cellini, yet I have cut a tree of this in the most robust health, which previous to this treatment was, to all intents and purposes, entirely worthless. We have a Pear tree which was apparently in robust health, yet year after year failed to set a fruit; by the simple process of cutting down a portion of the branches and the fresh young growth resulting therefrom, has for several years back regularly borne crops. In this case it was not necessary to cut every branch, and we find that by an occasional judicious cutting out of the main worn-out branches in bush Apple trees, that the few strong young growths thus encouraged impart a fresh vigour and fruitfulness to the whole tree. We have a curious commentary supplied just now, by a tree treated in the above manner, of the failure of grafting another variety on to a worn-out tree to do more than secure that object for a time. The scion is of the variety Hoary Morning, which having become rather worn-out had some of the branches cut well down to the base of the stem. Instead, however, of the same sort coming away, the result has been strong shoots of a later dessert variety of very heavy cropping proclivities. Of course there can be no objection to grafting good varieties on to poor ones, but I have no doubt that in this case, as so very often happens, the closely pruned branches had become comparatively barren, therefore condemned, and another sort forthwith grafted on to it. If the branches had been cut down and not grafted the tree would have been carrying large crops much quicker than it was possible for it to do when grafted.

Root-pruning has become a common practice as a means of restoring old trees to fruitfulness. Now, while it would be wrong to condemn this practice as unnecessary in all cases, at the same time no doubt much unnecessary labour is expended in carrying out this work in a scientific manner, keeping the greater part of the outdoor staff employed during the best portion of the winter months with results by no means commensurate to the outlay, when a judicious thinning-out of some of the main growth and the encouragement of young ones to replace, would have secured the end in view much more effectually and cheaply.

As there is no better time than the present to operate in the direction, and for the reason indicated, those who have trees either of Apples or Pears in an unsatisfactory condition would do worse than experiment a little in cutting down. I am perfectly certain from my own experience, and from what I have seen elsewhere, that there exists no cheaper, quicker, or more effective means of securing fruitful healthy trees than this one. If a garden is well drained and produces good vegetables there is no reason why it should not also produce good hardy fruits, provided plenty of vigour is kept in the trees by a systematic production of young growths following the removal of that which is exhausted and therefore barren.—B.

NYMPHÆA DAUBENIANA.

It would be impossible to say too much in praise of this neat and beautiful Water Lily. Among all the Nymphæas here none have been admired more this season than this one. Often we have had seven fully expanded blooms on a plant, the largest measuring from 7 to 8 inches. It is a most persistent and free-blooming variety, being in flower from May to October. The colour of the petals is a sort of creamy white suffused with violet, the centre is orange, and the stamens also are orange tipped with violet. It has a most deliciously fragrant perfume, which it is quite impossible to describe. It is the sweetest of all the Nymphæas. It may be easily cultivated in an ordinary stove provided it gets a moderate amount of light, and the temperature of the water is maintained at 70° or 75°. A tub from 2 to 3 feet wide and 12 or 15 inches deep is quite sufficient for its requirements. Place about 2 inches of crocks on the bottom of the tub, and on these about 8 inches of good loam mixed with a little decayed well-seasoned cow manure. In planting care should be taken not to bury the crown of the plant too deep. Warm fresh water should be added to the tub three or four times a week. It

must be kept clear of insects by syringing, and of sediment and decayed leaves. This species does not produce suckers freely, but is easily propagated in spring either from the leaves or division of the old root.—O. THOMAS, *Chatsworth*.

[We were surprised to find that the cut flowers kept fresh and frag-

out of doors, yet it requires to be flowered in a greenhouse to have it at its best, the flowers opening so much better and of a purer white under glass than in the open. Indeed, plants used for room-decoration in positions away from direct light have produced the best flowers I have seen. For the above purpose no plant is better adapted, standing as it does the rough-and-ready usage of house-work better than any other



FIG. 56.—*NYMPHÆA DAUBENIANA*.

rant in water for ten days, opening and closing at intervals, and diffusing a perfume somewhat like Violets, but richer and more powerful.]

NICOTIANA AFFINIS.

THIS is one of the best decorative plants we have, and, judging from what I have seen, is not nearly so well known as its good qualities entitle it to be. My experience with it is that, although it will grow and flower

flowering plant I have tried. It also adapts itself in the most convenient manner to any size that may be wished to grow it. I have had little plants in 3-inch pots which have come in as useful as larger plants with twenty times the amount of bloom. The best way to use the plants is to dot them amongst those which are much dwarfer, a few specimens quite altering the appearance of a group of plants, and that for the better.

It is so easy of cultivation that a few lines will enable me to note the salient points thereof. I sow the seeds in March, in heat. The seedlings

are pricked off when large enough into boxes, and in due time placed singly into 3 or 4-inch pots and grown on in cold frames. Good plants may be produced by shifting again into 7-inch pots; and extra large ones by another shift into those 10 or 11 inches across. The soil used for them is a good loam enriched with a third of cowdung and a sprinkling of bonemeal thrown. Plenty of water must be supplied in all stages and as required. Manure must be given either in the water or on the surface to be watered in. The plants are best grown on out of doors until the flowers begin to open, when they will be greatly improved by being placed under glass to expand. It may be noted that the flowers, though scentless in the daytime, are sweetly scented in the evening.—B.

SCRAPS ABOUT FRUIT.

Now that we have such an excellent hardy fruit season it would prove highly interesting to fruit-growers in all parts of the kingdom if the Editor would kindly devote a small portion of its columns to publishing short notes or scraps on hardy fruit, similarly to the method adopted in these pages a year or two ago. Such would enable growers to have an interchange of opinions on the merits of the different varieties of fruit, which could not fail to be of great service, independently of the advantages of the Pear Congress, to the numerous readers of the Journal. I give two for a start, and hope the example may be followed by others.

GANSEL'S BERGAMOT PEAR.—A capital variety for growing on the cordon system. With us it is a free grower and a good cropper, and yields large handsome and highly coloured fruit, with white buttery flesh, and a very juicy, sugary, and delicious rich flavour. Grown as a pyramid it is very inferior as regards flavour except in the more southern districts. It requires to be grown against a south or west wall to bring out its beautiful colour and delicious Bergamot flavour.

BEURRE D'AMANLIS.—Another valuable September Pear suitable for cordon training. Grown on a wall, same aspect as the preceding variety, a cordon 8 feet long bore eighteen large handsome fruits, which were of a deliciously melting, buttery, and rich juicy flavour. This variety is not so well adapted, in our experience, for pyramidal training, being of a too straggling habit of growth.—T. W. S.

THE GLADIOLI AT SOUTH KENSINGTON.

I DO not think that the remarkable collection of Gladioli shown by Mr. Campbell of Gourock, N.B., should be passed over with the short notice given in last week's Journal, for I have no hesitation in saying that it was the most remarkable collection ever exhibited (in the south of England, at least) in the middle of October, and reflected great credit on the grower, both for the character of the blooms and for his enterprise in bringing them up such a distance and setting them up in such grand condition. As I have seen almost every exhibition of these grand flowers and am the oldest amateur grower of them in the kingdom, I feel that I may speak with confidence about them. The Royal Horticultural Society gave them the highest award it could do, but it ill requited Mr. Campbell for the expense and trouble he had been put to in bringing them up to London.

When I said they were remarkable for the middle of October, I do not mean to say that there was any need of excusing them in any way on account of the lateness of the time when they were exhibited. On the contrary, on comparing them in my mind with what Mr. Campbell exhibited at the Crystal Palace five weeks or more since, I believe that they were fully equal to those then exhibited. When you get spikes with ten or twelve expanded blooms bright and clean in colour, I do not think that any excuse is needed for them, and that was the case with those exhibited on Tuesday last. The same feature, too, was as noticeable now as then, that many of the older varieties which many had thought had been entirely superseded were exhibited in such form that one will have to "hark back" to them again.

Amongst the best of the varieties staged were the following:—Adolphe Brongniart, rose tinted orange, an old flower, but still one of the best; Africaine (1878), slaty brown on scarlet ground with white centre; Amalthee, pure white tinted violet, a long spike well arranged, and, although out some years, still valuable; Anna, cherry, tinted orange, carmine stripe on white ground; Archduchess Marie Christine (1879), white tinted lilac, flamed rosy carmine, a fine large flower; Baroness Burdett Coutts (1879), delicate lilac tinted rose, flamed rosy purple, a large and striking flower; Belladonna, white tinted clear lilac, lower petals striped bright carmine; Caméleon (1880), steely lilac, flamed orange, white lines; Coïenne (1880), rosy carmine, shaded cherry, creamy white blotch; Crepuscule (1883), a long spike, but somewhat too narrow; Dalila (1880), one of the best grown, bright rose, streaked and flamed carmine, large pure white blotch. There were several spikes of this with ten and eleven expanded blooms. Delicatissimus, an old flower, but pretty, white flamed and edged carmine; De Mirbel, fine rose, tinted lilac violet; Dumont D'Urville (1879), very long spike, bright cherry; Flamboyant (1881) fine spike of bright scarlet flowers, a very remarkable variety; Hesperide (1878), white ground, flamed rosy salmon; Leandre, lilac, slightly shaded carmine, white lines, large white blotch; L'Unique Violet, dark lilac, tinted violet, flamed dark violet; Marquis of Lothian, flowers fresh, rosy lilac, good form and substance, a northern flower raised in 1875, very robust; Meyerbeer, brilliant red, flamed vermilion, an old and fine flower; Murillo, rosy cerise, white lines, white throat, good; Psyche, clear light rose, flamed light carmine; Roseus perfectus, rose tinted violet; Samuel Jennings (Kelway, 1880), scarlet, with white

blotches on lower divisions; Tour du Monde, dark cherry red, white blotch, edged lilac.

It may be asked, How could such flowers be exhibited in such condition after the severe and stormy weather we have lately experienced? It is astonishing how much of this rough weather the Gladiolus will stand without injury if they are properly staked, but in this instance these flowers had been covered by wooden cases made expressly for them, and by means of which they are protected from all weathers. I do not, of course, know what is Mr. Campbell's mode of culture, but whatever it may be he has safely established himself as one of the foremost cultivators of this grand but capricious flower.

I cannot forbear saying what a splendid flower it is for cutting, and what a prolonged season of bloom one can have. I only planted some 400 corms, and yet from the middle of August I have had a succession of fine spikes, and I, this day, Oct. 17th, cut, I suppose, the last of them, although I see a few others which may yet flower; nor were these I cut to-day poor things, but really good spikes with a number of finely expanded flowers of good substance and bright colour.—D., Deal.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE CABBAGE.

LIKE that useful vegetable, the Potato, the demand for which is little affected by the diatribes of some modern philosophers who regard it as comparatively innutritious, the Cabbage, in one or other of its varieties, is to be found upon dinner tables all the year round. The circumstances of the growth of most of these render them very liable to the insidious attacks of insects, and there is not a month from January to December during which some species is not getting its subsistence off a Brassica that is under garden cultivation. A considerable proportion, however, of the Cabbage-loving insects are easily kept under by a moderate amount of care, and others less readily detected are seldom numerous enough to cause serious damage. Needless alarm has occasionally been excited amongst the growers of Cabbages and kindred vegetables by reports concerning destructive insects, circulated in ignorance of the fact that generally each species keeps to its particular food. Thus in 1782, when the caterpillars of the brown tail moth swarmed in several counties, an apprehension arose that they would lay the kitchen gardens bare, because people did not know they fed only on fruit trees. Also it has happened that when a few specimens of the great green grasshopper have wandered from field or hedgerow in amongst the Cabbages, a gardener has regarded them with disgust, on the supposition they were the pioneers of a hungry company of locusts.

In referring to the insects that commonly occur upon Cauliflowers, we have given an account of the caterpillars of the great yellow underwing (*Tryphæna pronuba*) and of the abundant Cabbage moth (*Mamestra brassicæ*), concerning which it will not therefore be needful to say more here than that there are few seasons when these insects are not observable in our gardens, though sometimes their numbers may be comparatively small. Also, we have named the small white butterfly (*Pieris rapæ*) as an insect which in its larval state presses to the heart both of Cauliflowers and Cabbages, yet from its habits and size is a less serious enemy to our plants than is its relative, the large white (*P. brassicæ*), an object pretty enough while it is on the wing in the summer sunshine, but too pernicious amongst vegetables to get much encouragement from us. Yet personally we must confess to a bit of sentimentalism which makes us loth to kill a butterfly, and there are other ways of keeping this species under even more efficacious. Like the small species, it is flying about as soon as winter has departed eager to deposit eggs, and caterpillars of the autumn brood may be taken until the end of October in the kitchen garden or on Cruciferous plants in the flower beds. It is scarcely necessary to describe so abundant a butterfly as this, but the fact should be noted for the benefit of those who may incline to destroy the perfect insect, that the females have several black spots scattered over the wings, which are lacking in their male companions. Since the eggs are deposited by the parent flies in clusters of three or four to a dozen, they may be found upon the leaves of Cabbages (and also upon Mustard and Turnip) during May, and by picking them off a check is given to the increase of the species at an important period. These eggs are yellow and ribbed, standing up on the leaves like tiny ninepins; the first business of the juvenile caterpillar is to devour its eggshell. If left undisturbed the period of caterpillar growth occupies about a month, on any alarm they drop hastily from the food plant, though, as Newman pointed out, they return almost exactly to the spot they quitted after the danger appears to be over. That velvety aspect displayed by several caterpillars of this genus is not discernible in *P. brassicæ*, which is bluish green above, paler below, and lined with yellow; all over the body are warts, each topped by a hair.

Having had these caterpillars repeatedly under observation, I was at one time inclined to think that there were three broods each year, not two only, as is the general statement of British entomologists. For it is certain that in most counties there are but very short intervals during the season when we fail to perceive them upon some Brassica

in field or garden. I conclude now that there is a succession belonging to both the spring and summer broods, their appearance being gradual, so that while young caterpillars are feeding, hatched from eggs laid by butterflies early out of the chrysalis, more butterflies are emerging from that stage of life. It is probable some of the chrysalids are destroyed by birds, because the insect thrives most where there are plenty of places in which it can find concealment during the period of torpidity amongst palings, walls, and the like. Hide as it may, however, a tiny parasite (*Pteromalus Brassicæ*) finds the chrysalis when yet soft, and depositing a hundred or more eggs thereupon renders its appearance as a butterfly impossible. Equally valuable to us are the services rendered by another parasitic fly called *Microgaster glomeratus*. This attacks the caterpillar before pupation, and numbers of them may be seen upon walls, shrivelling up in a vain attempt to transform, while soon after their bodies are covered with the yellow silky cocoons spun by the fly maggots. Some persons who really ought to know better take these to be the eggs of the caterpillar, and so they crush them, thereby killing the germs of a friendly insect, for the influence of these flies in keeping the species under is considerable.

All chrysalids seen should of course be removed. Many may be found from autumn to spring, and again in June those producing the second or summer brood are about. Proceedings against the caterpillars may be taken in various ways. Some gardeners have employed, it seems, children to pick them off, paying so much a pint for the caterpillar carcasses; this cannot well be done except in a limited area. Dressings that would destroy caterpillars on many plants are not, for obvious reasons, suitable of application to Cabbages; watering them with brine, lime water, or weak soapsuds might be safely tried, and the effect of simply drenching the plants with water is good, the colder it is the better, since it produces a very injurious effect upon the caterpillars, they are unable to eat, and die off speedily.

Allied to the Cabbage moth and placed in the same genus is the species called the Dot (*Mamestra Persicaria*). The moth is of a dark or chestnut brown, with a conspicuous spot of white upon the fore wings, hence the English name. The caterpillar is rather given to wander from plant to plant, feeding on various species in the flower or kitchen garden, and it has been taken upon Cabbages during July and August. When adult it is $1\frac{1}{2}$ inch in length, greenish or brown, the head being small and glossy; on the sides are a series of markings resembling the letter V, with the point directed towards the tail. It is one of those caterpillars that are frequently devoured by birds. A rarer species of this group, *M. albicollis*, is occasionally found as caterpillar on Lettuces and Cabbages; it favours the west of England.

Although *Hadina oleracea* has, beside another familiar name, received that of the pot herb moth, it is commonly reared upon such wild plants as Nettles and Docks, but still sometimes makes an irruption upon our gardens, where the caterpillar hides at or just above the roots of several vegetables of low growth, including the Cabbage. It is much lighter in colour than that of the Cabbage moth, usually green, marked with black and white, feeding in August and September. As a remedy, diluted gas liquor may be poured round the stems of plants, or soot, lime or ashes wetted with oil of tar sprinkled upon the soil. We must at least mention the caterpillar of the silver Y moth (*Plusia Gamma*) as an insect that may be taken feeding upon Cabbages. It is what is called a half-looper, having only twelve feet, grey in colour with lines of pale yellow, but seldom troublesome in Britain. On the Continent it positively swarms in some kitchen gardens, devouring every plant that is accessible.—

ENTOMOLOGIST.

NOTES UPON DAFFODILS AND NARCISSI.

It is doubtful whether any flowers are more popular than these. At the present time the general demand for them is enormous, and has been for several seasons past; but an immense impetus was given to a previously large trade by the Daffodil Conference held in London in April, 1884, when a magnificent display was made. Previous to this they were admired by a large circle of enthusiasts, but the number has greatly increased. Many amateurs, however, are not satisfied with some of the bargains they purchase; cheap offers of Daffodils are taken advantage of, but when the flowering season comes, the wild *N. Pseudo-Narcissus*, collected, may be, direct from some meadow or wood, is found to be the one in the garden, and a disappointment is experienced. The price of many of the best varieties is much against their cultivation. We may hope they will be within reach of most of the flower-loving public at some time; meanwhile, much greater discrimination might be exercised in purchasing the cheaper but really beautiful kinds in limited quantities for garden decoration, rather than spending even small amounts upon one common variety. No wonder

Daffodils are so popular when we consider their hardy constitution, time of flowering, and their value as garden ornaments and for floral decoration. If a good selection is made a long feast of their beautiful forms may be enjoyed for many weeks of the spring season, beginning with the little *nanus*—often called the "Fairy Daffodil" in Ireland—and *obvallaris*, and ending with the later varieties of *N. poeticus*. Their value in a cut condition can scarcely be over-estimated.

The demand for some varieties is enormous. For instance, I knew one grower who sent not less than 500 dozens of *N. poeticus ornatus* to one florist in Scotland the day before Good Friday last, and every one were sold; and turning to some correspondence I have upon the subject I notice that one grower in the Scilly Isles sent off, mainly to London market, not less than 2000 dozens of the same variety during Easter week, while as many as 8000 dozen blooms, of only a few kinds, were despatched in one week by the same grower, and all realised a remunerative price, so much so that their culture is being largely extended, about five acres of land being now occupied with them. One word of advice is useful on this point. They should be cut in an advanced bud state, and expanded in water, if in a warm room or greenhouse so much the better; the flowers will be much larger, cleaner, and last longer than if allowed to remain upon the plants until quite expanded. This is an immense advantage, especially when required for sending a long distance; the forward buds can be cut, stood in water for a time, and then pack for travelling.

A few words as to the best method of growing Daffodils may be useful now, as this is the season for planting. As little delay as possible should be allowed now, as it is quite time the bulbs were under the surface. They can be arranged in clumps, lines, or separate beds. I much like to see them in separate beds even if small, but as that method occupies a large amount of space when a large collection is dealt with, it cannot be generally commended. I have many thousands, all of which are arranged in lines in beds about 4 feet wide. Clumps are very convenient for borders, but it is necessary to label carefully and to mind the tallies are not lost. The *Polyanthus* varieties do best in a warm sunny position as well as the silver Trumpet varieties, such as *moschatus*. All require a well-drained soil, well enriched with rotten manure; that from a stable I have found most satisfactory. A deep stirring of the soil is needful, and the manure should be placed beneath the bulbs, a little soil being put between so that they are not in direct contact with it. This means a little extra trouble, but the result is more than commensurate with the labour incurred. Big bold Daffodils will be the reward, as well as unusual bulb-development, which in the case of choice forms means much. Under this treatment my stock of *Empress* doubled itself in one season, while 300 bulbs of *poeticus ornatus*, planted last autumn, produced when lifted in July last 930 bulbs, none very small, and many much larger than the originals.

Usually we call all the *Narcissi* Daffodils, but this is not quite right. I think the term should be applied to the Trumpet series, of which our wild *N. Pseudo-Narcissus* is the type, while all the rest should be called *Narcissi*. Mr. Baker of Kew has made a very simple arrangement of the genus into three groups—viz., 1, *Magni-coronata*, or Large Trumpet section, in which the trumpet is very large, and which at one time were classed under the generic name of *Ajax*; 2, *Medii-coronata*, or Medium-cupped, including the peerless Daffodil of Parkinson (*N. incomparabilis*) and some others; and 3, *Parvi-coronata*, or Small-cupped, the true *Narcissi*, of which the "Poet's Narcisse" is the type. There are many hybrids in each section, between individual members of the same and between those of different sections, so that you get now a well graduated line from the smallest to the largest cupped section. Many are natural hybrids, and a very large number are the result of artificial cross-breeding, and further crossing is being actively pursued by enthusiasts at the present time. Most interesting it is, as there is not much difficulty attending it; but much patience is required, as some years elapse before a seedling produces its first blossom—five or six on the average. I hope to see three most interesting bulbs flower next season, as I believe them to be a successful cross between *N. Horsfieldi* and *N. triandrus*, two such variable kinds, that something odd may be expected.

It is extremely difficult to make a very rigid selection of these charming flowers to meet a general want. Everybody who wishes to grow them should see a good collection in bloom and make their own choice. I grow about 120 varieties, and made numerous notes at the time of flowering upon the best, with the idea of communicating them to the Journal earlier, but it is likely they will be interesting now that the bulb lists are being

examined. Taking the groups in the order previously named, I will make a few remarks upon the best varieties.—J. T. R.

(To be continued.)

THE NATIONAL PEAR CONFERENCE AT CHISWICK.

OCTOBER 21ST TO NOVEMBER 4TH.

THE Royal Horticultural Society opened yesterday (Wednesday) at their Chiswick Garden an Exhibition of Pears, which in extent and importance is second only to the extraordinary Apple Congress held two years ago in the same Garden. The season selected for the Apples was one that proved exceptionally favourable to that crop, and the present season was chosen for a Pear Show from similar reasons—namely, the general quality and abundant supplies. The result, as seen in the display now provided at Chiswick, is all that the promoters of the scheme could have wished, and more than was expected by many who could see the greater difficulties in the way of obtaining an Exhibition of Pears. Happily these have been surmounted. Gardeners and nurserymen in all parts of Great Britain have responded freely to the invitations, and, without the pecuniary temptations usually deemed indispensable, have provided an Exhibition of which all concerned have ample reason to be proud. These Congresses and Conferences possess that very agreeable feature, the combination of horticulturalists for a common benefit without the striving and struggling for money prizes that have in some cases almost rendered exhibiting a matter of business, and the numerous visitors who inspect this great Pear Show will not find their interest decreased by bearing in mind that it has been provided without offering a prize of any kind.

In round numbers about 6000 dishes of Pears are entered, occupying the whole of the large vinery and a spacious tent. The chief part of the display is of course in the vinery, where there are two wide tables extending the whole length of the house, and each bearing six rows of dishes. The side stages are also fully occupied, and the whole produces a wonderful display such has certainly never been obtained before at one time. In general effect Pears are less beautiful than Apples; there are few of the rich and varied colours which render the latter so charming, the brilliant red and crimson hues are wanting, but in their place we have some sober autumn tints, with a quieter beauty. Gold, with several shades of yellow and many browns, are the most noticeable, then there are innumerable shades of green, relieved in a few instances by a flush of warm crimson, all seeming suggestive of the falling leaves. In form there is more diversity amongst Pears, for we see gradations from globular fruits like Apples to long slender and elegant-looking fruits that would scarcely be thought to belong to the same family. In size also we find similar variations from pigmy Hesses and Sultans $1\frac{1}{2}$ inch in diameter to giants of the Belle Angevine type 7 inches high and 15 inches in circumference.

The practical horticulturist will, however, find much more than this to instruct him, for accompanying each variety is a card telling many important particulars besides the name, the stock upon which the variety is mentioned, the average fertility, and other remarks, of which the value will be readily understood. Thus the Pears most suited for particular districts can be seen at a glance, and gardeners are fully aware how much success is dependant upon a selection of varieties adapted for the locality. It is surprising how altered a variety becomes in unfavourable circumstances, and in the Show in question there are innumerable instances of this kind that well deserve attention. Upon this, indeed, and the correct naming of the varieties submitted to the Committee, the real practical value of the Conference depends. By chronicling all the facts so collected, and correcting the nomenclature, they will be doing the whole fruit-growing community an inestimable service.

Up to midday on Wednesday Mr. A. F. Barron and his staff of assistants were busily occupied in arranging the enormous number of exhibits, and anyone who saw the hundreds of packages and boxes arriving on Tuesday would have thought it almost impossible that order could so soon have been obtained from such a chaos. By late and early working the greater portion of the exhibits were ready for the inspection of the Committee by 1 p.m. yesterday. As, however, it was impossible for us to then obtain a full report for the present issue, we can only give a few statistics, reserving further notes until next week.

England, of course, is largely represented, contributions being entered from thirty-five counties. Wales, Scotland are also represented, but to a much smaller extent, while from Jersey, Guernsey, and France collections of considerable merit have been forwarded. Concerning the English counties several interesting facts we observed. Dividing them into eighteen southern and seventeen northern counties, the following are the respective number of dishes from each.

SOUTHERN COUNTIES.—Middlesex, 694; Kent, 538; Surrey, 521; Herts, 445; Hereford, 343; Essex, 225; Bucks, 200; Devon, 189; Wilts, 133; Sussex, 182; Hants, 102; Dorset, 110; Somerset, 30; Gloucester, 98; Berks, 84; Oxfordshire, 41; Bedfordshire, 20; and Monmouth, 30. Total, 3985 dishes.

NORTHERN COUNTIES.—Nottinghamshire, 159; Worcestershire, 140; Yorkshire, 105; Northampton, 80; Staffs, 55; Leicester, 50; Cheshire, 50; Hunts, 52; Rutland, 50; Shropshire, 25; Warwick, 12; Norfolk, 52; Suffolk, 25; Lincolnshire, 30; Lancashire, 35; Derby, 12; and Cumberland, 2. Total 970 dishes.

We thus see that from the southern portion of England there is four times as many exhibits as from the northern half, and the first seven of the counties represent a total of 2968 dishes, or about half the whole number exhibited. It may be remembered also that at the Apple Congress Kent took the lead in numbers; this time, however, Middlesex heads the list by 150 dishes, due in a great measure, no doubt, to the contributions from Chiswick Garden. The lowest number is from Cumberland, two exhibitors sending one dish each. The greatest numbers of exhibitors are from Middlesex, Surrey, and Kent, the two first with fifteen each, and the last with eleven.

There are 170 exhibitors, the following showing fifty dishes and upwards:—Royal Horticultural Society, 200; M. Leroy, Angers, France, 196; Messrs. J. Veitch & Sons, Chelsea, 150; Messrs. W. Paul & Son,

Waltham Cross, 150; Messrs. T. Rivers & Son, 150; Mr. G. Pragnell, Sherborne Castle Gardens, 110; Messrs. G. Bunyard & Co., Maidstone, 100; Mr. C. Turner, Slough, 100; Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, 103; Mr. Wm. Wildsmith, Heckfield Gardens, 90; Messrs. G. Paul & Son, Cheshunt, 80; Mr. Le Cornu, Jersey, 80; Mr. E. Cole, The Gardens, Althorp Park, Northampton, 80; Mr. W. Coleman, Eastnor Castle Gardens, Hereford, 90; F. C. Barker, Esq., Heatherdale, Woodford Green, 50; Mr. C. Davies, The Moat Park Gardens, Maidstone, 50; Messrs. F. & A. Dickson, Chester, 50; Mr. F. Jamin, Bourgl-la-Reine, Paris, 50; Mr. Denning, gardener to the Earl of Chesterfield, Holme, Lacey, 62; Messrs. C. Lee & Son, 60; Mr. J. Renwick, Melrose, 50; Mr. J. Roberts, Gunnersbury Park, 50; Mr. J. Burnett, Deepdene Gardens, 55; Mr. S. Ford, Leonardslee, Horsham, 73; Messrs. R. Smith & Co., Worcester, 60; Mr. J. C. Mundell, Moor Park, 60; Mr. Thomas, Orchard Lane Gardens, Sittingbourne, 70; Mr. C. Haycock, Barham Court Gardens, 76; Mr. J. W. Dance, Gosfield Hall, Halstead, 61; Mr. P. Middleton, Wynnstay Gardens, Ruabon, 60; Mr. E. Cole, The Gardens, Althorp Park, Northampton, 80; Messrs. J. Cheal & Son, Crawley, 60; Messrs. Harrison & Son, Leicester, 54; Mr. H. Ritchie, Earldiston Gardens, Worcester, 50; and Mr. G. Breese, Petworth, 50. From Wales 143 dishes are sent; from Scotland, 134, not including those from Mr. Dunn, of Dalkeith Palace, which had not all arrived; and there are some from Ireland.

We should advise all interested in this Conference to visit Chiswick as early as possible, for there are many of the finer Pears that are now ripe which will not keep in good condition so long as the Apples did at the previous show.

AUTUMN SHOWS.

EXHIBITORS of Chrysanthemums will soon be actively engaged in preparing for the numerous shows announced for the present season, and the following list of fixtures may be useful as a reminder. Secretaries of Societies not mentioned will oblige by forwarding their schedules.

October 21st to November 4th.—Chiswick (Pear Congress).

October 27th and 28th.—South Kensington (Chrysanthemums and Vegetables).

November 3rd and 4th.—Ealing, Southampton, and Lambeth.

" 4th and 5th.—Brixton.

" 5th and 6th.—Richmond, Havant, and Highgate.

" 10th.—Southend and Putney.

" 10th and 11th.—Brighton and Kingston.

" 11th.—Basingstoke.

" 11th and 12th.—National Chrysanthemum Society and Croydon.

" 12th and 13th.—Lindfield and Portsmouth.

" 13th and 14th.—Huddersfield.

" 14th.—Ramsbottom.

" 17th.—East Grinstead and Devizes.

" 17th and 18th.—Lincoln and Winchester.

" 18th and 19th.—Northampton, Bristol, and Birmingham.

" 19th.—Taunton, Hammersmith, and Aylesbury.

" 19th and 20th.—Hull.

" 20th and 21st.—Sheffield.

STEPHANOTIS AND GARDENIAS.

It is rather surprising that the culture of these plants should be denounced, considering that their blooms are amongst the most chaste and beautiful of any we possess, and their successful cultivation is looked upon by many as a great achievement. Exception is taken to the fragrance of the Gardenia, and Mr. Muir states, page 295, that not one person in a dozen can really enjoy it, but I maintain that the perfume of Gardenia is as much prized as that of any other flower grown.

The Stephanotis must be cast away because its flower stems are so short and it cannot be comfortably arranged with anything else. Our plan is to put it by itself (except an edging of greenery), and for this purpose shallow vases or dishes are used, which are appreciated as much as any combination of colours—certainly they are not suited to mount on the top of tall vases or glasses.

If the cultivation of Gardenias was better understood there would not be so much need of the sponge. Procure cuttings thoroughly clean, and strike them at any time in any hot close frame, and when rooted pot them or plant them out. Never allow them to become root-bound, and syringe them heavily twice a day, and they will make fine plants a yard through or more in about eighteen months, with foliage as healthy as Laurels, and each plant will give scores of good blooms. Both these plants are as easily kept clean as many other stove occupants, such as Dipladenias, Ixoras, Crotons, &c. But what are we to grow in place of them? Of course no one will say a word against the Eucharis, but they must be grown in enormous quantities in order to give cut flowers all the year round, such as can be obtained from a dozen or two well-grown Gardenias, and we have been cutting Stephanotis since March, and hope to continue so until nearly Christmas.

As to the blooms of Gardenias being almost black after travelling, the fault is with the packing, as mine used to be so at one time, but since then I have learnt a lesson, as they generally arrive as "fresh as cut" after a sixteen to twenty hours journey. If Mr. Muir had some employers, they would perhaps prefer to "throw him away" and retain their Gardenias.—W. J. IRELAND.

MR. E. JENKINS, page 324, writes of these as if they were the only pretty and good flowers in our gardens. He would observe that I only wrote against them being taken in by those who were obliged to place them with other plants, and I said nothing against their cultivation in special houses. I may, however, verify my former remarks, and assert that I have known scores of growers, both amateur and professional, who had all their indoor plants together, complain bitterly of the extraordinary increase of pests which was continually taking place after these plants were introduced. There is nothing difficult in finding substitutes for both. Bouvardias, especially candidissima, jasminoides, and Humboldtii corymbiflora are as delicate and pretty as Stephanotis in summer, and far

more useful throughout the entire winter. The *Eucharis*, which was noted before, *Pancratium* in variety, *Jasminum sambac* and others, *Daphne indica alba*, and *Tabernaemontana flore-pleno*, any one or all of which are as pure and delicate as the *Stephanotis* or *Gardenia*. Most of them are fragrant, and all are white.

I am glad to see Mr. Pearson call attention to the statement of Mr. Jenkins respecting the price of *Gardenia* blooms; 2d. each is a great deal nearer the mark than 50s. per dozen. Did ever anybody sell a *Gardenia* bloom for 4s.? I was never offered £10 to find a mealy bug in the Chilwell Nurseries, but the late Mr. Pearson has told me more than once that he would give me a sovereign if I could find one, and I never won it; but how few could say this. "C. S. R." must be possessed of a very meek and mild type of mealy bug if it is exterminated by soapsuds. I congratulate him on making such a valuable discovery.—J. MUIR.

THESE are two favourites here, and I should be very sorry to see them discarded. As to bug, we have none on the place, nor anything to speak of in the way of insects that disfigure or injure plants. When we had our stock of *Gardenias* a few mealy bugs were introduced with them, but by constantly syringing with clean water they were soon dislodged. I know what a trouble this pest is in many places, but venture to think I should soon put an end to them if I had to deal with them.—J. MERRITT.

LILIUM SZOVITZIANUM

AMONG hardy bulbous plants the Lilies have long stood pre-eminent for their beauty and stately grandeur, and recent introductions have invested this genus with much additional popularity. Few



Fig. 57.—*Lilium Szovitzianum*

of the more recently introduced species, however, exceed in interest *L. Szovitzianum*, first cultivated in this country under the name of *L. colchicum*, by Messrs. H. Low & Co., of the Clapton Nurseries.

In the case of strong bulbs the stem reaches the height of from 3 to 4 feet, and yields from six to ten drooping flowers disposed in a scattered raceme. In the fully developed blossom the petals are more revolute than in the figure. The colour is a brilliant citron yellow speckled internally with purple crimson, and stained at the base externally with dull purple. The flowers exhale the most delicious and powerful fragrance, perceptible at some distance, and it is in fact a question whether any other of the numerous species of this genus exceeds it in the sweetness and diffusiveness of its perfume.

The foliage is scattered, broadly lanceolate, smooth above, but paler and somewhat hairy on the under surface and on the margins. Bulb rather large with yellowish scales. By the best authorities this plant is regarded as but a variety of the *L. monadelphum*, from which it is distinguished by its stamens not being united at the base, by the red colour of its pollen, by its longer style, as well as by some other minute characters. Like most of the species it is quite hardy against cold, and will succeed in any good substantial garden soil as well as in peat, but is liable to suffer from excessive wet, and precautions should therefore be taken to insure thorough drainage. Should the conditions of local climate render it desirable protection against heavy rainfalls may be afforded by placing over the bulb a large inverted flower pot, the opening being closed in wet weather.

Owing to the somewhat slow rate of increase of the bulbs of this

genus, new species are less rapidly disseminated than in the case of plants readily propagated by seeds, and *Lilium Szovitzianum* is therefore, in common with several other recently imported species, rather rare and expensive. It is true that most, if not all of the Lilies, ripen seed under favourable circumstances, which vegetates quickly if sown as soon as gathered, but several years usually elapse before the bulbs are of sufficient size to flower.

Notwithstanding this drawback, however, we do not hesitate to recommend to those of our readers who may be endowed with a sufficient stock of patience the propagation of the Lily tribe by seed.—W. T.

CHOICE BULBS.

IXIOLIRION.

IXIOLIRION MONTANUM.—This is a most beautiful hardy bulb from Syria, but being yet so scarce in Europe, it deserves the treatment and care of the half hardy-race. It goes to rest in winter, rises in spring, and flowers with us in May under the same treatment as the Squills—that is, in any light rich border. The bulb is not much larger than that of a strong Dutch-grown *Crocus*. The stalk is from 1 foot to 18 inches high, bearing long narrow leaves and bracts; the flower stalk, or peduncle, rises from these bracts near the top, and some of them are terminal from a cluster of bracts, and they generally come in pairs; the colour is a brilliant blue. Altogether, it is a fine thing for the borders in May. Col. Chesney met with it in great abundance in Palestine and other places in the east, flowering in April, and his account of it led to the supposition in this country that it must have been the "Lily of the Field" referred to in the Sermon on the Mount. The White Lily (*L. candidum*) could not be the one alluded to, as was long believed, because none of the multitude could know that plant, it not being a native of any part of Syria. The "Lily of the Field" is now, by common consent, believed to be the scarlet Chalcædonian Lily, which grows in abundance about Galilee and all round those parts.

IXIOLIRION TARTARICUM.—This is rather smaller in all the parts than *montanum*, and there are slight differences of botanical separation between the two, yet all that may have been owing to the difference of soil and situation where this was found on the Altai range.

IXIOLIRION SCYTHICUM.—This is another of the forms, but a much smaller plant than the other two. They were all referred to *Amaryllis* by those botanists who first discovered them, but Dr. Fischer of St. Petersburg divided them from that group and named the genus. The three are probably in the Russian botanic collections; they are well worth inquiring after. Some of our consuls in the east might fish them out of the troubled waters after political storms subside. What a pretty group these *Ixiolirions* would make in a border, with such blue flowers as *Camassia esculenta* from North America, the *Cummingias* from Chili, the *Dianellas* from New Holland, and the Squills of our own land.

LEUCOCORNE.—This genus was separated from *Brodiaea* by Dr. Lindley chiefly on account of three of the stamens being barren. Two of them, odorata and alliacea, have white flowers about the size of *Crocus* flowers, and *ixioides* is a light blue flower, as pretty as anyone could wish for. They are natives of the south of Chili, and all but hardy, and also all but impracticable to keep any length of time under ordinary cultivation. There are some flowers from Texas which seem on a par with them, the *Cobæas* and *Pentstemon*, for instance. Extreme cold at the roots when they are growing, very warm overhead at the same time, and a scorching heat both for top and bottom when at rest, are the conditions under which they flourish in a state of nature. Mr. W. Rae, the collector sent out by the Horticultural Society, found odorata in bloom high up in the south of Chili, where the snow had melted only a few days before.

No gardener has ever yet been able to cultivate the Cloudberry as a fruit plant. The fruit is about the same size, shape, and colour as the Roseberry Strawberry. Few gardeners can manage some *Pentstemons* and *Cobæas*; and, I believe, fewer still the *Leucocorynes* and bulbs of such habits. I have grown *ixioides* myself as well as it ever was or will be, by placing the bare bulbs on a slate shelf covered with an inch of sand all over, and from end to end, the sand being constantly wet all the summer from watering the pots of other plants which stood on the stage.

LIBERTIA.—These are not actually bulbs, but they look as if they ought to be bulbs, and might be grown in a border without prejudice to a collection of bulbs. They are Iris-looking plants, with the flowers shaped as in the Peacock Iris or *Sisyrinchium* and *Cypellæ*. They grow in either peat or sandy loam; *formosa*, the Chilean plant, is all but hardy, if not quite so. The Australian ones, frame plants, that would grow and flower out of doors during the summer. Mr. Anderson, who sent home *Fuchsia microphylla*, found *Libertia formosa* in the Island of Chiloe growing down to the edge of the tide, whence he sent it and other curiosities to Mr. Low of the Clapton Nursery many years ago. *Grandiflora* is an older plant from New Zealand; *paniculata*, fine, and *pulehella*, from New Holland, are quite as gay as any of their allies, the *Moræas*, from the Cape; *paniculata*, and the snow-white flowers of *formosa* would make a desirable cross, besides rendering the panicked breed more hardy. It will be difficult to find them in collections, as they go under various names, as *Sisyrinchium*, *Moræa*, *Marica*, and *Iris*.

MARICA.—This genus, with its beautiful ephemeral flowers is also out of its place here. They are neither bulbs nor half-hardy, but stove plants, with the habits of the common Iris; yet I have seen them

growing out of doors in summer, and I believe the greenhouse is the proper place for them during seven or eight months in the year. They all require strong, rich loam, and in that the greenhouse is too cold for them in winter; and in the spring they delight in the strong moist heat of the stove up to May. *Marica cœrulea* and *Northiana* are two as beautiful flowers as we can grow, but, unfortunately, they only last a few hours, and only two or three in a day, although strong old plants of them keep throwing up a daily succession of them for some weeks.

MASSONIA.—The only beauty in all the *Massonias* is in their broad recumbent leaves, two of them only coming at a growth or in one season. These lie flat on the pot or border, right and left, and from between them rise a host of small white flowers in a cluster, with hardly the semblance of a scape or stalk. *Angustifolia* has the leaves upright, and not so broad as in the others. *Daubenyas* are only coloured *Massonias*, as far as gardeners are concerned. All of them delight in rich sandy loam, and grow in winter with us.

MELANTHIUM.—This has been an ill-used genus; after being named from the dark and dingy flowers, the species with such tints have been weeded out of it, and named *Wurmbea*, yet no one sees *Melanths* in cultivation in these days; at best they are only botanical plants, with *Ixia*-like leaves, short spikes of small inconspicuous flowers, and slender bulbs, requiring about equal parts of peat, and loam, and pot culture.

MILLA BIFLORA.—This is really a very beautiful plant, with large white flowers as pure white as snow; they last a long time, and come in succession, and they are as hardy as to live out of doors with a slight protection. The name *biflora* is a very great mistake, by *Cavanilles*, I believe. I never saw one without four flowers in the umbel, and the peduncle is 3 or 4 inches long. The Horticultural Society introduced it from Mexico, and spread it far and wide among the Fellows; and if ever a bulb was worth caring for this is one; it lasts a long time in bloom, and is more fitted for a south border than a pot, being long-legged and the parts slender. It will grow in any good light soil all the summer, and go to rest for five months in the winter. The other one, called *uniflora* I think, has not been much tried. I think there is some mistake about the naming of it.—C. B.

TREE CARNATIONS.

VERY rarely are Carnations grown well in pots in private gardens, and many plants are annually conveyed to the rubbish heap through mismanagement. Failure does not so often result from insufficient experience up to the time it is necessary to house them as by the want of suitable accommodation for them afterwards. Another and probably the main cause of failure is due to the supposition that a profusion of fragrant flowers will be produced in succession from the time they are housed through the winter and spring months. The system of treatment pursued to accomplish this soon destroys the health of the plants, and failure is the result before the spring months arrive. To maintain a good supply of flowers from the present time until the end of spring a large stock of plants is required, for a few will yield more flowers after the middle of February than a large number will from now until then. From a good stock of plants in a suitable position solitary flowers may almost daily be cut from the time of housing them until they are produced plentifully about the time named, but from ordinary plants they cannot be had in any abundance.

It is very frequently forgotten that the *Carnation* is a hardy plant. Any system of forcing, however gentle, during the dreary months of winter, very quickly runs up the growths of the plants weakly and destroys them after producing a few small flowers. Those who attempt to force Carnations to flower during November, December, and January must be prepared to sacrifice the plants, for they are very little good afterwards, and will not yield in the end one-twentieth the quantity of blooms that they are capable of doing under natural treatment.

Carnations, after they are housed, may be stood in a vinery from which the foliage has been removed for a time, but they will not long continue satisfactory in a makeshift position. If numbers of plants are grown they should have a house to themselves, or the lightest and best side of the house if insufficient to fill the whole space. Wherever they may be placed the treatment and conditions of the house they occupy should be arranged to suit them. From the time the plants are housed they should have a light position, not too far from the glass. This treatment must be continued through the winter, and fire heat only employed to maintain an average night temperature of 45°, and occasionally during dull weather to evaporate damp. The growth during the winter months is almost at a standstill, and employing fire heat is injurious. Under the conditions advised they will continue growing slowly, and when the days lengthen with increased light and heat thin shoots will rapidly strengthen, and a large number of fine flowers will be the result in succession for a long time.

During the winter Carnations require careful watering at their roots; the soil must not be saturated, or the foliage will soon turn a sickly yellow colour. On the other hand, they should never be allowed to suffer by an insufficient supply of water or the roots soon perish. Strong supplies of liquid manure are also detrimental to them, but given in a weak state and judiciously it will prove the reverse. Clear soot water has a very beneficial effect upon the plants and quickly tells upon the foliage. Weak liquid made from cow manure is also good for them. In addition to the soot water we have found nothing better for them than

light applications of artificial manure applied to the surface about once a month.—LANCASTRIAN.



HARDY FRUIT GARDEN.

LET planting be now done as expeditiously as possible, but let it be done well, and with a clear end and aim kept fully in view, so that every possible advantage may be given to the trees, and a strong growth of root and branch insured next season. "When shall I get some fruit?" is, we fear, more frequently the thought of the planter than, "How soon will the trees be established and growing freely in the soil?" Remember, that for a fruit tree to bear really good fruit it must lay well hold of the soil and its roots be in full activity. To buy trees "well set with fruit buds," and to allow them to bear as much fruit as possible the first season after planting, is to run a serious risk of crippling them for some time afterwards. Repeatedly have we heard it said of newly planted trees at midsummer, "How can much growth be expected yet when they were only planted last autumn?" Yet we must again insist upon it that a young fruit tree has only to be planted well and it will grow as freely the first season as in any year of its existence. Let us be satisfied with nothing less than this, for we certainly cannot afford to lose a year's growth. The points of importance are healthy robust trees, fertile well-drained soil, as little exposure of the roots to the air as is possible in the transplanting, not to bury the roots deeply, but to spread them out at full length, to work the soil carefully in amongst them, to press it by treading firmly about them, to make fast the stem so that the roots cannot be loosened in the soil, to have not more than 6 inches of soil upon the upper roots, to apply a mulching 6 inches deep of half-decayed stable, piggery, or farmyard manure when the planting is done, and at the same time to prune the branches so that the sap may flow into the buds, or rather into the shoots springing from them to form the head of the tree, and not into growth that has to be cut off. In a well-planted tree branch and root-growth maintain a tolerably even balance, so that a glance at a tree is sufficient to show us what is taking place in the soil. The best time for planting is certainly during the next three weeks. It may be done throughout winter, but not under such favourable conditions as at the present time, and therefore with less certainty of success. However apparently trivial any of the cultural points enumerated may appear, every one of them is important, and must be considered as indispensable to success. Perhaps surface-dressing with manure is more neglected than anything else, and yet how important it is that the soil should be kept moist, and that excessive evaporation should be checked! To every planter we say, then, Get a clear knowledge of the conditions necessary to success in your work, and see that not one of them is wanting.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Early House.*—The trees from which ripe fruit is to be gathered early in May onward should now be examined and receive their final pruning, but where this was carefully attended to so soon as the trees were cleared of their fruit it will be a light affair. The trees should be washed with an insecticide carefully and effectually, repeating it if the branches are infested with scale. Prior to this the wood-work should have been well washed with soap and water, and if necessary paint the trellis and the interior of the house before the trees are tied in. An impression prevails that casting the buds is caused by the imperfect ripening of the wood, but this is foreign to our experience, and so far from this being the case in early houses it generally happens that the soil gets dry or the trees receive a check before forcing is commenced. To counteract the tendency to over-development of the buds and insure a thorough moistening of the soil all early houses should have portable roofs, so as to afford the trees the full benefit of the autumn rains. The lights may be painted and prepared for placing over the trees, but they ought to be placed in position before the middle of November, as any excitement now followed by a check next month may cause the trees to cast their buds when they ought to begin to swell.

Succession Houses.—Although the wood appears quite ripe and the buds are prominent and abundant, the trees, no doubt owing to the rains, are holding their foliage well, but the recent frosts have caused the leaves to assume their autumn tints and are falling freely. When this is the case no time should be lost in proceeding with lifting, root-pruning, and replanting. Provide free drainage, employing good loam from an old pasture with a rather free admixture of lime rubble and charred refuse. Keep the roots near the surface, and make the soil firm as the work proceeds. Although Peaches and Nectarines will grow in almost any fresh well-drained soil they do best in a compost that offers some resistance, and does not soon become dry, and in such they always set, swell, and finish the finest fruit.

Pruning.—Years ago every shoot was shortened back to from 12 to 18 inches in length, but of late years the young shoots are left three times those lengths and ripen a good fruit to every foot length of wood laid in; in fact, we have had shoots 5 and 6 feet long ripening as many fruits, those from the extremity being as fine as that only a few inches from the base. A great change has been effected in the training of young

trees. A tree a year old, or one year's training allowed to extend, will give the first year a breadth of at least 6 feet, and instead of having a few gross shoots to cut away in the autumn all are fruit-bearing wood well studded with triple buds, and a fair crop insured the following season; all danger of gumming is avoided, and a good-sized trellis may be covered in three or four years. Pruning is reduced to a minimum, disbudding being the most important matter in the after management of the trees. With due care not to overcrop, a Peach to every square foot of trellis covered with foliage being a good average crop, and quite as much as can be secured in a succession of years. The other main point is not to lay in too much wood; two shoots to every foot will give abundance to select from, or one bearing and the other to take its place is all that should be laid in, preventing anything approaching crowding, diminishing the labour, and improving the quality of the wood from which the succeeding crop is to be gathered, as the main point in extension training is thorough exposure of the wood to light and air.

Late Houses.—Trees in late and unheated houses will require a dry atmosphere, with a free circulation of air to harden the young growths. Remove every shoot that will not be wanted next season, particularly the gross watery growths that are not likely to form flower buds. Old trees that carry good crops of fruit and receive annual attention to the roots in top-dressing, do not, as a rule, make too strong wood; but vigorous young trees are not so readily kept within bounds, as they persist in making late growth. Where this is the case the strongest shoots should be pinched, and a trench be thrown out as deep as the roots at a distance from the base of the stem that will insure shortening the strongest roots. The trench should be left open for a fortnight or three weeks, and may then be filled in and the soil made firm.

CUCUMBERS.—When the weather is wet and cloudy, the atmosphere surcharged with moisture, the plants require special treatment. Atmospheric moisture at such times must be reduced to a minimum, and air admitted very cautiously, otherwise mildew will be likely to attack the plants, which should, upon its first appearance, be dusted with flowers of sulphur, after which the house should be kept rather dry and airy until the disease disappears. In bright weather a more genial condition of the atmosphere must be maintained by damping occasionally, especially at closing time, but for the next three months a somewhat dry atmosphere should be maintained. Do not allow the fruits to remain on the plants a single day after they have attained a suitable size for the table. Placed on the stem end in saucers containing about an inch depth of water in a fruit-room, they will remain useable for several days. Thus relieved of the fruit, the sap will be diverted to swelling and finishing the younger and smaller fruits, which is a practice that ought always to be practised during the whole of the fruiting period of the plants. The night temperature should range from 65° to 70°, falling to 60° in the morning of cold nights, keeping at from 70° to 75° by day with fire, running up 10° or 15° with sun heat. Whatever ventilation is given should be in the early part of the day, never lowering the temperature, avoiding cold currents, and closing early, so as to husband the sun heat as much as possible.

The linings of dung frames will now require to be attended to regularly by having them made up weekly or fortnightly, according to the necessity of the case, and the lights should be covered with double mats at night. Mildew and canker may be destroyed by the timely use of sulphur for the mildew, and quicklime well rubbed into the parts affected with canker.

PLANT HOUSES.

Tea Roses.—Plants potted and treated as advised some time ago for producing blooms until Christmas should be placed in a suitable house at once. Many of them now possess a good number of small flower buds, while others have started freely into growth. If these are placed in a light house where a night temperature of 50° to 55° can be maintained, with a rise by day of 5° or 10°, the buds will soon commence opening, and during the autumn months will be highly esteemed. If there is any trace of aphides upon the plants when arranged in their winter quarters light fumigations with tobacco smoke will be needed. It not unfrequently happens that after the plants have been standing outside that small specks of mildew are visible on the young foliage. This must be destroyed by syringing with a solution of softsoap, 1 oz. dissolved in a gallon of water, to which one handful of sulphur has been added. If the Roses are well syringed with this solution and the sulphur allowed to remain upon them for a few days before being washed off all trace of mildew will disappear. Afterwards syringe in the morning only on fine days with the softsoap solution so frequently recommended. Supply water carefully, and all that were recently potted will need neither liquid or artificial manure. Plants with their pots full of roots may have weak stimulants. When admitting air every care must be taken that cold draughts do not strike upon them, or the young shoots and foliage will soon become affected by mildew. The house in which they are grown should be kept perfectly close and a little fire heat applied during cold bad weather. Young stock rooted from cuttings in spring, and now in 6 and 7-inch pots for supplying flowers at this season of the year, should be treated as advised for the others.

The Rose House.—In gardens where a house is devoted to Tea Roses for yielding flowers from Christmas onwards it is no position for the plants grown in pots for flowering up to that period. In this structure the Roses that furnish the central bed, the front, and rafters are planted out, and must still be kept perfectly cool by allowing the ventilators to remain open day and night for a few weeks longer. They should now be pruned. Cut out weak puny old wood that was laid in last year, and furnish the trellises again with the ripest and best wood that has been made during the year. Where the object is to obtain numbers of buds or cutting in preference to a limited number of large blooms do not

practise a very close system of pruning. After the removal of the wood indicated only take off unripe ends. After the house has been thoroughly washed or painted tie the plants into position ready for starting, a little of the surface soil of the borders being removed and top-dress with equal portions of good loam and cow manure that have been stacked for some months. Previous to top-dressing the borders it is a good plan to scatter thinly over the surface of the border a few half and quarter-inch bones. If red spider, aphides, or mildew be present destroy them before the borders are top-dressed. The soil should be kept rather dry until the house is closed for starting them into growth, when the whole of the soil about their roots must be thoroughly moistened with warm water. Plants subjected to this treatment will soon plump up their buds after the house is closed and break into growth without fire heat except in very cold weather.

Hybrid Perpetuals.—Those established in pots may remain outside until the approach of frost, unless the weather is mild and it is necessary to prune and house them ready for starting early into growth. All late plants should remain outside for at least the next two months. Where it is necessary to increase the stock strong plants from the outside can be lifted and placed at once in well-drained pots. The pots used may be 9 inches in diameter, but if the ordinary trade plants are purchased pots 2 inches less will be large enough. Employ a mixture of fibry loam, one-seventh of decayed manure, one 6-inch potful of soot to each barrowful of loam, and the same quantity of small bones. If the loam is of a heavy nature add to this a liberal dash of coarse sand. After potting plunge the plants so as to cover the rim of the pots, for if dry weather ensues no water will be needed at their roots. The foliage must be preserved healthy as long as possible, and if this is done a large quantity of fresh roots will be formed before it is necessary to place them in cold frames.

THE BEE-KEEPER.

SPREADING BROOD.

THE refutation of the arguments adduced by the supporters of spreading brood has been undertaken by men so eminently well fitted, both by long practical experience and knowledge of the theoretical part of bee-keeping, that until a few weeks ago I had no intention of giving my views upon the subject, although to my mind the practice has been condemned most thoroughly, if strength of arguments against it were the only consideration. Before going further we had better fix in our minds the object we have in view, which object is, so say the advocates of spreading brood, best attained by this questionable method. For myself I always keep my object in view, and carefully working to obtain the result aimed at, generally, if not always, arrive at the desired goal.

There cannot be a doubt that in the present day no man is able to hold his own without showing energy and perseverance, and in addition thrift. It may be that some men make money while others lose it, and if the case is carefully inquired into the result often shows that the cause of the failure lies at the door of the man himself, and that he and he only is to blame for the unsatisfactory results which have accrued either by "bad luck" or some other dreadful calamity. It is so in bee-keeping—one man makes money, another loses it. But to the point. The object to be attained in spreading brood is, I take it, to bring a stock forward as quickly as possible, in order to be ready to take advantage of the earliest honey flow, or, if the owner prefers it, to increase by swarming. Granted that the man who spreads brood is able to bring about this most desirable object, and to have his stocks strong, healthy, and in good condition at the end of April or beginning of May, they are, it must be admitted, in a most satisfactory condition, but for all that it does not at all follow that the only way to accomplish this admirable result is by the adoption of this troublesome and, in the hands of any but experts, most dangerous practice. If a means simpler by far, inexpensive, taking much less time, and therefore entailing little or no extra expense, can be pointed out by which stocks can be brought up to the point at which they are ready to be supered or swarmed at the same early date by a plan so simple as to be managed by the merest tyro in apiculture, and in addition so safe a method as to entail no danger of chilled brood, lost queens, or any other of the many dangers to which the spreader of brood is constantly liable, the result will be that all can be desired.

In the hands of Mr. Cowan the spreading of brood may be achieved at a minimum expenditure of time, and with the least possible danger; but how many are there who have the knowledge and experience of this great bee-keeper? Does he not himself warn us against the practice if not carried out with the greatest judgment and care? If, then, it can be proved necessary in order to prepare stocks to gather honey in supers in the earliest part of May to spread brood, it will be quite time to adopt the practice unless the disadvantages are so great as to counterbalance the advantages. That question cannot be here discussed. I maintain that exactly the same result may be achieved by attending to the following points in autumn:—

1. Every stock to receive additional bees, so that the colony is made very strong in numbers.
2. Every stock to be well fed, so that there shall be store enough to last till April at least.
3. Care to be taken to wrap up warm and keep bees dry and undisturbed, at any rate till March.
4. Good fertile queens.

By carefully carrying out these four rules the same result will follow as from the more complex method, and it will be evident that but a little extra time in autumn is required to strengthen and to feed up to the desired weight. Stimulating in spring is advocated also by some as a means of bringing forward a stock more quickly, but as far as my experience goes there is not much difference between the state of a stock well supplied with food and left undisturbed, and one with less internal supplies supplemented by dribbles in the cold bleak weather of March and April. Sugar-fed stocks, notwithstanding the Editorial in the *British Bee Journal* of 1st October last, are the choicest of stock for early summer work, and I may point out that one great and very general reason why these stocks do not come up to expectation is that insufficient bees are given. There cannot be too many; there may easily be too few. If a hive is well filled with driven bees, and fed up carefully, a result will be given even in face of the most sanguine expectations of most bee-keepers. To sum up, then, it seems to me that the advocates of spreading brood have to show

First, That their method, which for sake of argument we granted to be successful, is in reality so.

Secondly, That by no other method can the same good result be obtained.

Thirdly, That no other method so nearly approaches the spreading-brood system as to make it on account of simplicity and little expense of more practical profit than the more troublesome means they advocate. Surely there can be no difficulty in proving these three facts. It must be a very easy task if we may judge by the glowing accounts given from time to time of the great profits obtained by the advocates of this perfect utilitarian system. There can be no difficulty in quashing the arguments given of the experience of "A Lanarkshire Bee-keeper," and showing the magnificent strength of the rampart by which the advocates of the system defend themselves; for this I note that it is customary not to answer awkward questions amongst a certain class of bee-masters, and so to stifle as it were full discussion. This question ought to be considered on its merits, and it is with this desire that I have endeavoured to bring into publicity some facts which condemned the system, and to substitute a really useful and simple method of obtaining the same result.—FELIX.

WASPS.

In reply to "Basil," the best hint to prevent wasps entering hives is undoubtedly to destroy their nests, which may be easily found by close observation of the exact line they take on leaving the hive. Dusting wasps with flour on the alighting board enables us to keep an eye on them for a longer distance. If the nest is within a short distance it will not take them many minutes to disgorge and come back. I have often found nests by simply taking notice how long they were away. Wasps are most interesting insects to study. I have an excellent nest in a large glass super in full working order, which I keep for the inspection of

friends. Any nests known to exist at the present time should be destroyed to prevent the queens escaping. It is rather late, but in some warm dry places many will be found still. If the working wasps still trouble you stop up the entrances, of course giving ventilation, and place bottles half filled with beer and water sweetened with sugar, or vinegar and water and sugar.—J. HAM.

TRADE CATALOGUES RECEIVED.

Richard Smith & Co., Worcester.—*List of Plants.*
J. Cheal & Sons, Crawley, Sussex.—*Catalogue of Trees, Shrubs, and Roses.*
L. Späth, Berlin.—*List of Bulbs.*
William Paul & Son, Waltham Cross, Herts.—*Illustrated Catalogue of Roses.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Dry Vine Borders (A. G.).—The dryness of the roots to which you allude accounts in a great measure if not entirely for the premature shrivelling of the fruit. Dry soil causes the roots to shrivel, and then after water is given they are not in a condition to imbibe sufficient for the demands of the vine or fruit, and a collapse occurs sooner or later. It is the same when borders are excessively wet, causing the roots to decay. They must be in active working order for affording adequate sustenance to the wood, foliage and fruit.

Bleaching Pampas Grass (P. C.).—We believe the plumes are bleached by suspending them in a close shed, or any suitable place not in a dwelling or where plants are kept, and burning sulphur in it until the enclosure is filled with fumes, and not opened for several hours, or say till the next morning. If anyone can recommend a better method we will readily insert a description of it if obligingly forwarded for that purpose.

Roses for Market (J. S.).—The following are extensively grown to afford blooms for market:—Niphetos, Isabella Sprunt, Madame Falcot, and Gène-al Jacqueminot. If they produce rather strong growths and these are matured, they are bent and trained round the plants if it is desired to keep them dwarf. More flowers are thus produced than when such growths are closely pruned and they are cut before half expanded, the great majority being required small and fresh for buttonholes.

Popular Apples (Planter).—There is something in your suggestion that "the most popular Apples are likely to be the most useful because their merits have been extensively recognised;" yet we scarcely consider the test conclusive. We name twenty-four each of dessert and culinary kinds that were the most fully represented at the Apple Congress at Chiswick, but we do not regard them as the best that could be selected, nor as even placed in the order of merit. They will still form a good collection:—**Dessert**—King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Pippin, Irish Peach, Devonshire Quarrenden, Sturmer Pippin, Scarlet Nonpareil, Court Pendu Plat, Yellow Ingestrie, Fearn's Pippin, Claygate Pearmain, Worcester Pearmain, Margil, Wyken Pippin, Cockle Pippin, Court of Wick, Red Astrachan, Adams' Pearmain, Mr. Gladstone, Golden Pippin, Mannington's Pearmain, Gravenstein. **Culinary**—Lord Suffield, Dumelow's Seedling, Kew Codlin, Warner's King, Blenheim Orange, New or Winter Hawthornden, Cellini, Ecklinville Seedling, Stirling Castle, Hawthornden, Manks Codlin, Golden Noble, Cox's Pomona, Alfriston, Emperor Alexander, Northern Greening, Tower of Glamis, Mère de Ménage, Beauty of Kent, Lord Derby, Yorkshire Greening, Annie Elizabeth, Norfolk Beefing, and Loddington Seedling.

Improving Lawn Tennis Ground (Mrs. Watson).—It is not unlikely the lawn requires draining, and if so the first step to take is to put in drains 6 or 7 yards apart and 18 inches deep, with proper falls into a main drain and a clear outlet for the water. Three-inch pipes will be sufficient, and they should be covered 6 inches deep with rough cinders or gravel to render them permanently effective. Drainage, however, may not be needed. Of this you ought to be the best judge; but whether it is done or not, a heavy dressing of fresh soil, with a liberal admixture of manure, lime, and wood ashes spread over, so as to almost cover the grass, cannot fail to be of great benefit. Before applying the dressing comb off all the moss you can with a small sharp-toothed rake. This you may do at any time when the ground is dry very early in spring, and later, when the weather is genial, sow thickly seeds of a renovating lawn mixture. Rake it in and roll the ground lightly, and you may expect a greatly improved lawn a few weeks afterwards. If you state the extent of the ground to any seedsman or firm who deal largely in grass seeds the proper quantity of a suitable mixture will be sent to you. If the lawn is full of deeply rooting weeds you had better dig it up, forking and picking out all the rubbish, then make it level and firm, and sow it as before advised. In this way you may form a cleaner and better lawn than by taking up the old and laying down fresh turf as you propose, as, however clean the new turf may be, the roots of the weeds left in the ground will grow, and the new turf will soon be as unsightly as the old.

Black Morocco Grape (S. N.).—Your Grape is the Black Morocco, which was sent out some years ago as a new variety under the name of Kempsey Alicante. It is a late Grape of good quality, and requires a warm temperature. When well grown, which is seldom, it is a fine Grape. Its great fault is being a bad setter, and it is only by gently drawing the hand over the bunches when in flower to remove the moisture that exudes from the stigmas, then apply pollen from another variety, if it is obtainable, to insure full bunches. If fresh pollen cannot be had the berries may set fairly without under favourable atmospheric conditions. It is, however, essentially an uncertain Grape, and not half so reliable as the Black Alicante, which is one of the easiest of varieties to grow, as the other is one of the most difficult.

Pruning Clematis Lucie Lemoine (Idem).—This variety belongs to the Florida section and flowers in early summer. The object of the cultivator should be the production of free healthy growth under the full influence of light and air, and only remove the unripe portions with any old growths that have become weak, as the best flowers are produced on good well-ripened young wood. Your plant is probably "sickly" by defective root-action, and fresh soil may be needed. You do not say whether your plant is in a pot or not, or under what conditions it is grown, so we are unable to give you more precise information. You may, however, read the reply given to another correspondent about its culture. Chip punnets, we believe, can be had from Mr. P. Nicholls, 377, Goldhawk Road, Hammersmith.

Mealy Bug in Vineries (J. L. A.).—This pest is the worst the Grape grower has to contend with in vineries, as it destroys the appearance of the fruit; and the measures necessary for the destruction of the insects cannot well be employed when they are the most active without injuring the Grapes. The mealy bug is most active during the growth of the Vines, remaining dormant during the winter or resting period of the canes, and is called into activity soon after fire heat is applied, which depends of course upon the time the fruit is required ripe. It is most successfully contested when the Vines are at rest. In your case we advise the Grapes to be cut at once and bottled, which will give you an opportunity of attacking the bug before it becomes ensconced in its winter quarter—i.e., beneath the bark, in the holes and crevices of the rods, also woodwork, &c., of the houses. The Grapes being cut syringe the Vines thoroughly both ways with petroleum at the rate of a wineglassful to three gallons of water, which should be kept mixed by one person stirring briskly with a broomhandle, whilst another is applying it to the Vines. It must be done thoroughly so as to saturate every part of the Vines, and not only those, but every part of the house. If the foliage of the Vines is difficult to reach on their upper surfaces they must be loosened from the trellis and lowered so that no part of the leaves escapes wetting with the petroleum water. Allow the foliage to become dry, and then repeat the operation. The leaves being somewhat mature will not be injured by the petroleum. When the foliage is mature the operation should be again repeated as before, and then matters may rest until the time arrives for applying fire heat, when the Vines and house should again be syringed with the petroleum, care being taken to perform it before the eyes have broken. This is a drastic remedy, you may say. It needs one, as no half measures are of any avail. During the growth, so soon as the Vines show leaf, a sharp look-out should be kept for any of the insects that have escaped the dressing, and of course destroyed, which will prevent propagation; and if any escape and get into the branches they should be destroyed by a small brush or camel's hair pencil dipped in methylated spirits.

Clematises for Conservatories (E. Willing).—We cannot better answer your questions, which are not particularly clear, than by citing from Messrs. Moore and Jackman's work on this beautiful family of plants:—"For conservatory decoration the varieties of *C. patens* and *C. florida* are infinitely superior to the rest as objects of ornament. The plants may be grown as pot specimens with excellent results. They may also be planted out in the conservatory, where they are especially fitted for training up the pillars or over the trellising fixed for covering walls, provided the situation is not too much confined and shaded by the other occupants of the house. They are, doubtless, more appreciated when grown in these positions, or in glazed corridors, than when grown outdoors, for not only are these earlier flowers more highly prized than the later ones, but the blossoms themselves are occasionally liable to suffer injury should severe spring frosts occur during the time they are open. The plants themselves are, however, perfectly hardy, and are really good wall creepers, so that but for this limited risk to the flowers themselves, no better or more interesting subjects for such positions could possibly be selected. For pot-culture, then—and supposing young plants are obtained to commence with—they should be shifted about March into larger-sized pots, using a rich loamy compost, and paying especial attention to drainage. If the plants are well rooted at the first, and in a healthy condition, the pots may be some two or three sizes larger than those in which they have been wintered, as this bulk of good soil will induce a vigorous growth of the branches during the summer, and preclude the necessity for a second potting later in the season, which might not be beneficial. The plants should flower well if grown in 10-inch or 12-inch pots. The chief object should be to induce the development of a strong shoot or shoots, and to get this young growth well ripened by exposing it fully to light while it is progressing, and by so ordering the root-treatment, and the supply of water, as to bring about a cessation of active growth towards the end of the summer. Thus developed and matured, the shoots are prepared to give forth their lovely flowers at the proper time in the ensuing spring. While growing, the young shoots cannot be better placed than when fastened perpendicularly to a string or wire in the full sunlight, but these shoots should be trained into the form required while they are still dormant in winter or early spring, so that the young flowering growths may dispose themselves naturally before the blossoms expand. Cylindrical or halloon-shaped trellises are the most convenient and suitable for specimen plants of this character. Plants thus grown, and thus trained, form fine objects for home decoration, as well as admirable subjects for the earlier or spring exhibitions. The natural period for the blossoming in a cold house entirely without artificial heat, is about the end of April or the beginning of May; but by the aid of gentle heat they may be had in flower earlier. The temperature should not, however, be allowed to range higher than from 45° to 55°, for if higher than the latter the flowers will not be of their true or natural colour. A rich light loamy soil, and an annual mulching to secure a renewed and vigorous summer

growth, are required; while the pruning must consist in the removal of a portion of the old flowering wood, sufficient to give the plants a new start, in order that young flowering wood for the following season's bloom may be secured."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*G. R. J.*).—1, Gloria Mundi; 2, Reine de Canada; 3, Beauty of Kent. (*Caterham*).—The large Pear is General Todtleben—only a baking Pear with you, as it does not appear to ripen on your soil. The small one is not known. (*A. J. Brown*).—1, Blenheim Pippin; 2, Dr. Harvey; 4, Fearn's Pippin; 5, Lewis' Incomparable; 6, Duck's Bill. (*J. E. C.*).—Mère de Ménage. (*C. T. H.*).—1, Mère de Ménage; 2, Dumelow's Seedling; 3, Pear Calabasse. (*Constant Reader*).—1, Early Nonpareil; 3, Yorkshire Greening; 4, Nonesuch; 5, London Pippin; 6, Greenups Pippin. (*Somerset*).—No. 1, quite passed; 2, Vicar of Winkfield; 3, Figue de Naples; 4, Brown Beurré. (*G. B., Guildford*).—1, Glou Morceau; 3, Verulam; 4, Beurré Diel; 7, White Doyenné; 9, Gansel's Bergamot; 10, Vicar of Winkfield.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*C. H. S.*).—1, Begonia semperflorens; 2, a Dracæna, but too immature to be determined; 3, Adiantum cuneatum; 4, Pteris serrulata; 5, Onychium japonicum; 6, Phlebodium aureum. The numbers had become so nearly obliterated, that we are not sure if the above are all in their proper order (*A. L.*).—1, Pyrethrum uliginosum; 2, Rudbeckia speciosa.

COVENT GARDEN MARKET.—OCTOBER 21st.

COBS selling freely, with a tendency to rise. Good Pines are now in demand, our market being nearly clear.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0 to 3 6		Peaches	per doz.	2 0 to 8 0
Cobs, Kent ..	per 100 lbs.	24 0 27 6	Pears, kitchen ..	dozen	0 0 0 0
Figs	dozen	0 8 0 9	" dessert ..	dozen	1 0 1 0
Grapes	lb.	0 6 3 0	Pine Apples English ..	lb.	2 0 4 0
Lemons	case	15 0 21 0	Plums	1/2 sieve	1 3 2 0
Melons	each	1 0 1 6	Strawberries ..	lb.	0 0 0 0
Oranges	100	8 0 12 0	St. Michael Pines ..	each	3 0 7 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 0
Asparagus ..	bundle	0 0 0 0	Mushrooms ..	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 3 0 0	Mustard and Cress	punnet	0 2 0 0
Beet, Red ..	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley ..	dozen bunches	2 0 3 0
Brussels Sprouts ..	1/2 sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney ..	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers ..	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzoneria ..	bundle	1 6 0 0
Coleworts	dcz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 0
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 6



SHELTER FOR LIVE STOCK.

Will the time ever come when the shelter for the whole of our farm animals will be regarded as an indispensable necessity? Yes, we believe it will, when farmers are able to grasp intelligently the full significance of the term, and can understand its value. That exposure to cold and wet can be borne with apparent impunity by many animals is doubtless true enough; but such exposure is a piece of careless extravagance, in which we certainly cannot afford to indulge in these hard times. We may give an animal plenty of the best food, and yet it may not grow and lay on fat so fast as we know it ought, simply because more of the food goes to sustain heat in its body than need be if it had protection from cold and wet. In a recent visit to an off farm we found a fine herd of twenty bullocks out on the home close pasture. Now, it was raining hard with a high north wind, and the day was, in point of fact, just one of those bitterly cold wet days which so often prove fatal to young cattle at this season of the year. We went out among the

bullocks with the bailiff, and tried to convince him of the mischief arising from such exposure; but he evidently could not or would not see it, pointing to the eager way in which they were eating the grass as evidence that they did not suffer from the weather. Well, it is not an easy matter to overcome prejudice and fondness for old customs, and the only method in such a case is to give explicit orders that the cattle shall be kept in warm yards on such days.

The really practical point of view of this important matter is not how much exposure to inclement weather animals can bear, but rather what benefit is to be derived from shelter. To begin with, we must remember that a certain degree of delicacy is inseparable from the condition of domestic animals, and the necessity for shelter ought to be a foregone conclusion. We are bound now to strive for small profits and quick returns. To bring bullocks into growth and condition for the butcher at an age of eighteen or twenty months instead of three years, and sheep in seven or eight months instead of two years, there must be no cessation of growth or falling off in condition. As a means to this end we must add materially to our provision of all kinds of shelter. In every meadow there must be one or several large spacious lodges with yards or enclosures in front, with boarded sides to break the force of high winds. Let the lodges be boarded at the sides, the only opening being a doorway 6 or 8 feet wide. Always avoid narrow doorways to cattle lodges. Many an animal has sustained serious injury in the rush through them which occurs when the herd is startled, and the mere sight of a stranger will do this. Such lodges and enclosures afford shelter both in winter and summer. Once let cattle have access to them and they will invariably turn into them for shelter from heat and flies in summer, and from cold and wet at all seasons of the year. Especial care must be taken to raise the yard bottoms and lodge floors with some hard substance above the surrounding surface, so as to have them firm and well drained. We ought never to suffer cattle to lie down upon a bed sodden with moisture, or to stand for hours in winter in several inches of water. The same remarks apply with equal force to large cattle yards and lodges. Commodious buildings, snug enclosures, well-drained yards, plenty of soft dry litter are to be regarded as indispensable. In the yard for dairy cows there must be plenty of both open and closed lodges, no delicate cows being left out in the yard at night from the present time till the cows go out on the pastures again next spring. Let this be a fixed rule, and do not leave it to the judgment or fancy of the cowman. How can a farmer sleep soundly who has left such matters to chance or the discretion of an ignorant, thoughtless servant?

Turning now to the flock, we may well inquire into what has been done for it in the way of shelter. Folding on Turnips, Cole, and Mustard is now being done. We have heavy rainfalls almost daily. Can anything be more wretched than the plight of a flock kept standing for hours, or rather day after day, in several inches of mud? If folding upon arable land is unavoidable let it be done by day, removing the sheep at night to a sound dry pasture with lodges and enclosures with hard raised floors. "Bosh!" do you say, my good friend? Assuredly not. Have you never heard the distressing cough of many a sheep at this season of the year? Certainly you have, and if you claim to be a practical farmer you ought to have thought out the cause, found a remedy, and applied it. We ought not to suppose that a certain per-centage of loss is inevitable in a flock, but rather to make close inquiry into the cause of every loss, and to do all we can to prevent a recurrence of it. Do not keep weakly or over-age sheep, but always weed out all such from the breeding flock every year, retaining only young healthy strong animals which, with ordinary care, are likely to pass through ordinary exposure unharmed.

Of pigs it is often said with truth that one may force them in growth and condition more speedily than any other animal. Piggy is undoubtedly a kindly creature, with an

enormous appetite and wonderful digestive powers, but he suffers from cold perhaps more than any other animal. We may claim for him, in the interest of his owner, a sound roof and plenty of warm dry litter; and not without reason, for we have seen pigs in wretched plight clustering together for warmth upon a miserable wet, muddy bed under an apology for shelter in the guise of a few faggots, which certainly were the reverse of a dry roof.

WORK ON THE HOME FARM.

Frosty nights gave the signal for the clearance of Mangolds from the fields. The work is begun, but it is much hindered by wet days. No opportunity must be lost of pressing on with it both to get the roots heaped or housed before severe frosts set in, and to clear the land for Wheat-sowing as early as possible. Rye has come up nicely, and Winter Oats are also fast coming through the surface. Ploughing for Wheat and carting corn to market still goes on as fast as possible, but wet weather proves a sad hindrance to corn-threshing as well as field work. But little way has been made in cleaning foul stubbles this autumn, except where prompt action was taken immediately after the corn was carried to the rick yard. But it was just then that horses were so much in demand that our full strength could not be put into the stubbles. There is also an objection to ploughing or horse-hoeing before pigs and sheep have been run over the stubbles; but by taking field after field in succession it can usually be managed. We have had to leave one very foul field alone till we get more settled weather. It is good mixed soil, and we hope to get it clean next spring in time for roots, or Maize, or Mustard—anything rather than a long fallow. We have several farm roads in bad order, and have given orders that on every favourable occasion stone or gravel shall be accumulated for repairs during winter. Ditch-scouring and hedge-trimming is now being done, and due care taken to make clear the mouth of every field drain whose water is discharged into any ditch. This at least should be done annually, for without a system it is precisely one of the little matters—trifles, so-called, that are liable to be overlooked. Some miles of ornamental clumps and belts are in course of being thinned. We devoted several days to marking the trees before the pressure of Michaelmas work was upon us, and now the men are set to cut down trees and make faggots by piecework. There is nothing like piecework both for master and man. It puts an end to all eye-service, and if a man is worth his salt he will exert himself to earn a few extra shillings in this way. To set a body of men at work by the day in woods and plantations away from close supervision is wrong, and it never answers. Let a labourer feel that he has an interest in every stroke, and he will strike home. Only take care that he does his work aright. The shirkers are keen to recognise ability in a master, and either soon cease to be troublesome, or they have to be got rid of. Of other piecework land draining is also begun; but in one instance the subsoil was so hard that we had to withdraw the men for awhile. Two-inch tile drains will be made as far as is possible in wet land this winter.

KINVER GIANT WHITE WHEAT.—Referring to the article on "Wheat Sowing," page 351 of your Journal, will you kindly permit me to point out that your able correspondent has omitted to mention the name of the variety of Wheat which was referred to by Mr. Evan Baillie of Pilleigh as producing the large yield of 47 bushels per acre. The variety in question was Webb's New Kinver Giant White Wheat, and if you would kindly note the same in your next issue it would no doubt be much appreciated by your readers, who, I am sure, are always anxious to hear of new varieties of sterling merit.—W. B.


METEOROLOGICAL OBSERVATIONS. CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1885. October.		Baromet- er at 394 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	11	29.535	45.9	42.0	N.W.	48.9	50.3	43.9	76.7	42.4	—	
Monday	12	29.666	44.4	38.5	N.W.	44.4	49.9	33.4	67.6	25.8	—	
Tuesday	13	29.656	41.6	37.8	N.	46.7	48.6	38.0	65.3	32.7	0.089	
Wednesday ..	14	29.791	42.4	41.3	N.W.	46.3	48.7	40.2	62.2	39.6	0.179	
Thursday	15	30.151	47.1	45.3	E.	46.7	54.7	42.0	85.4	36.1	0.247	
Friday	16	30.046	53.7	52.2	S.E.	47.4	59.1	47.2	87.3	40.8	—	
Saturday	17	30.206	44.6	44.2	N.E.	47.6	55.8	38.6	62.6	32.1	—	
		29.892	45.1	43.1		47.3	52.4	40.5	72.4	35.6	0.515	

REMARKS.

11th.—Fine, but not very bright.
12th.—Fine and bright, but spots of rain about 11 A.M.
13th.—Dull and showery.
14th.—Dull and damp morning; wet afternoon.
15th.—Fine, bright day; damp drizzle in evening.
16th.—Fog early, then fine and bright.
17th.—Foggy morning; fair afternoon.
A damp cool week, the temperature still falling. With the exception of the week ending September 19th the mean maximum temperature has decreased without interruption and by very nearly equal amounts since August 15th. Of course a decrease of temperature in the autumn months is the usual rule; but it is very rare for it to be so regular as (deducting 21° from the week ending September 19th), the following—viz., 1° 3, 1° 7, 1° 2, 1° 6 1° 3, 1° 4, 3° 7, 3° 3, and 3° 4.—G. J. SYMONS.



COMING EVENTS

29	TH	Continuation of Pear Congress at Chiswick
30	F	
31	S	
1	SUN	TWENTY-SECOND SUNDAY AFTER TRINITY.
2	M	
3	TU	Southampton, Lambeth, and Ealing Shows.
4	W	Brixton Chrysanthemum Show.

THE ORIGIN OF ENGLISH POTATOES.

AS is well known to readers of horticultural and agricultural literature Lord Cathcart has long taken a deep and active interest in the improvement and cultivation of the Potato. At his lordship's instigation Mr. Baker of Kew undertook a review of the tuber-bearing species of *Solanum*, which was embodied in an admirable and exhaustive paper read by him at a meeting of the Linnean Society on January 17th, 1884. "What Lord Cathcart asked for," Mr. Baker observed, "were any suggestions that a botanist might give, founded on his knowledge of the Potato plant and its geographical distribution, that were likely to be of practical value to cultivators."

After a critical examination of twenty so-called species of tuber-yielding *Solanums*, Mr. Baker could only regard six of them "as possessing a fair claim to be considered as distinct species in a broad sense," the majority of the others being regarded as forms of *S. tuberosum*, from which in his opinion "all the numerous varieties of Potatoes in cultivation originated." The six species, each having its own climatic peculiarities, are *S. tuberosum*, *S. Maglia*, *S. cardiophyllum*, *S. Commersoni* (syn. *Ohroni*), *S. Jamesi*, and *S. oxycarpum*. In his remarks on these the prospective value of *S. Maglia* as a seed parent was first pointed out in the following words:—"As far as climate is concerned it cannot be doubted that *Solanum Maglia* would be better fitted to succeed in England and Ireland than *S. tuberosum*, a plant of a comparatively dry climate."

The differing characters of the two species, *S. tuberosum* and *S. Maglia*, were concisely and lucidly explained by Mr. Arthur W. Sutton in a letter which appeared in the *Times*, and was reproduced in this Journal, page 523, vol. ix., December 11th, 1884:—"Solanum Maglia was discovered by Darwin in the Chonos Archipelago, and is remarkable as having for its habit at low-lying marshy places near the coast, whereas *S. tuberosum*, from which the cultivated Potato springs, is a native of the higher Andes, where rain is almost unknown." From these facts the following practical deductions were drawn—"As in a wet summer and autumn the Potato disease is invariably much more virulent, while in a dry season its ravages are reduced to a minimum, it has been thought that the constitutional aversion of *S. tuberosum* to wet has probably induced its susceptibility to disease. On the other hand, it is hoped that the preference shown by *S. Maglia* for a damp soil and moist climate may lead to its being a parent of a new race of parents far more suitable to the climate of the British Isles."

With that object Lord Cathcart, determining to profit in the best manner available, from the suggestions of Mr. Baker, sent tubers of *S. Maglia* and *S. Jamesi* to Reading in March of last year, and Mr. Sutton also obtained examples of *S. Ohroni* (*Commersoni*) from M. Blanchard of Brest. All these were well grown, and though every effort was made to cross the two latter with cultivated varieties of Potatoes, the essential differences between the plants were so great

that the attempt failed. But what is of more practical importance, three fully developed berries filled with seed were obtained from *S. Maglia* as the result of fertilisation with a variety raised by Mr. R. Fenn, and not yet in commerce. Though *S. Maglia* has been grown at Kew for upwards of twenty years, and two tubers of it were sent by Mr. Caldecleugh to the Horticultural Society's Gardens at Chiswick in 1823, and gave a yield of about 600, no instance is known of the species producing seed before. What may be the outcome of the Reading success it is impossible to anticipate. The results are already most encouraging, and may be of far-reaching importance. Lord Cathcart and Mr. Baker cannot fail to be gratified by the produce of the *Maglia* seeds, and they share the honour with Mr. Arthur Sutton in producing one of the most remarkable collections of Potatoes that has ever been arranged for examination.

From the seeds referred to twenty-eight plants were raised, and the produce of these plants, with representative examples of *S. Maglia*, *S. Jamesi*, *S. Commersoni*, and *S. tuberosum*, are systematically displayed in one of the offices in Messrs. Sutton's trial grounds. Baize-covered tabling is fixed round the sides of the building, divided with laths into as many compartments as there are varieties and species for occupying them, the first twenty-eight being the *Maglia* seedlings. When these are examined, and it is remembered they are the produce of one species fertilised by one variety, a feeling of wonder can scarcely be suppressed at the extraordinary diversity of the progeny. There is a family likeness, more or less marked, between some of them, yet all differ, and in many instances the dissimilarity is extraordinary; and, further, all differ from the parent *Maglia* as represented in a heap at the end of the room. It is purplish red in colour, the tubers, which may be described as of fair table size, being the reverse of uniform in shape. Some are nearly round, others more or less irregularly oval; some twice as long as they are wide, others knobbed and of no describable shape. They have deep eyes, and, on the whole, have a coarse appearance rather than otherwise; but their starchy quality is indicated by the rough or cracked skin. They are very dense, cook beautifully white and mealy, and the quality is superior to that of numbers of varieties in cultivation. It may be stated here that although only one cross was effected last year, this year Mr. Sutton has succeeded in crossing *Maglia* with three varieties of admitted excellence—Reading Russet, Walker's Regent, and Paterson's Victoria.

The seedlings, now on view appear to have inherited the rough skin of *Maglia*, that is all. It is true some of them are coloured; but not one of these has deep eyes like the parent, but are as symmetrical as could be desired, while the few that follow it somewhat in shape have rejected its colour and are white. In hybridising it is customary to have regard to form and habit in the seed-bearing parent, and to rely on the pollen-bearer for imparting other qualities; but here the form and character of *Maglia* are practically lost, and the dissimilarity in the growth of the plants is as great as in the configuration of the tubers, while the divergences in ripening and weight of produce are equally great.

The stems varied from 12 inches to 75 inches in height; the period of ripening extended over three months, the earliest being lifted at the end of June, the later varieties the end of September, and the yield ranged between 6 grains as the lightest weight from one plant to 2 lbs. 12½ ozs. the heaviest. It should be stated the seed was sown in March of the present year, the seedlings potted, and the whole of them planted out on June 11th. The smallest tubers are not larger than peas, the largest (only one) of good size for table, the majority ranging between the size of Damsons and Victoria Plums, those of one variety (No. 14) being the colour of that Plum. There are forty-three of them, weighing 1 lb. 7½ ozs., and the plant grew 54 inches high. It is noticeable that the taller the plants the later they were in maturing, and the heavier the yield. For instance, No 13 grew 54 inches high, produc-

ing sixty-one tubers weighing 2 lbs. 1 oz., white, of the shape of Paterson's Victoria. No. 19 grew 62 inches high, produced forty-four tubers weighing 2 lbs. 12½ ozs., blush, with eyes of the smallest and a variety of promise; this plant flowered. No. 22 grew 75 inches high, produced twenty-nine tubers weighing 1 lb. 9½ ozs., a flattish round variety with white crackled skin. The tops of four varieties were taken off and struck as cuttings with the object of increasing the stock, but the experiment failed, for the seedlings "bled and died;" but one of the plants—a cutting from a seedling—attained a height of 70 inches, producing eleven tubers, which weighed 1 lb. 2½ ozs., one of them large enough for cooking. This is a white round variety, and promises well as a cropper. All those mentioned ripened and were lifted in September. By way of contrast it may be noted that the combined produce of three plants that only grew a foot high, and lifted early, was only thirteen tubers weighing 28 grains. It is not necessary to particularise other varieties, as sufficient is said to indicate the character of these interesting seedlings.

The hope of substantial improvement rests in the production of strong-growing, great-cropping varieties of good quality, and there are not wanting indications that some such may be found in the Maglia race under notice. All past experience proves (the experience of "disease years") that of late, and consequently the most productive varieties, only those possessing inherent vigour, great leaf power, and woody upright stems, can resist the murrain, such, for example, as Redskin Flourball, Magnum Bonum, Scotch Champion, and others of similarly robust growth. It is much too soon to rejoice at the Potato disease being banished. The fungus will in all probability be seen again when climatal conditions are favourable to its growth, and it will be fortunate if varieties of Potatoes are then established that will resist its rapid increase and development. If the "fresh blood" of *Solanum Maglia* will contribute to this end, those who have been the means of its introduction will deserve well of their country. The species itself is not disease-proof, as weak plants of it have been affected; but strong plants, or varieties raised from it with more ligneous stems, may have greater disease-resisting power, and further experience with the varieties now raised and others to follow will be watched with interest by growers of Potatoes in this and other countries.

In the consideration of this question, the employment of *Solanum Maglia* as a seed parent, it is difficult to resist the impression that this species has not already had some share in establishing the present race of cultivated Potatoes. It has a much closer resemblance, both in its habit of growth and character and quality of tubers, with cultivated varieties than *S. tuberosum* has. Its improvement by cultivation in this country is much more decided than that of any other species; and it is perfectly clear that the Reading seedlings possess all the characters of English commercial Potatoes. There is nothing whatever, so far as regards the appearance of the tubers, suggestive of a different race, and there is at least a possibility of the Maglia species having been confused by old botanists with *S. tuberosum*, and consequently of the pollen parent employed at Reading being a descendant of *S. Maglia*. The published descriptions of the species Maglia and *tuberosum* in old and even comparatively modern works is very unprecise, and in several instances one might do for the other, for the sufficient reason that one writer appears to have relied on the other, at least to a very great extent.

One prominent characteristic of *S. tuberosum* seems to be pretty generally admitted—namely, the tubers being bitter, while those of *S. Maglia* are not. There is no suspicion of bitterness in the Reading stock, which is admittedly true. The tubers of Maglia already referred to as sent to Chiswick by Mr. Caldcleugh, and grown there sixty years ago, were also, according to Mr. Baker, undoubted examples of *S. Maglia*, and the figures of both of the tubers and growing stem represent the species grown at Reading much more closely than they represent *S. tuberosum*. Even the figures in both editions of Gerard's "Herbal" resemble *S. Maglia*,

especially that in the second edition by Johnson, which was borrowed from Clusius. What evidence is there that the Potato of Gerard (which he received from Virginia) was not *Solanum Maglia*? A botanist receiving a tuber-yielding *Solanum* that he had never seen before would quite naturally call it "*tuberosum*;" and it does not seem extremely probable that early explorers would pass over the coast plant called by the natives Maglia, and penetrate into the interior of the country, and only send home tubers of the true *S. tuberosum* found on the high mountain sides; as, apart from the trouble, not to say danger, involved, they would be collecting the inferior species. Caldcleugh's tubers were sent to Chiswick as *S. tuberosum*, and described as being bitter in Chili, but when grown they proved to be in flavour exactly like the young cultivated Potato. They were Maglias. The collector had apparently made a mistake, and it is at least conceivable that others may have fallen into a similar error. Even such famed botanists as Dunal and De Candolle accepted Sabine's figures of the Chiswick specimens as *S. tuberosum*. "There cannot"—to quote Mr. Baker's words—"be any doubt that they represent excellently the present type" (Maglia). Yet Mr. Baker, after all his laborious investigations and examinations of dried and living specimens, is "fully satisfied that all the numerous varieties in cultivation originated from *S. tuberosum*." This verdict may be correct, and supported by evidence that has not been made public; but at the same time it is impossible to overlook the weight of the Reading experiments, which tend to the contrary; and further, apart from possible mistakes of collectors, it must be asked, What became of the six hundred undoubtedly Maglia tubers raised at Chiswick? If, as is not unlikely, they were distributed among the members of the Society, have they left no impress on the varieties now in cultivation?

In reply to this question it may be asked in what manner their influence could be conveyed, since *S. Maglia* is not known to have produced seed before last year. And it can also be said that the flowers at Reading produced no pollen. It does not follow, however, that they produced no pollen elsewhere. As a matter of fact flowers of *S. Maglia* have produced pollen which has been gathered by Dr. Hogg, who grows the true species, so that it is not impossible that seminal changes have resulted from the casual distribution of the "six hundred," or from the introduction of *S. Maglia* under the name of *S. tuberosum*.

But quite apart from that contingency (fertilisation), changes can be effected by the sporting of growths and tubers. It is well known that pure white tubers have occasionally been taken from roots of red Potatoes, and *vice versa*, and that these "accidentals" retain their character. A striking example of sportiveness may be seen in the Reading collection, for already a white Maglia has been produced. The tubers of *S. Maglia* appear to vary somewhat in colour. Some of those sent by Lord Cathcart to Mr. Sutton were much paler than others, and the stock was thus divided into two sections; but the colours were not fixed, as the produce of both lots was practically identical; yet during the past summer one of the stems of a plant was light in colour (the prevailing colour of the stems is reddish). This light stem was taken off as a cutting, and the plant so established has produced white tubers, having all the appearance of tubers raised from a cultivated variety, and as such according to botanists a descendant of *S. tuberosum*. However this may be, there is every probability that next year varieties the produce of *S. Maglia* will be grown identical in character with Potatoes in general cultivation.

Humboldt, in his essay on New Spain, believes the plant described by Molina under the name of Maglia is the original stock of this useful vegetable. In De Bry's collection of voyages Heriot's report of the country visited by Sir Walter Raleigh is included, and the Potato is referred to as having tubers as large as Walnuts, some much larger. They grow in "damp places," and are good for food either boiled

or roasted. This is descriptive of *S. Maglia*, and Heriot was in the expedition of Raleigh when tubers were collected and brought to Ireland.

It has been observed that the figures of Clusius and Gerard (1633) are identical, the former work being published in 1601. Twenty years afterwards Bauhin's "*Prodromus*" appeared, with an original figure of a Potato plant. This perhaps still more closely resembles *S. Maglia*, and has scarcely anything in common with the figure of *S. tuberosum* as prepared at Kew and published in the Linnean Society's Journal. It is true there are a few incipient leaflets between those of full size, but these are not nearly so marked as in Baker's figure; while the whole character of the plant, and especially the large cordate terminal leaflet, is almost identical with Baker's figure of *S. Maglia*. This broad terminal leaflet is seen in late strong-growing varieties of English Potatoes, but is less prominent in the early Ash-leaved varieties, and these, too, have as a rule a greater number of leaflets, and of more uniform size than is common with the stronger and later section.

Mr. Baker's figure of *S. tuberosum* has a general resemblance to the Early Ashleaf type, and that species may have been the progenitor of this race, which, from a cultivator's view at any rate, is distinct from the other. This is a question for the consideration of botanists, and it may be mentioned that Dr. Hogg has failed in his attempts to cross *S. Maglia* with an Ashleaf; but Mr. Sutton has succeeded in crossing it with another variety. The question is, Is the Ashleaf a true descendant of *S. tuberosum*, and with little or no mixture of *Maglia* in its constitution?

Mr. Sutton grew thirty-six plants of the wild *S. tuberosum* from seed sent him by Mr. Thiselton Dyer of Kew sown last April, and treated exactly in the same manner as the hybrid seedlings. The total result from these thirty-six plants was sixty-eight tubers, weighing in all $1\frac{1}{2}$ oz., which bears but a poor comparison with some of the single hybrid plants. He also grew the wild *S. tuberosum* from a tuber obtained from the College of Pharmacy at Philadelphia, which was discovered by Professor Lemmon on the Xuachuca Mountains at an elevation of 9000 feet. The result of this plant was several small and apparently worthless tubers. In neither case would the plants of *S. tuberosum* cross with any of the cultivated forms of the Potato that were tried at Reading.

There is no increase in size in the case of the Philadelphia tubers, and those raised from seed are now about the size of the one tuber received from Philadelphia last winter.

Many attempts were made to cross *S. tuberosum* with the cultivated Potato, but in no single case was any result obtained. On the other hand it was found comparatively easy to cross *S. tuberosum* with *S. dulcamara* (Wild Nightshade) and *S. nigrum*.

The true Ashleaf Potato seldom flowers, but if flowers of the smallest form, called on the Continent the Marjolin, can be produced as Knight produced them by preventing the development of tubers, and pollen obtained, it will be worth while trying its effect on *S. tuberosum*.

Under any circumstances, Mr. Arthur W. Sutton is to be warmly congratulated on what he has so far accomplished in the important work with which he was entrusted, and we look forward with interest to the result of the experiments that will be conducted next year, other important crosses having been effected with *S. Maglia*.

THE COMING RACE OF ROSES.

If "A. C." will refer to page 82 I think he will hardly consider the report of Etendard de Jeanne d'Arc a very favourable one, and in fact this Rose seems likely to turn out "quality No. 2," for the whole appearance of the plant indicates a recurrence to the Bourbon side of the family, and quality is not the Bourbon's strong point. Deducing a hybrid's origin from its outward characteristics or habit may perhaps be objected to as only presumptive, and therefore inadmissible; but as there are so few records of the origin of Roses (and even those preserved generally give only the seed parent), until the hybridisation of these plants be much more

exactly effected and noted, no other method of classifying the bulk of the florists' varieties exists. That the origin of a hybrid may be fairly accurately deduced from the evidence of its exterior is indicated by cases where the exact cross has been recorded. Moreover, it is well known that seedlings raised from a hybrid frequently show a tendency to revert to the form of one of that hybrid's parents. Now it has long been held that Gloire de Dijon originated from the crossing of some Tea-scented Rose by a Bourbon variety. True, there was no yellow Bourbon that could have assisted in the production, but then Gloire de Dijon is only a yellow Rose by courtesy on a north aspect, and the opaque colour (as in Bourbon Queen) that seemed to overlie the yellow in the petals, the flat expanded flowers with the stamens all hidden by the doubled-over petals (as in Souvenir de la Malmaison), and the broad leathery leaves, were deemed sufficiently conclusive evidence. Myriads of seedlings have been raised from Gloire de Dijon, many inclining more to the Tea-scented type, as Belle Lyonnaise, &c., until now comes the white Etendard de Jeanne d'Arc, which at a little distance looks like the ghost of a Souvenir de la Malmaison. This seedling therefore affords an additional indication by reverting to a Bourbon type that the supposition, founded on its external characteristics, of Gloire de Dijon having been a hybrid between a Tea and a Bourbon was well grounded, and this may serve as an argument in favour of reasonable deductions of a similar kind in other cases.

To cite two other well-known varieties from the list of Hybrid Perpetuals in the National Rose Society's illustrated catalogue. La France is a Rose which, with its smooth dark glossy foliage, extreme freedom of flowering, and manner of growth, together with the delicate form and texture of its slightly pendulous blooms, at once recalls the general habit of the Tea-scented varieties, and we have M. Guillot's word for it that its seed parent was a Tea. While M. Lacharme's statement that Captain Christy resulted from a cross between Victor Verdier and Safrano may be readily credited from the outward appearance of this beautiful and worthily named Hybrid Tea—a term, by the way, that seems greatly to exercise some people's minds; for at a certain Rose show this year a medal for the best Hybrid Perpetual in the exhibition was awarded to a bloom of Lady Mary Fitzwilliam, a Rose in many ways resembling Captain Christy, and especially so in being of similar origin, for its raiser (Mr. Bennett) states that it resulted from a cross between Victor Verdier and Devoniensis. The judgment, however, was subsequently reversed, on the alleged ground that Lady Mary Fitzwilliam was not a Hybrid Perpetual. The question immediately arose, What is a Hybrid Perpetual? Is it a hybrid that flowers a second time in autumn? Clearly not, if Lady Mary be not one, for the second flowering of that Rose is as free as its first. Is it a hybrid in which there is no Tea blood? Certainly not; for in the National Rose Society's catalogue the best known Hybrid Teas, La France and Captain Christy, are classed as Hybrid Perpetuals, as they always have been since the date of their introduction. It would seem, therefore, that Lady Mary Fitzwilliam has been held to be not a Hybrid Perpetual, either because it flowers freely again during the autumn, or else because it is of similar race and origin to several other well-known Hybrid Perpetuals. Canon Hole might apparently have added another abstruse appellation to the amusing list on page 183 of his "*Book about Roses*." The National Rose Society did their best to uphold the cause of common sense by awarding the silver medal for the best Hybrid Perpetual in their Northern Show at Manchester to a bloom of Lady Mary Fitzwilliam, and no doubt the required definition will soon be forthcoming to remove the possibility of future heartburnings over such confusion as to the meaning of terms.

Now if the parents of a hybrid may be fairly accurately judged from its outward appearance, so it may also be surmised, though not with nearly so much certainty, what would be the result of any given cross. We already have varieties with perfect flowers in almost every shade of colour, and the demand that raisers in future will have to supply before Rose-growing will become as universal as it ought to be will be for varieties of equal beauty and much more vigorous habit of growth and more certain perpetuity of flowering—a quality which in a Rose of mixed race may be considered for the moment while "awaiting further instructions" to constitute a Hybrid Perpetual. Thus Louis Van Houtte and Marie Baumann, two perfect Roses when doing well, are in many localities but poor growers, and often die out after two or three years. Why should not some vigorous autumnals be fertilised by these more beautiful Roses, with a view to obtaining seedlings that shall unite in their strength and beauty the best points of their parents? It is with this view that rosarians should not be in haste to condemn such varieties as Madame Isaac Pereire to whom, even though expressions of contempt may sometimes cause her to glare green-eyed with jealousy upon her more beautiful sisters, a rough

exterior will be readily forgiven if she shall become a mother of giant heroes. In the same way Gloire Lyonnaise must not be at once discarded because it is not perfectly full, for it is distinct and very vigorous, and the thin Roses are the best seed-bearers. So let it be fertilised with all sorts of other varieties, and see if it will not give us seedlings worthy of the raiser of La France. For it cannot be expected that a race of faultless Roses shall spring up all of a sudden, and for a long time advantage must be taken of any valuable characteristic that any variety may possess. Thus at first there will be vigorous growers with fine flowers, but, subject to mildew, or not autumnal, good autumnals resisting mildew, but with flowers perhaps dull in colour or faulty in shape, and so on. There are already at any rate two Roses, George Baker and Mrs. George Dickson, that seem to have a wonderful power of resisting mildew, and additional encouragement to persevere in attempting to perpetuate this characteristic should be found in the success which has attended the efforts to raise seedling Potatoes capable of resisting disease. In the meantime rosarians must be content to wear their Roses "with a difference," and should be alive to the necessity of opposing a tendency to consider only the floral distinction without regard to main device displayed when criticising a cadet of the Rose family.

It was hoped that a beginning in really vigorous Hybrid Perpetuals had been made by Madame Gabriel Luizet; but unfortunately that vigorous and free-flowering variety seems to have been obtained by means of some summer Rose, so that it is a victim to mildew, and is very chary of its flowers in autumn. Lady of the Lake seems to have the vigour, but not the perpetual blooming. Perhaps Her Majesty will prove the paragon of all the virtues that her title implies.

But evidently these are the points to strive for in future in raising Roses—vigour of growth, perpetual bloom, and freedom from mildew; and let it be hoped that the lull in the rush of novelties alluded to by "A. C." may be owing to the growing conviction in the minds of raisers of the necessity of these qualities. It is quite possible that there may be shades of colour between which yet another may stand and be held distinct, but if there be not vigour no progress is being made. A perfect bloom of Mrs. Laxton, Constantine Tretiakoff, or Olliver Delhomme is as lovely as may be; but there will be deaths among such varieties every year, and it is this kind of Rose with no constitution that disheartens would-be growers who have not the time to give to their gardens which more fortunate enthusiasts manage to afford. And therefore it is important, without carping too critically at the imperfections of really vigorous Perpetuals of strong constitution, but noting their good qualities, to try and obtain from them such varieties that those who most need them, working hard elsewhere than in gardens, may in their brief leisure be refreshed during summer by first-rate Roses, which shall be there again to welcome them on their return home in September after their August holiday.—T. W. G.

CANKER IN FRUIT TREES.

I do not intend to trouble your readers with any lengthy remarks again on this subject. I happen to have an opportunity to send by a friend a young specimen tree, completely refuting the root theory of "Lathyrus's" cause of canker, page 247. The roots of this tree have never been 6 inches below the surface or in the subsoil. "Lathyrus's" treatment is excellent I have no doubt, but if I cure canker without disturbing a root by very careful pruning—i.e., cutting out all the cankered wood, and so getting rid of that containing the insects as I advised, I contend the cause is easily detected above ground.

I am well acquainted with half a dozen kinds of insects occupying cankered places, although I am unable to name all, but perhaps our friend "Entomologist" can give the name of the tiny fellows which are invariably found in every instance. I admit I assume these to be the cause of canker, for the good reason that they are always underneath the dying bark, and consequently cannot be seen eating it as we see a horse or cow grazing in the field. I should be sorry to charge even an insect wrongly, but why are we not to believe them to be the cause if always found there? We charge aphides, scale, mealy bug, thrips, and others with mischief without actually seeing them eat our trees and plants. If I get rid of canker by getting rid of the insects, I want no better proof of them being the cause and not the effect of canker. An hour with the microscope is of more use in such a case than any amount of writing.—J. HIAM.

[Some examples of cankered wood sent by Mr. Hiam have been examined by "Entomologist," who remarks on them as follows:—"The portion of Apple wood sent contained only a few perfect mites, but many exuviae and portions of bodies, suggesting that this species had been preyed upon by some parasite, presumably of the same tribe, but of another family. To ascertain positively the name of this insect would require an examination of various specimens by high microscopic power, and the group is acknowledged by continental observers, who know much more about the Acari than we Britishers do, to be one of unusual difficulty; the names are hard to determine, and their habits are obscure. I

feel, however, that I can hardly be in error when I pronounce it to be one of the beetle mites of the genus Hoplophora, and probably the victim frequently of a parasite nearly as large as itself, a Tyroglyphus, belonging to the cheesemite division of the Acari. How perplexing these creatures are is shown by the circumstance that what some naturalists regard as the adult stage of some Hoplophoræ has been considered by others to be a parasite which has lived in the skin of the mite which has been the vegetable feeder. The solution of these difficulties would not materially affect the question whether the insect is the cause or the result of the canker." Claparède of Geneva, who studied particularly one species of Hoplophora that occurs on the Fir, where it makes burrows of some length, remarks that it is found upon wood that is moist and decaying. A species was detected by Mr. A. Murray upon the roots of the Vine, but this appeared only to be present where phylloxera had brought the plant into an unhealthy condition. Such facts rather favour the theory that these mites make their attack on Apple wood when it has passed into a sickly condition."

Referring to the young tree sent by Mr. Hiam, we have to say that though the roots are quite clean, the union of the scion with the stock is so faulty, and the ligatures that had been employed were left in position so long, that the tissue was ruptured and the sap vessels contracted and obstructed to such an extent that the tree could not possibly flourish, no matter how good the soil might be in which it was planted.]

NOTES AT UPPER HOLLOWAY.

ORCHIDS.

MR. B. S. WILLIAMS' nursery at Upper Holloway has become so celebrated for its wonderful collection of Orchids, that a visitor naturally proceeds first to the houses devoted to them, and though October is not a month in which to expect a great display, it is surprising how many beautiful and rare plants are flowering there now. They are mostly scattered through the collection, but were they gathered into one house quite a gay little exhibition would be formed. In several of the houses there are banks of attractive plants facing the doors, and comprising the following—*Zygopetalum Gautieri*, a purple-flowered form, much in the way of *Z. maxillare*. *Vanda cerulea* is represented by several plants of good varieties, one bearing a spike of nine flowers. *Cattleya Gaskelliana* is also handsome, bearing flowers freely, four or more in a spike, the sepals and petals bluish-tinted, the lip rich crimson with an orange throat. This is notable for the long period the flowers remain in good condition, those we saw having been expanded for three weeks, and they still looked quite fresh. *Cattleya superba* is represented by a grandly coloured variety; the bright yellow *Oncidium varicosum*, the graceful pale violet and white *Ionopsis paniculata*, and the old well-named *Odonoglossum grande* add their charms to the groups. Late-imported plants of *Oncidium concolor* are flowering now, this being a habit which Mr. Williams has repeatedly observed in this useful Orchid. *Oncidium pretextum* has several panicles of brown flowers. *Sophranitis grandiflora* has some large and brightly coloured flowers. *Leptotes bicolor* is charming suspended in small pots, its narrow white sepals and petals contrasting pleasingly with the crimson-purple lip. *Oncidium tigrinum* has numerous flowers. *Laelia autumnalis atro-rubens* is an exceptionally richly coloured variety, the flowers being flushed with deep crimson.

The lovely little *Pleiones maculata* and *lagenaria* are in capital condition, the former with white sepals and petals and crimson-spotted lip, the latter with pale purple sepals and petals, and a white lip with crimson streaks and tip. A few potfuls of these, with the larger *P. Wallichiana*, are particularly pretty at this time of year. They are now assigned to the genus *Cœlogyne*, but it will be a long time, for the much better sounding garden name will become obsolete. They have only one defect—viz., flowering without foliage, and to remedy this a few young Ferns are annually planted in the pots or pans with them. Another useful plant that is destined to become a great favourite is *Dendrobium Vealei*, of which Mr. Williams has an uncommonly fine specimen. The flowers are pure white with broad rounded petals, and are produced with great freedom, rendering them well adapted for cutting, and as white Orchids are scarce they will be much appreciated for that purpose. The plant in question has four racemes each with ten to fourteen flowers, that with the last named number being one of the finest we have seen. *Cypripediums* are represented by *C. punctatum violaceum*, one of the best of the insigne type; *C. Sedeni* with dozens of its rosy flowers; *C. Spicerianum*, now an established favourite; and *C. Harrisonianum*. *Cattleya Regnellii* is showing flower. *C. Harrisoni violacea*, having crimson sepals and petals, a white lip, and a crimson throat, is handsome; the curious *Cœlogyne Massangeana*, with white, buff, and brown flowers; the famed Dove Orchid, *Peristeria elata*, the old *Oncidium Lanceanum*, and several fine *Vandas* of tricolor insignis, Warner, and Dalkeith varieties are all both beautiful and interesting. The grand plants of *Cattleyas* are in the best of health, and showing sheaths as abundantly as could be wished.

In some other houses there are large stocks of choice Orchids, such as *Dendrobium superbiens*, which is remarkably well grown at Upper Holloway, though it is reputed difficult to obtain in satisfactory condition. None of this difficulty appears to be experienced at the establishment named, for the plants grow and flower splendidly. The temperature in winter falls as low as 57° occasionally, but the chief point in its success is considered to be providing a light position fully exposed to the sun to ripen the growth. It is a handsome Orchid, and worthy of all the attention needed, as the flowers last for an astonishing time. In the same house *Vanda teres* and *V. Hookeri* are grown with similar success, and look most vigorously healthy. *Dendrobium Ainsworthi*, *D. Bensoniæ*,

and *D. Waltoni*, a variety of the crassinode style, are growing most strongly, while large numbers of *Calanthe Williamsi* have made wonderful pseudo-bulbs in 60-size pots. Some of the pseudo-bulbs of this charming addition to the genus are 9 inches high and 3 inches in diameter. In the cool houses is an extensive stock of *Masdevallias*, *Odontoglossum*, the cool *Oncidiums*, and other plants. Varieties of *Odontoglossum* *Alexandrae*, *Pescatorei*, *Ruckerianum*, *Andersonianum*, and *nævium* are flowering now, several being of great beauty. There is a surprising stock of *Epidendrum vitellinum majus*, at least 500 plants being suspended in one house, and there is about the same number of *Barkerias*.

MISCELLANEOUS.

But there is much besides Orchids in Mr. B. S. Williams' houses; much more, indeed, than can be enumerated now. A few jottings may, however,

basket Fern, *Adiantum dolabriforme* (fig. 58), which might well be added to any collection of Ferns. It is of similar habit to *A. lunulatum*, but instead of being deciduous, as that species is, it is evergreen. The pinnules are also rounder, and the fronds bear at their tips young plants like several other species of this section. The character of the plant is faithfully shown in the woodcut (furnished by Mr. B. S. Williams).

The *Nepenthes* constitute a beautiful display in the long house devoted to them, there being some hundreds of pitchers of fine proportions and variously coloured, all the best forms being represented, and several promising novelties are also coming forward. In other houses there are hosts of *Ixoras*, *Dipladenias*—which have long been a feature in this nursery—*Tabernaemontanas*, and *Gardenias*. Then in cooler houses are magnificent specimen *Camellias*, *Rhododendrons*, *Ericas*, and miscellaneous hardwooded plants innumerable. The collection of Heaths is



Fig. 58.—*ADIANTUM DOLABRIFORME*.

be given concerning the most prominent. Of general stove plants the stock is a very large one, comprising all the best of both the flowering and foliage types. The collection of Ferns is particularly rich, all the most ornamental genera being well represented by their best species, while those gems of the Fern world, the Filmy Ferns, *Todeas*, *Trichomanes*, and *Hymenophyllums*, are especially strong in numbers, including many rare and choice species. Of *Gleichenias* there are some fine specimens, which, for clean healthy growth could scarcely be surpassed. *Adiantums* are also largely and well grown, all the old favourites and the new introductions being included. Amongst the latter is a very graceful

an excellent one, the plants being just of a suitable size and in fitting condition for growing on into specimens for exhibition. It is regrettable that so many handsome *Ericas* have lost favour in gardens, but it seems very probable that they will regain the popularity they so well deserve.

EFFECTS OF EARLY PRUNING ON VINES.

SEVERAL correspondents have touched upon this subject, and the balance of opinion at present rather favours the idea that moderately severe shortening of the laterals is beneficial rather than injurious. Mr

Gilchrist, however, rather misinterprets the sense of my remarks, especially with regard to cutting back the laterals that have perfected exhibition bunches. What I plainly stated on page 274 was that those early and most severely pruned laterals do not, according to my experience, produce nearly such fine bunches the following season, but I did not express the opinion or imply that the remaining spurs would be also weakened. Then if this happens in the case of these particular spurs it is quite possible for much injury to be done by a wholesale premature shortening back. The instance I gave of such an injury apparently thus accruing may perhaps add but little to my theory, as overcropping, as Mr. Gilchrist suggests on page 321, may have been the sole cause. There is not the slightest doubt, I should say, about the wisdom of the judicious shortening of the laterals, and my object in referring at length to the by no means new practice was both to elicit opinions from others more experienced in the matter than myself, and also to warn others from a reckless abuse of the system. We cut this season about eighteen bunches of Black Hamburg for exhibition purposes, and in some cases we were almost unavoidably obliged to cut away the laterals to within 3 or 4 inches of the rods, and this from experience I can safely assert will result in the formation of smaller bunches on those particular spurs. They will, however, be marked and the results duly noted, and next season I hope to hear of a good many growers' experience in the same direction.

Now that so many of us have caught the "Chrysanthemum fever" early pruning will be extensively resorted to "in order that they may let in more light to the Chrysanthemums that have to be put inside;" but let us hope this "letting in of light" may not be overdone, the "Mums" being unduly favoured at the expense of the Vines. It must be remembered that it is in the autumn when the latter recoup their nearly exhausted energies, and it is at this time that the root-action should be particularly brisk, and if we remove the foliage at a wholesale rate we greatly diminish both the storing up of food and the formation of fibre. On the other hand, if we gradually shorten the laterals so as to leave about four or five fully developed leaves, these are sufficient to maintain a reciprocal action with the roots, and will store up the bulk of the food where it is most desirable—viz., at the base of the laterals. This judicious shortening also favours thorough ripening, and lets a certain amount of light into the house, but certainly not enough for a bank of Chrysanthemums, unless the Vines were either early or more thinly disposed than is usually the case.

In reply to "J. L. B." concerning the advisability of an early removal of the lower sub-laterals, I can only remark that in this as in many other cases very much depends upon circumstances. Our main rods are 42 inches apart, and we can therefore lay in the laterals to a good length, which we do, and closely rub out all the sub-laterals. All we aim to secure, whether rightly or wrongly, is plenty of fine foliage without nudely crowding it, and I fail to see what good the retention of the sub-laterals would do. Where the rods are only 2 feet or rather more apart, the laterals must be necessarily correspondingly short, and in this case the removal of the sub-laterals might very probably result in the premature bursting of many of the buds. Besides, if it is an undoubted fact that the leaves all contribute to the stock of stored-up sap, and if we cannot have them in one place we must preserve more in another.—W. IGGULDEN.

THOUGHTS ON CURRENT TOPICS.

I SHALL always be glad if any correspondent will advance a few ideas for me to think about. If they are good I will endeavour to profit by them; if of the other sort try to make the best of them. Our old critic "Non-Believer" has been tempted from his obscurity once more. Faithful to his *nom de plume* he only writes to oppose. His unbelief appears to be of a genuinely chronic kind, and the more attention he bestows on my humble efforts the greater the honour—to myself.

I DARE SAY your acute correspondent thinks he has fixed me on a crucial point—the degradation of exhibiting as exemplified in promoters of shows having as a main object the attraction of visitors and consequently good financial receipts in the form of gate money. But I shall survive the soft impeachment (no emphasis on the "soft" please). If the proceeds of horticultural exhibitions were appropriated by the managers, then their action would be "low" indeed and absolutely indefensible; but as it is not so, as numbers of them work zealously and gratuitously, and are out of pocket into the bargain, I am prepared to say their procedure is commendable.

LET us think the matter over calmly before passing a verdict of condemnation on the managers of exhibitions who strive to do their duty. In the first place "where does the money go" that is received for admission? First to the necessary administration, then in the form of prizes to successful competitors. If gardeners were content to show for smaller prizes, and esteem the honour of winning a reward in itself, plus costs incurred, persons who are responsible for the success of societies would be delighted, as they would be relieved of a great cause of anxiety in respect of the finances.

THE fact of the case is this—nine-tenths of those who make themselves responsible for the success of exhibitions of garden products are imbued with a deep love of gardening, and are animated with an earnest desire to induce others to love it too. They are willing to work almost night and day in what they believe, and I believe, and what I think the majority of the readers of these notes believe, is a worthy object, and the efforts they make to obtain the necessary means for achieving their end is, I respectfully submit, in every way creditable and not degrading.

THE greater the number of visitors who attend shows the better in every way—the better for the visitors, who not only derive pleasure from inspecting the products of skilled cultivators, but are animated with a desire to become cultivators too, and thus a wider and deeper interest is taken in the art of horticulture. The more visitors the more money; the more money the larger the schedules and better the prizes; the better the prizes the greater the competition; and the greater the competition the better the products must be to secure honours. Thus it seems to me that superior culture is the most encouraged by those societies that are the most financially successful. When gardeners are willing to exhibit as well for small prizes as they do for large, and when the affluent will defray administrative expenses, it will be soon enough to denounce "gate money;" but such a millennium is not yet arrived, and judging by past episodes is not approaching. Instead of gardeners magnanimously ignoring money, I could tell of more than one who in their view had not received their "pound of flesh," threatened managers of shows with actions, and of disputed cases being settled under protest to avoid proceedings that would not have tended to the promotion of horticulture. I doubt very much if even "Non Believer" will non-believe that.

I THOUGHT it a little curious that, with the object of drawing up a "protest," the weight of the names of such once-eminent personages and old-time horticulturists as Mr. Knight, Mr. Wedgwood, and Sir Joseph Banks should be invoked. By the association of such personages with himself your correspondent may have given a literary finish to his production; but however eminent the quartet the trio at least knew little more about the management of horticultural shows of the present period than did old Mother Hubbard, and far greater authorities on the subject are the secretaries of Horticultural Societies now established, who know very well that without good financial support they are powerless to "encourage horticulture" in a satisfactory manner. They therefore exert themselves to obtain that which is a necessity of the very existence of societies, and those which are the most flourishing reward merit the best and advance the art and industry of horticulture the most effectually.

AFTER this defence of a body of men who are accused of being engaged in a "low" calling, "Non-Believer" may have some sort of excuse for rivetting me to a creed. He had none whatever before, and the critic who cannot discriminate between a narration of circumstances—the acts of others, and the formulation of a creed by the narrator, is either wanting in perception or is animated by an object of not a particularly elevating character. The credit of the suggestion, that I do not care whether fruit and flowers are well cultivated or not, rests with him who advanced it, and I have an impression that he will not have a rush of followers who will covet a share of the "honour." I have the happiness of entertaining a better opinion of others who may differ from me on sundry points, and envy not the disposition of any person who derives pleasure in searching for and attributing to others motives of professional disloyalty.

AS to the question of exhibiting summer Grapes only at late summer and autumn shows, I have as yet seen nothing to induce me to alter my expressed opinion, and if "Non-Believer" is in a position to say that he has never exhibited Grapes that were not ripe and in the best condition for table, and on that account received no prize for them, I shall attach more weight to his remarks than I am able to do at present. As I expect no declaration from others I am unwilling to make myself, I at once say that, whatever disadvantages I happen to labour under, I am at least not a disappointed exhibitor, and am absolutely without prejudice in discussing this matter.

NOR do I think all the writing that is indulged in will result in any satisfactory Grape competition in the winter on the lines that have been suggested. It will do good if it impresses on managers of shows the importance and even the necessity of greater care in the appointment of Judges; and if, as was previously mentioned, a line of guidance were appended to certain classes in the schedules, neither exhibitors nor Judges would have any excuse for any mis-

takes they might make. At the same time there need be no exclusion of varieties, and the collections staged would be as large, varied, and interesting as ever. The prizes offered for Grapes at Chrysanthemum shows are such as only local exhibitors are expected to compete for, and I am not at all surprised that the directors of the National Chrysanthemum Society should decline to vote such a large sum as would be needed for insuring a great display of late Grapes in January. And, besides, however well represented late Grapes might be at a show in midwinter, that would have no bearing on the incongruous association of varieties in summer and autumn and of size handicapping quality then, which is the real grievance with many. If there is to be a late Grape gathering let it be under the auspices of the Royal Horticultural Society at South Kensington, not a mere offshoot of a Chrysanthemum show at the tail end of the season.

I HAVE been requested to express an opinion on the subject of what may be termed half-pruning Vines in summer and autumn—that is, shortening the laterals to say half their length some time before the leaves fall. Mr. Iggulden, who seems to be a pioneer in introducing subjects for discussion, has doubts as to the soundness of that practice. Other correspondents have not. The differences, I think, may be resolved into a question of time. If a few bunches are cut very early with a good length of lateral, and before the foliage has deposited any material amount of nutrient matter in the stems, and at the same time the other laterals are permitted their full length and even to extend, it is conceivable that the shortened laterals would be weakened; but if the foliage is quite matured, or, in other words, if the laterals are shortened after the fruit is fully ripe (say in September instead of July), the case is entirely altered. I am of opinion, and it is founded on observation and experiment, that if as soon as the foliage shows signs of change, no harm, but rather good, is done to healthy Vines by a general shortening of the laterals, and it is certainly good for plants that have often to be placed in houses in the autumn long before the leaves fall from the Vines on the roof. If the crop of Grapes were cut, and it was desired to fill the vinery with Chrysanthemums, I should not hesitate a moment in shortening the laterals, provided, and this is important, at least four good leaves could be left on the portions remaining. That is my little contribution on this interesting subject, and it will depend on circumstances as to whether I refer to it again.

POTATOES have been to the fore again, as is natural at this period of the year. On this subject "A Plain Gardener" has made some practical suggestions. It is certainly important to know within a week or two when varieties are ready for lifting, and it seems clear that we are no longer indebted to Americans for new varieties. I suspect some of those regarded by your correspondent as "new" are more extensively cultivated than he imagines. Reading Hero, Reading Russet, Beauty of Hebron, and Schoolmaster I have seen grown in fields for market. Perhaps, as your correspondent is of such a utilitarian turn of mind, he will favour us with a short list of varieties that he has found reliable for maintaining a regular supply of superior produce—a little matter which in his zeal for "plain" information he appears to have overlooked.

ANOTHER bone of contention is thrown by "Euphrasia" for critics to pick at, and I may as well have a nibble before it gets stale. The "bone" is a soft one—Cucumbers. It is true they are often curiously judged. Sometimes it would appear as if the prizes were given for length of fruit, sometimes for weight, and occasionally for quality. It is not, I think, customary to award prizes to "varieties." The best judges give them to the best fruits staged, and they could not well do anything else; but at the same time quality is the first consideration, and fresh, uniform, short necked and nosed examples, a foot long, with the flowers adherent, are placed before coarser specimens of twice that length by competent judges.

I HAD no idea until I read the article on page 323 that Trinity College Botanic Gardens, Dublin, were so extensive and richly furnished as they appear to be. Your correspondent, according to his remarks at the bottom of the page, appeared to be somewhat bewildered as to know where to begin, and intimated that seven numbers of the Journal would be required for him to say all he desired. I thought, Now for something exhaustive and elaborate, but on turning over the page the great work was condensed into ten lines. Perhaps, after all, it is better to describe Mr. Burbidge's work in instalments. Many a good hint has been sent over from Ireland, and I always read Mr. Murphy's notes with pleasure.—A THINKER



THE Committee of the GARDENERS' ROYAL BENEVOLENT INSTITUTION will meet early in November to consider the proposed additions to the pension list. Baron Schröder, The Dell, Egham, has been elected Vice-President in place of the late Edmund Wilder, Esq.

— MESSRS. HODDER & STOUGHTON, 27, Paternoster Row, have issued a little volume on BIBLE FLOWERS AND FLOWER LORE, which comprises a series of papers that originally appeared in the *Jewish World*. It includes 151 pages, is neatly printed and bound, and gives a full account of the plants mentioned in the Scriptures. It is somewhat in the same style as Mr. J. Smith's work on this subject, but is not illustrated.

— RELATIVE to the GRAPE JOHN DOWNIE, a correspondent writes:—"I think both Mr. Downie and Mr. Dunn ought to take some notice of Mr. McIndoe's letter on page 310. It is said in Scotland that the raiser of John Downie had a black berry come in a bunch of Muscat of Alexandria, and the two seeds in this berry produced the two John Downies that are to be seen at Dalkeith. It will be interesting to know something more of this phenomenon."

— THE well-known plant collector, Mr. BENEDICT ROEHL, recently died in Austria at the age of sixty-two. Mr. Roehl had travelled widely in America, especially in the central and southern districts, and collected enormous numbers of plants; indeed, it is said that in one journey he forwarded 8 tons of Orchids to London.

— MANY florists will learn with regret that Mr. SAMUEL BROWN, Crompton Road, Handsworth, Birmingham, died on the 16th inst. at the age of seventy-one years. For more than forty years he has been a successful cultivator of the Carnation and Picotee, and has gained a much more than local reputation.

— WE learn that the Geneva Natural History Society offers a prize of 500 francs for the best MONOGRAPH OF A GENUS OR FAMILY OF PLANTS. It can be written in Latin, French, German, English, or Italian, and should be sent to M. le President de la Société de Physique Naturelle de Genève, à l'Athénée, Genève, Switzerland.

— A CORRESPONDENT recommends the following plan of PRESERVING DAHLIA TUBERS, which he says is practised by M. Viards-Clirot, vigneron et forestiere de l'Aube. He pulls up the roots about the 15th of October, and then leaves them to dry in the sun for several days. He then takes barrels with one end off, places hay at the bottom and round the sides, and fills up the central space with the clusters of the tubers, which are placed one above the other, covers with hay, so that the barrels should be well filled, replaces the end, and stands them in a dry place, to be opened again about the end of March.

— A WORK on FRUITS AND FRUIT TREES, HOME AND FOREIGN, by Mr. Leo H. Grindon, has just been issued by Messrs. Palmer and Howe, Manchester, which contains a variety of interesting historical particulars and folk lore relating to the principal cultivated fruits. We just notice the issue of this book now, but shall have occasion to refer to it at greater length another time.

— GARDENING APPOINTMENTS.—We are informed that Mr. Wardle is resigning charge of Mrs. Joicey's garden, Newton Hall, Stockfield-on-Tyne, to commence business for himself as landscape gardener and nurseryman; he is to be succeeded by Mr. Dundas Macrae, late head-gardener to Viscount Massereene and Ferrard, Antrim Castle, County Antrim, Ireland.

— MR. F. W. BURBIDGE, Trinity College Botanic Gardens, Dublin, sends us a choice collection of SEEDLING CROWN ANEMONES from St. Brigid's garden on the Hill of Howth, near Dublin, and remarks that "They are now (October) not so fine, of course, as they will be next spring (March), but still they are bright and beautiful at this dull season of the year. These flowers are the produce of seed sown in March last, 1885. They are extremely fine blooms for the time of year, large, full, and varied in colour, the tints being very rich and bright."

— THE EXETER APPLE AND PEAR SHOW that was held on the

22nd inst., appears to have been a great success. There were ninety-five exhibitors as compared with eighty last year; the number of classes fifty-three, as against thirty-eight; and the number of entries 734, against 522. In the competing classes 1690 dishes of Apples were arranged, representing 10,000 fruits; and 338 dishes of Pears, representing 1680. The entries in Tomatoes and other fruit brought up the total to 12,190. Besides these there were numerous exhibits not for competition. Among them the magnificent fruits exhibited by Messrs. Lucombe, Pince & Co. were conspicuous for their excellence. They had on view 336 dishes. The firm's collection of Pears was a splendid assortment of some of the choicest kinds. Messrs. Veitch & Son had an exquisite assortment of 130 dishes well displayed; and other exhibitors, not for competition, were Mr. Stokes, St. Thomas, who sent thirty boxes of French Pears; Mr. Moore, Torquay, whose collection of Tomatoes was very much admired; and Mr. Bunyard of Maidstone.

— AT the YEOVIL CHRYSANTHEMUM SHOW, which is to take place on November 17th in the Corn Exchange of that town, a silver cup, value £5, or cash if preferred, will be offered for twenty-four blooms, twelve Japanese, and the same number of incurved. Two of the National Society's silver medals and two certificates are also offered, as well as numerous prizes for table plants and fruits. The Hon. Sec. is Mr. C. Tite, Fair View, Yeovil.

— THE sixty-second ordinary meeting of the ESSEX FIELD CLUB will be held in the Loughton Public Hall, Loughton, Essex, on Saturday, October 31st, 1885, at half-past six o'clock. The following paper will be read:—"Mosses and their Allies, with special reference to those of Essex," by Professor Boulger, F.L.S., F.G.S., &c., Vice-President, E.F.C. In connection with Professor Boulger's paper, exhibits of herbaria and fresh specimens of Mosses (especially Essex forms) will be very welcome. The Secretary will be happy to pay carriage or other expenses incurred in sending up such collections to the head-quarters or to the meeting-room. Mr. W. Cole will exhibit on behalf of the Rev. O. W. Kenworthy, M.A., Vicar of Braintree, an interesting collection of stone implements, mainly found in the neighbourhood of Braintree and Bocking, Essex. The Hall will open at six o'clock for the convenience of exhibitors.

— THE Floral Committee of the NATIONAL CHRYSANTHEMUM SOCIETY held their second meeting of the year on Wednesday, October 28th, in the Westminster Aquarium. There was a small display of exhibits, although Dahlias and Tuberous Begonias were admitted besides Chrysanthemums. Several of the latter shown as new varieties were worthless as far as could be judged from the blooms sent, and the Committee will act wisely in restricting their certificates to really meritorious varieties. If they wish to add interest to the meetings they could invite growers to send blooms, and award cultural commendations for those deserving them. Mr. Wright of the Middle Temple; Mr. R. Owen Maidenhead; Mr. W. E. Boyce, Holloway; and Mr. Forbes, Roehampton, were the principal exhibitors, the first-named having some of the best blooms and varieties. Val d'Andorre, certificated at Kensington was also honoured here, and Mons. Freeman, an incurved scarcely in condition, was certificated. Mr. Wright also had good blooms of Souvenir d'Haarlem, a rosy-crimson Japanese. Mr. Forbes had M. Mousillac, Fleur de Bas, and M. Leon Brunel, the latter a curious quilled variety.

— MR. SYDNEY J. HICKSON, Batavia, contributes some notes to *Nature* on BOTANIC GARDENS IN JAVA, of which the two following paragraphs are interesting:—"On entering the gardens at Buitenzorg the stranger is at once struck with the wealth and luxuriance of the vegetation he sees, the great height of the trees whose trunks and branches are in many cases covered with heavy creepers, the dense copses of the different species of Bamboo, the eccentric-looking Screw Pines and the handsome Palm trees; but the scientific observer is also struck with the care that has been taken to arrange all these many varieties of tropical plant life in, as far as possible, their systematic order, and that each specimen has its scientific, and in many cases its Malay name also, clearly and distinctly printed on a little board by its side. Many families have probably more representatives in these gardens than in any in the world. The Sapotaceæ, for instance, so rarely seen in Europe, are here represented by a great variety of genera and species, and the Palmaceæ, the Rubiaceæ, the Burseraceæ, the Orchidaceæ, and other families have now a large number of rare and interesting representatives. The herbarium which is attached to the garden contains a large collection of dried plants and seeds collected together from the

many expeditions into the little or unknown parts of the Archipelago and from other sources."

— THE same writer continues—"The GARDENS AT TSI-BODAS are situated on the slopes of the Gedeh Mountains, at an altitude of 5000 feet, and here I found Dr. Treub at work in the comfortable little house which is attached to the gardens. From this spot a very wide range of vegetation may be studied, from the rich and varied vegetation of the plains to the interesting vegetation of the Gedeh and Pangeranso peaks, at an elevation of 10,000 feet. In the gardens themselves a very fine collection of Coniferæ from America, China, Australia, and other parts of the world has been got together, and spaces have been cleared for the growth of the various species of Eucalyptus, Cinchona, and other plants. Year by year the surrounding forest is being encroached upon by these gardens to make room for new importations. I saw, however, enough to convince me of the great importance of these gardens for the advancement of our botanical knowledge and the great opportunities they afford for research into all branches of the science. I need hardly say that the climate in this region is extremely pleasant and invigorating, and the neighbouring village of Sindanlaya is much resorted to by Europeans and others whose health has suffered on the coasts or low-lying districts of the Archipelago. At Buitenzorg the climate is by no means unpleasant or unhealthy, but as it lies a few thousand feet lower than Tsi-Bodas, it is naturally a good deal warmer; but I am assured that several Europeans have worked there for several years without feeling their health the least affected."

— MR. WALTER KRUSE thus describes his method of MAKING ZINC LABELS FOR FRUIT AND OTHER TREES WITH INK FOR WRITING ON THEM. Sheet zinc is cut of the desired shape, and a hole punched in it large enough for admitting a piece of No. 8 galvanised wire, the top of this is bent into S shape for securing the label, the lower part for inserting in the ground. This is the purport of what appears on one side of the paper, on the other the writer proceeds—"To make the ink for the label purchase some sulphate of copper, which is very cheap, at a chemist's, and make a saturated solution of it in water; that means that you cannot add too much copper, as the water will only dissolve a limited quantity, and the rest remains at the bottom of the bottle until more water be added. Use a quill pen. Shortly before being written on—as with all zinc labels—the surface of the label will probably require cleaning by being rubbed with some fine emery paper. The above-described label will last for years, does not force itself on the observation, especially as with some plants it can be placed almost out of sight among the foliage, and it can be made at home on a wet day when the men have not much to do. They can be used for a different name after being rubbed with emery paper. For tying without the galvanised stem to fruit trees I use strips of leather, as I consider wire dangerous, because if not seen to occasionally when the tree enlarges the wire injures it. With dwarf Rose trees tied labels are a nuisance, because every time the old wood is pruned away the label has to be shifted."

JUDGING AT FLOWER SHOWS.

MR. WILLIAMSON'S well-timed and able paper on "Judging at Flower Shows" I expected would ere this have received the attention of the critics, for the subject surely is of some interest. That some rules for the guidance of all concerned is fast becoming a necessity will, I think, be admitted by all practical men, whether from the standpoint of judge or of competitor. When Mr. Williamson tells us how his friend the nurseryman proceeded with the Roses judging—page 257—he shows the absurdity of our present system of judging cut flowers; and that plants, fruits, and vegetables are in many cases equally mismanaged is, I think, perfectly apparent. How all this may be remedied is a question of importance, and one calling for the consideration of our most experienced horticulturists. I consider Mr. Williamson's most able paper a step in the right direction. The plan he recommends seems practicable, and requires only to be more definitely put into form to pass the theoretical and find its place in actual practice. Convinced of this, and knowing that a thing well begun is more than half done, I beg to supplement Mr. Williamson's and submit the following.

First, Fruits and Vegetables.—Let a fixed national standard of maximum value be given to every kind of fruit and vegetable usually shown, and in accordance with such have test sheets printed and made up into books of convenient size, and which every horticultural society can procure for the use of its judges. I send two sketches, based on Mr. Williamson's model, to illustrate my meaning.

Second, Plants and cut flowers.—Here I must modify our system, for no fixed value can possibly be admitted, and the question may even arise, Are they then worth the trouble of a test sheet? This point I will not attempt to decide.

Now a word as to the standard value of the "mark." Mr. Williamson suggests four as the integral value. Here we differ for the first time. The decimal advance of our arithmetical notation suggests to me five or ten as a more convenient measure, and I should prefer to add the points to the marks rather than reduce the marks to the lower denomination. In conclusion, I may state that I by no means assume that the maximum values as rendered will be anything like just; they are simply added as they occur to me to complete the illustrations.

Since writing the above I have read "Thinker's" remarks on subject on page 313. I certainly concur with much that he says, but it must be remembered that good judges are not always at command, and in the nature of things the young and inexperienced must at some time make a beginning. No judges, we are aware, would think of troubling with points except in very close competition, and it is there that the value of a fixed standard would be acceptable.—W. A.

[It is not necessary to publish the blank tables, as they are practically the same as those represented on page 221 of our issue of September 10th, the only difference being that a column giving the maximum or standard number of points for each fruit or vegetable, as the case may be, the columns for marks and points awarded by the judges following the space for "remarks." In the "standard" column for fruit our correspondent places 10 marks for a Pine Apple, 9 for Grapes, 8 for a Melon, 7 for Peaches and Nectarines, 6 for Figs, 5 for Oranges and Apricots, 4 for Pears and Plums, 3 for Apples, 2 for Cherries and Strawberries, and 1 point each for Currants, Raspberries, and Gooseberries. In the "standard" column, as representing the relative merits of vegetables, the points are as follows:—Cucumbers and Tomatoes, 10 each; Vegetable Marrows, Celery, Leeks, and Onions, 9; Peas and Cauliflowers, 8; Asparagus, Seakale, Globe Artichokes, and Mushrooms, 7; French Beans, 6; Beet, Parsnips, and Carrots, 5; Cabbage, Turnips, Potatoes, and Brussels Sprouts, 4; Savoys, 3; Broad Beans, 2; Borecole, 1—a method of assessment which is open to discussion, as we suspect growers and exhibitors are not quite unanimous in their views on the subject. In the table for plant-judging space is provided for the names of all the specimens in the classes to which prizes are awarded, with accompanying columns for marks, points, and remarks.]

TREE MIGNONETTE.

THE earliest plants that have been prepared for this mode of growth have covered their trellises, and should be removed from the pits in which they have been grown to light airy positions safe from frost. The side stages of the Rose house is a capital place for them until it is necessary to use fire heat or keep that structure close.

These plants are quickly ruined in a close confined atmosphere. They must have plenty of light and air to insure strong sturdy growth, which is the secret of fine spikes of flowers. The earliest plants may be tied down, and then allowed to come into flower if they are required. All later batches should be trained as they require it to their trellis, and all the flowers removed directly they appear. It is important that Mignonette be carefully supplied with water, never allowing them to suffer by the want of it, or the shoots turn woody and cease extending. Clean soot water in a weak state may with advantage be given to those that have filled their pots with roots. Strong stimulants must be avoided, for they are certain to prove fatal. In addition to the soot water we apply to the surface of the soil a little artificial manure about once a month, which keeps the roots active upon the surface and invigorates the plants.—B.

SOME NEW AND OLD POTATOES—THE GENERAL CROP IN IRELAND.

You did well in your leading article, last issue, to invite further information as to experience on the above gained during the past year. Besides the general farm crop I grow all the new varieties I can conveniently procure in an experimental plot, with the view of being able to answer the queries of my neighbours in reference thereto, and for my own information. Many of your readers do the same possibly, and can add further useful observations. Looking at the matter broadly after being much about in Ireland lately, I may sum up my experience by saying the general field crop has been one-third deficient as compared with last year. This is already becoming evident in 2d. per stone more than last year being charged by retail in the local markets. Three-fourths of the Potato crop in Ireland and Scotland consists of the Champion, the "seed" or "sets" coming principally from the latter to the former. If the Champion, or rather "Scottish Champion," fails, what variety shall take its place? This interests millions. Already the haulm, no matter how manured or grown, is less than half the height and with half the vigour it had when first introduced. Every variety degenerates. If anyone denies this let him take up a list of varieties of thirty, or even twenty, years ago, and see where they are grown now.

The Magnum Bonum with me, too, is not so vigorous or as heavy a cropper as in former years, and what is worse, though the past season did not encourage fungoid diseases—being an unusually dry one—a larger fraction of the crop is diseased than the last or previous. It is, however, like the Champion, still one of the freest from blight. Both those varieties being grown the largest of any others in the United Kingdom I take them first; they are, however, different in every respect. Take one essential point rarely remembered. The Champion should be used for the table from September to May, the Magnum Bonum from April to August. I have heard the Magnum Bonum described as only fit for cattle and

swine, but on inquiry I found this was because it was used at the wrong time.

The same thing, but in a less degree, applies to such heavy croppers as White Elephant, Vicar of Laleham, Adirondack, and Wormleighton Seedling. I am inclined to name a new variety, the Helen Potato, I had last year for the first time, but I reserve it for further trial. Beauty of Hebron is of fairly good quality, not so early as Early Rose or Extra Early Vermont, but, like all Potatoes of American introduction, they flicker for a few seasons and degenerate in our moist and semi-sunless climate. Patterson's Victoria, Regents, Kemps, White Rocks, Porter's Excelsior, and Schoolmaster, either from degeneracy or a predisposition, are too liable to disease to ever regain the extensive culture they formerly had. For early use I ask nothing better than Sukreta (Carter's) I had last year for the first time; but for general purposes, everything considered, I consider Reading Hero the Potato of the immediate future. Grown side by side with two newer Scottish introductions on the farm—viz., Scottish Queen and Emperor, I readily give it the preference.—W. J. MURPHY, *Clonmel*.

ANNUAL MEETING OF THE YORKSHIRE ASSOCIATION OF HORTICULTURISTS.

ADDRESS BY THE REV F. D. HORNER.

[At the last annual meeting of the above Association, held at the rooms of the Paxton Society, Wakefield, the Rev. F. D. Horner delivered an interesting address upon the general objects of the Association, and this was supplemented by a lecture on the Auricula. We have been favoured with the MSS. of both these, and as they are of far more than local interest we present them to our readers.]

(Continued from page 355.)

THE AURICULA.

I WILL ask you to take my own feelings about this beautiful spring flower "as read." I am speaking only of that section of the flower known to florists as the Auricula, and I will only say of my acquaintance with it that I have known it from my very childhood. To the first Auricula Show I ever saw my father led me by the hand, and I had to stand on tiptoe to see the plants upon the tables. With none other interruptions than those which needs must come across the path of life between childhood and man's estate, I have kept the Auricula in sight; and to all those who are conversant with it the flower has evidently within late years, say the last twenty, been passing through a very progressive era of its culture. In the present stage of its history it has quite turned over a new leaf. It had the character of being a difficult, almost immovable flower, and a plant of fastidious tastes.

Variation of course could always be had from seed at, so to say, about a year's notice; but improvement was thought so like crying for the moon that few attempted it. Many old growers would never save seed, and thought it an impious thing to risk the life of a valuable plant over seed-bearing. A few would grow seed saved by such florists as the late George Lightbody, but they were looked on as embarking in an enterprise that would be fruitless—men who would never succeed in rounding the Cape of their Good Hope. "You do not know to what vanity and vexation you are committing yourself. Be content to live on the labours of the past. You cannot, in the Auricula, be better than your fathers were." Thus the old sorts and the few gems among them came down from hand to hand, revered as venerable heritages beyond which there were no great expectations. Between one leading flower and its next great rival years and florist generations might intervene, as, for example, between the appearance of the grey edge Lancashire Hero in 1846 and its next illustrious class fellow G. Lightbody in 1860. But this was no innate obstinacy in the flower. There is found no extraordinary risk in letting a healthy young plant, however valuable, carry seed; and now that branch of culture which was supposed to tend nowhere but to an endless variety of tormenting disappointments affords the keenest enjoyment and richest results.

I should like at the outset to remove any impression if such there be, that the Auricula is a flower to be frightened of, in the sense of being a difficult, miffy, slow thing to grow. It has great adaptability to hard circumstances. The plant is perfectly hardy, easily handled, moveable at almost any time, quite content with a 4-inch pot, of short convenient habit and great and varied beauty of foliage, tolerant of a smoky air, a plant of a simple and regular life, and by no means the epicure in the complex and not nice composts which o'd time treatise on its culture tell us were the necessities of its life. It was never likely to get such indigestibles naturally, and that alone is enough to prove them needless and worse. In duration of life it is what I may perhaps call a limited perennial, one stem or plant living a few years more or less, and giving off a few offsets from time to time that perpetuate the parent variety in all its identity. No such identity is possible from seed, for no two seedlings are ever alike. The florist Auricula as we have it is so far removed, so far

developed past resemblance to any wild original, that it is nothing but of an acquired flower. There is therefore this touching point in its history, that its very existence, in all its fascinating distinct elaborated beauty, depends upon its finding new friends as old ones pass away. It has no native country. Like the dog it has left all its (wild) kindred and made its home with man. If it once were lost not our children's children could in their lives recover it.

I do not know what light upon its early parentage may be thrown by the Primula Conference to be held next year in London. The Auricula will be a prominent Primula there, for the Conference is to be held in its presence—on its show day in the south (April 23rd, 24th). There is the Primula Auricula of the Alps, for one remote ancestor of our cultured flower, and its nearest relatives (wild with us) are the Mealy or Birds'-eye Primrose (*P. farinosa*) and also *P. scotica*. Then there is *P. marginata* with serrated mealed foliage of recognisable resemblance and lilac flowers, with rudiments of that meal which is so intensely developed on the Auricula. There are several more Alpine species with a habit of foliage in white and green, quite that of the Auricula, together with such others as *Primula intermedia*, *pubescens*, and *viscosa*, with pink and purplish flowers and the habit of diminutive Auriculas. So have *P. glaucescens* and *Wulfeniana*, but the texture of their foliage, hard and almost horny, is distinct. In fact, all primitive and allied forms are a far remove from the flowers derived through so long a period of culture as the 300 years in which there have been Auriculas, says Gerarde, in English gardens. Those early varieties are described as being yellows, browns, and purples, all of them favourite colours still among seedling Auriculas. Browns and purples are not to be wondered at, for such their immediate parents may have been. But the persistency of yellow is remarkable, it is the expression of a wonderful kind of early impress or memory of the flower. For instance, I grow no yellows, but yet among maiden seedlings as they bloom a few yellow ones generally come. Yellow selfs will come from self parents of any other colour but that. Even the edged flowers, type furthest removed of all from the simplicity of wildness, will exhibit a like impression of a prehistoric past, and a seedling, say from a green-edged parent, will take indeed the emerald edge, but substitute for a black body colour some fanciful tint of yellow.

As to the derivation of the Auricula, to some extent, and certainly as to its progress in a very great degree, my belief is that the flower will tell its past history best and most convincingly itself. It might be tried with what wild species it would hybridise while in its infinite variability from seed, by which attribute it has the fundamental qualification for being what is known as a florist flower, it makes the most interesting revelations of the past to the raiser of its seedlings. In them the history of the past will repeat itself in varied retrospect, and among those that must be discarded as missing the standard they were intended to equal or excel are many in which the very faults are but tracings of their derivation towards its distant sources. They show how petals now substantial round and flat had been flimsy frilled and pointed, the dense meal thin and ill defined, and how the beautiful edge of green or pearly grey or snowy white was at first a slight and broken rim.

I am keeping for the Conference a special seedling, of best parentage, that is not worth a single mark in any one property of the florist Auricula. It is a highly worthless flower in that respect, but still perfect in its wilful way. It reminds me of an oil painting for which Mr. Barlow once gave 1s., and said if it were one touch the better he would not give 1d. for it. It was some warlike scene apparently, but the vendor said opinions varied as to the subject. It had been taken for the battle of Waterloo, and I know when we counted for curiosity the legs in a front file of soldiers, who seemed to have no particular reason to be where they were, we found that one warrior had three! That was a priceless discovery, for a man is oftener a leg short than one over in action.

(To be continued.)

HOUSES OF MIXED GRAPES.

I THINK it is generally admitted that where gardeners are able to devote a whole house to the growth of one or two varieties of Grapes that are found to do well together, the task of producing fruit of the highest excellence is much easier than where many varieties are grown together. In gardens where the means at command are great and the grower confines himself to a few good sorts, with good culture the result is certain to be highly satisfactory. But there are many who like to grow a number of varieties for certain good points that each possesses, either for their good colour, fine berries, exquisite flavour, large bunches, sure cropping, and free-setting qualities, and Grapes, like many other

garden products, are grown to look at as well as to eat. I believe the gardeners who are well acquainted with the best varieties of Grapes are well able to decide for themselves which are the better suited to their wants, according to the circumstances in which they are placed. Those who have had experience in the management of vineries in which numbers of varieties are grown are well aware of the difficulties of this system of cultivation during the flowering and ripening periods. A Vine of one variety will often come into flower two or three weeks before another growing beside it, and when seven or eight varieties are grown in one house the flowering time will extend over four or five weeks, which necessitates keeping the atmosphere of the house much drier than is good for either the foliage or the Grapes that are swelling while the backward varieties are still in flower. This evil is still greater when colouring commences, many of the varieties requiring much longer to ripen and a higher treatment than others.

It is not my intention to depreciate the system of mixed planting, because if it were not adopted many would be unable to grow some of the best varieties in cultivation, nor could they keep up a supply for so long a time. I think, however, by taking notes of those that come into flower and ripen about the same time under similar treatment, and also by turning to good account the warmest and coolest parts to be found in most vineries, the evils above mentioned may be in a great measure counteracted. With this end in view I append the result of my own observations in that direction, and I have no doubt that many much more able than myself could supplement these remarks should they think the subject worthy of their consideration.

In planting early Vines, consisting principally of Black Hamburgh, many cultivators like to have one Vine of Muscat of Alexandria in order to get that much-esteemed variety in presentable condition as early as possible; but I have never yet seen it quite satisfactory under such conditions, and I think such varieties as Foster's Seedling and Buckland Sweetwater are preferable for the dessert or the exhibition table till Muscats can be had in really good condition. Black Hamburgh, Madresfield Court, Buckland Sweetwater, and Foster's Seedling will succeed well together in an early house; and if the Sweetwater is planted in the warmest position, Foster's Seedling in the coolest position, and the other two varieties occupy the rest of the house, three of the varieties will ripen about the same time. The Madresfield Court will require longer time to do so, but the cool treatment necessary when the others are ripe will just suit this variety, provided the hot-water pipes are kept warm in dull weather to prevent the berries cracking. For a midseason house I am of opinion that Gros Maroc, Alnwick Seedling, and Madresfield Court would succeed well together, but I cannot speak from experience on that point; perhaps anyone who has grown them together will be able to give us a little information about these three fine Grapes.

Muscats should, if possible, have a house to themselves, although Trebbiano, Mrs. Pince, and Gros Guillaume will do very well under the same conditions; but if the bunches of the latter variety are large they will require a much longer time to ripen than even the Muscats, which, of course, is an objection, because the Muscats will shrivel from the effects of the fire heat necessary to finish the Gros Guillaume. The two varieties that require a longer time to ripen than others that I am acquainted with are Gros Colman and Gros Guillaume. Mrs. Pince is almost as long, and these three succeed well together and make a grand show. Gros Colman should have the warmest position. Another good combination for a late house is Lady Downe's, Alicante, and Abercainy Seedling. I do not wish to infer that these are the only varieties that will do well together, because it is a subject that may be experimented with in so many ways, but the varieties mentioned are safe ones to plant together. Perhaps there are others who may be induced to give us the result of their experience in the matter.—H. DUNKIN.

SELECT PASSIFLORAS FOR STOVE AND GREENHOUSE.

BEAUTIFUL and numerous as other genera and species of stove and greenhouse climbers are, but few can surpass in beauty the magnificent family of Passifloras, with their gorgeously coloured flowers and handsome fruit and foliage. Travellers in tropical America describe in glowing language the rich character of the scenes presented to their eyes by the handsome foliage, flowers, and fruit hanging in festoons on the long shoots of the Granadilla (*P. quadrangularis*), which climb from tree to tree in the forests. The fruit of the Granadilla, which is deliciously sweet and fragrant in flavour, is much esteemed by the natives of those tropical regions as an article of food, and even in England it is highly esteemed by some, and forms a valuable adjunct to the dessert. The latter, however, rarely produces fruit in this country unless planted out and can make root and growth unrestrictedly, and even then to insure fruiting the flowers must be artificially fertilised by the pollen of another species, as its own pollen is impotent. A few other species, such as *P. edulis*, *P. incarnata*, and *P. laurifolia*, are usually described under the general term of Granadilla, as all produce edible and luscious fruits, but with the exception of the species described as the true Granadilla and *P. edulis* these are not generally grown in English gardens. The last-named is, perhaps, more grown than the former, as it is more accommodating in its requirements, and will grow, flower, and fruit freely in a greenhouse or intermediate temperature.

Those whose experience has been confined to growing these beautiful climbers in pots can form no idea of their real character of growth and freedom of flowering when planted out and allowed to grow unrestrictedly, especially so in the case of the many beautiful hybrids between *P. alata* and *quadrangularis*, and *vice versa*, of which *Buonaparteia* (fig. 59),

Decaisneana, and *Impératrice Eugénie* are charming examples. We have the three latter varieties, with *P. quadrangularis princeps*, *P. alata*, and *P. edulis* planted out at intervals in a bank of rich soil consisting of equal parts good turfy loam, peat, leaf mould and sand, thrown up round the inner walls of a large octagon house. Here they grow vigorously and

and temperature. *Impératrice Eugénie* was the first to bloom in May. Its petals are rosy lilac, and the filaments of the corona violet and white; leaves, three-lobed, and of a dark green colour. It lasted in bloom from May to the end of August. It has a graceful habit of growth, and is supposed to be a hybrid between *P. alata* and *P. quadrangularis*, or *cœrulea*.

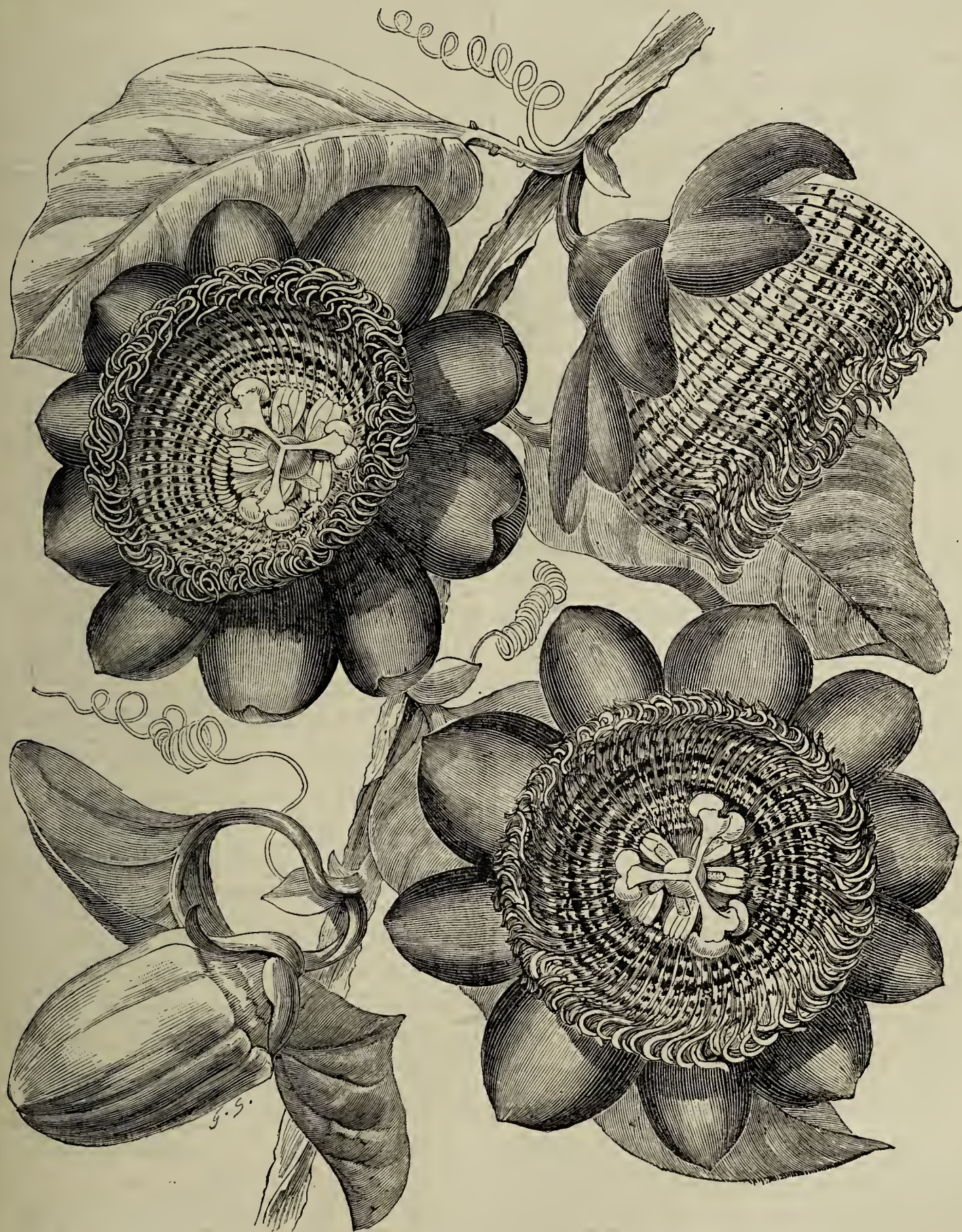


Fig. 59.—PASSIFLORA BUONAPARTEA.

develop their true characters more fully than when grown in pots, but this vigour is not maintained at the expense of its freedom of flowering. The temperature of this house never exceeds 55° in winter, and is often 7° or 8° below that. No fire heat is employed after the end of May until the middle of September, and we may mention by the way that *Combreum purpureum* is planted out and growing freely in the same house

P. Buonapartei is one of the most handsome of the *Passifloras*, both as regards foliage and flowers. This, too, is a hybrid between *P. alata* and *P. quadrangularis*, possessing the sweet-scented and richly coloured flowers of the former with the handsome foliage of the latter. It possesses the merit of flowering freely in a young state, quite the reverse of its parents. It is a moderate grower, and in a cool temperature the leading

shoot does not run up without making abundance of lateral shoots. The laterals when 1 foot to 18 inches long commence to flower freely. The flowers are borne singly in the axils of the leaves, the petals of which are of a beautiful reddish crimson, slightly pointed at their outer extremities, with a corona of rich red, white, and blue filaments, and deliciously sweet-scented. Leaves large, ovate-acuminate, and of a rich dark green colour. This variety should have precedence of all others where space can be afforded for planting it out.

P. Decaisneana is a hybrid between *P. quadrangularis* and *P. alata*, with flowers very similar in colour to the latter variety, but has a more slender and straggling habit of growth. It is a variety well worth growing where plenty of space can be given it to grow, but is inferior to *P. Bonaparteana* in many respects. The well-known species *quadrangularis* has already been mentioned, and it will suffice to say that it is a magnificent climber, with flowers of the same character as its two hybrids just described. The fruit is very handsome when any can be induced to set and come to perfection on the plants; but, as has already been stated, resort must be had to artificial means to do so.

Of the remaining popular and well-known species, *P. princeps* or *racemosa* and *P. edulis*, much has been written concerning them from time to time. We may mention for the benefit of those unacquainted with them that *P. princeps* is a beautiful species, with simple smooth lanceolate leaves, a slender habit of growth, and brilliant scarlet flowers borne in racemes, which hang suspended from the main and lateral stems. *P. edulis* is a very free-growing and flowering species, with slender habit of growth and dark green, three-lobed, smooth leaves. The flowers, which are borne in profusion, are white and blue, and these are succeeded by dark purple egg-shaped fruits, which, when eaten, are of a delicious flavour. This variety will succeed in a cool greenhouse.

All of the foregoing are readily propagated by means of the young growths taken with a heel of the old wood in spring, and inserted in sandy soil under a bellglass or in a propagating frame. It is necessary to occasionally prune the stronger-growing kinds to keep them within bounds. This is best performed early in the year before growth commences. *Passifloras* are very much subjected to mealy bug and thrips, but these can be kept in check by use of the ordinary remedies.—T. W. S.

THE NATIONAL PEAR CONFERENCE AT CHISWICK.

THE Exhibition of Pears at Chiswick must be regarded as equally successful in its way as the Apple Congress of two years ago, for though the total number is smaller than was provided at the last-mentioned gathering, the most sanguine of the Pear Conference promoters could not have expected that between 6000 and 7000 dishes, representing so nothing like 40,000 fruits, would be obtained. Yet such is the case, and these exhibits fill the large vinery and two marquees of considerable size, making a display of Pears such as never has been seen before and probably never will be again. It is also thoroughly representative, for there are contributions from all the principal English counties, together with some from Ireland, Scotland, the Channel Islands, and France, and we see all gradations from perfect specimens to the undersized examples produced by trees in unfavourable northern districts. Taking the grand fruits from Barham Court, Maidstone, as the best of the English produce, a gradual decrease in size can be traced in the fruits as we go north, until the same varieties from far up in Scotland can be scarcely recognised, except where they have been grown in orchard houses, and then they attain as good proportions and appearance as if they had been grown out of doors several hundreds of miles farther south.

The suitability of different stocks to dissimilar soils or districts is readily seen, for a variety may be noted in one collection particularly fine from the Quince stock, and in another it will be seen equally good from the Pear stock. The greatest difference in size of fruits, though, appears to be affected by the form of tree or training adopted. Thus the samples from cordons are throughout extremely good, and even in the south of England are generally much superior to all others, though fan-shaped trees and palmette verriers yield numbers of handsome specimens, as also do espaliers. From hush trees some good fruits are shown, and after these come the standards and pyramids as regards the size of fruits, though the bulk of the exhibits are probably from the latter, especially in the southern contributions. Upon all these matters much information of great interest will undoubtedly be afforded when Mr. A. F. Barron has been able to tabulate and arrange the innumerable facts that the exhibitors have furnished in connection with their collections.

The following report is a record of the principal exhibitors in the various counties, and the varieties named are those which for size and general appearance were the most notable in the several collections, and therefore to some extent indicate which are best suited for the districts where they were grown. In the northern counties few varieties are named, for in the majority of cases they are not of full size, especially from trees out of doors.

MIDDLESEX.—As remarked last week, this county heads the list in number of exhibits, surpassing Kent, which was foremost at the Apple Congress. This is chiefly due to several large trade collections and to the wonderful collection of the Society's Chiswick garden, which is the largest from one establishment in the whole Exhibition. It comprises 212 varieties, the majority of which are fairly represented, but there are necessarily some small ones amongst so large a number, many of the varieties being of little value. All the best in cultivation are, however, well shown, and the collection altogether is most creditable to the garden. Very interesting, also, is a collection from Messrs. J. Veitch & Sons, Chelsea, which comprises 120 dishes. This is a handsome exhibit, the fruits above medium size from pyramid, espalier-trained, and cordon trees, but chiefly from the first-named, and on the Quince stock, though there are also some fine specimens from Pear stocks. The best fruits are of the following varieties:—*Duchesse d'Angoulême*, *Louise Bonne de Jersey*, *Beurré Capiaumont*, *Marie Louise d'Uccle*, *Gansel's Bergamot*, *Glou Morceau*, *White Doyenné*, *Beurré Hardy*, *Seckle*, *Kingsessing*, *Beurré Bachelier*, *Doyenné Gris*, *Beurré Diel*, *Pitmas-*

ton Duchess, *Vicar of Winkfield*, *Bellissime d'Hiver*, *Princess of Wales*, *Triomphe de Jodoigne*, *Uvedale's St. Germain*, *Calehasse Grosse*, *Chancellor*, *Brown Beurré*, *Beurré Babet père*, *Beurré d'Amanlis*, *British Queen*, *Easter Beurré*, *Marie Louise*, *Catillac*, *Brockworth Park*, *Durondeau*, *Huyshe's Victoria*, *Van Mons Léon Leclerc*, *Maréchal de Cour*, *Beurré Clairgeau*, and *General Todtleben*. There are also some fine fruits of *Bismarck* and the *Sandringham Apples*. Messrs. C. Lee & Son, Hammersmith, exhibit eighty-six dishes of good fruits, representing most of the varieties named in the preceding collection.

The contributions from private gardens are numerous, Mr. J. Roberts, Gunnersbury Park, Acton, having an excellent collection, the fruits chiefly from upright cordons on the Pear stock. Especially fine were *Marie Louise d'Uccle*, *Beurré Clairgeau*, *Pitmaston Duchess*, *British Queen*, *Beurré Superfin*, *Beurré Bosc*, *Doyenné Boussoch*, and *Baronne de Mello*. The others are from pyramids chiefly, also on the Pear stock; *Catillac*, *Marie Louise*, *Chaumontel*, *Duchesse d'Angoulême*, *Beurré Diel*, and *Easter Beurré* being most notable. Mr. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, has thirty-four varieties from orchard and pyramid trees of good medium size. Mr. G. Thompson, gardener to W. E. Wells, Esq., Croxby House, Hounslow, has twenty-four dishes of good even samples, the best in appearance being *Winter Windsor* from standard on the Pear stock, which is of fine colour and good shape. It is an interesting Pear, being one of those mentioned by Parkinson; but though handsome it is of little value, as it soon decays at the core. Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, shows a collection of forty dishes, the fruits mostly of fair size.

Mr. J. Woodbridge, gardener to the Duke of Northumberland, Syon House, Brentford, contributes thirty varieties, comprising large fruits of *Duchesse d'Angoulême*, *Uvedale's St. Germain*, *Beurré Diel*, and *Pitmaston Duchess*. Mr. A. Wright, gardener to E. H. Watts, Esq., Devonhurst, Chiswick, shows twenty-four dishes, in which some fine fruits of *Easter Beurré* from a tree on the Pear stock trained to west wall are very notable. Mr. R. Dean, Bedford, has a small collection of fourteen varieties, *Beurré Diel*, *Catillac*, *Nouveau Poiteau*, *Swan's Egg*, and *Marie Louise* being well represented. Mrs. Sanderson, Duke's Avenue, Chiswick, has fourteen dishes; Mr. Draper, Kinneswood Cottage, Acton Green, shows six dishes; and Mr. J. W. Odell, gardener to W. Barber, Esq., Q.C., Barrow Point, Pinner, contributes thirty dishes.

KENT.—From this county we have the finest examples of English Pears, which in size are second only to those from Jersey. Even from this favoured district much difference is observable in the size and condition of the fruits, proving how much depends upon culture. Prominent amongst the best, as might be expected, are the magnificent fruits from Mr. C. Haycock, gardener to R. Leigh, Esq., Barham Court, Maidstone, which, with the Jersey samples, are the great attractions of the Exhibition. In size, colour, and general appearance these are all that could be wished, and show the characters of the finest Pears to the best advantage. They are from cordons, palmette verriers, and pyramids, the fruit from the first-named being extremely handsome. All the under-mentioned varieties will be found there in first-rate condition:—*Grosse Calehasse*, *Easter Beurré*, *Doyenné du Comice*, *Triomphe de Jodoigne*, *Marie Benoist*, *General Todtleben*, *Beurré Clairgeau*, *Pitmaston Duchess*, *Emile d'Heyst*, *Beurré Diel*, *Bellissime d'Hiver*, *Nouveau Poiteau*, *Glou Morceau*, *Reine des Tardives*, *Louise Bonne de Jersey*, *Beurré Bachelier*, *Beurré Hardy*, *Beurré Superfin*, *Catillac*, *Beurré d'Amanlis*, *Passe Crassanne*, *Emile d'Heyst*, *Marie Louise d'Uccle*, *Fondante de Noël*, *Huyshe's Prince Consort*, *Vineuse*, *Bonne d'Ezée*, *Thomson's*, *Marie Benoist*, *Doyenné d'Alençon*, *Duchesse d'Orléans*, *Durondeau*, *Beurré Hardy*, *Doyenné Boussoch*, *Jersey Gratioli*, and *Beurré de Capiaumont*. With these is also included a dish of a Japanese Pear named *The Daimio*, which is recommended as very ornamental, bearing large numbers of globular bright yellow fruits that cannot, however, be rendered eatable by any form of cooking.

An interesting and beautiful collection of 100 varieties is staged by Messrs. George Bunyard & Co., Maidstone. Particularly fine are the following:—*Calebasse Grosse*, on the Pear; *Beurré de Capiaumont* of very fine colour, on the Pear; *King Edward*, large; *Gansel's Bergamot*, handsome fruits, on the Pear; *Catillac*, on the Quince; *Beurré Rance*, on the Pear; *Beurré Hardy*, on the Quince; *Doyenné d'Alençon*, on the Pear; *Belle de Noël*, on the Pear; *Uvedale's St. Germain*, on the Quince; *Durondeau*, on the Quince; *Glou Morceau*, on the Pear and Quince, equally fine; *Beurré Clairgeau*, also on the Pear and the Quince; *Pitmaston Duchess*, on the Quince; *Beurré Diel*, on Quince. Other notable varieties were:—*Beurré Bachelier*, *Doyenné Boussoch*, *Daimio*, *Bunyard's Baking*, *Flemish Beauty*, *Beurré Rance*, *Brown Beurré*, *Gansel's Bergamot*, *Huyshe's Bergamot*, *Beurré Superfin*, and *Fertility*. Mr. C. Davies, The Moat Park Gardens, Maidstone, has fifty dishes of fine fruits, the best being *Beurré Diel*, on the Pear stock, perpendicular cordon; *Beurré Bachelier*, on the Quince, similar tree; *Pitmaston Duchess*, on the Pear, oblique cordon; *Marie Louise d'Uccle*, on the Pear, oblique cordon; *Duchesse d'Angoulême*, on the Quince, pyramid; *Durondeau*, on the Pear, perpendicular cordon, very handsome; *General Todtleben*, on the Pear, perpendicular cordon; and *Marie Louise*, on the Pear, similar tree. Mr. W. Divers, The Gardens, Wierton House, Maidstone, has twenty-four varieties, the fruits of medium size. Mr. Thomas Bunyard, Ashford, has fifty-two varieties, including good examples of *Grosse Calebasse*, *Beurré Clairgeau*, *Pitmaston Duchess*, *Marie Louise d'Uccle*, and *Durondeau*. The others are mostly medium size, the curious little *Poplin* Pear being pretty.

Mr. Butler, gardener to H. J. Thomas, Esq., Sittingbourne, Kent, shows ten dishes of Pears, all handsome, well coloured, especially those from the Quince stock. Of these *Pitmaston Duchess* grown as a pyramid are extremely fine, *Louise Bonne de Jersey* is of fine colour, *Beurré Clairgeau* large, *Beurré Diel*, *Maréchal de Cour*, *Doyenné Boussoch*, *Marie Louise d'Uccle*, *Durondeau*, and *Emile d'Heyst*. Some of the best of those from Pear stocks are *Beurré Bosc*, *Jersey Gratioli*, *King Edward*, *Leon le Clerc de Laval*, *General Todtleben*, *Duchesse d'Hiver*, and *Dr. Trousseau*. Mr. R. Smith, The Gardens, Kenwards, Yalding, Maidstone, exhibits eighteen dishes, comprising good specimens of *Gansel's Bergamot*, *Chaumontel*, *Marie Louise*, *Pitmaston Duchess*, *Beurré Rance*, *Glou Morceau*, *Catillac*, *Fondante d'Automne*, and *Beurré Bachelier*.

Mr. T. W. Sanders, The Firs, Lee, Kent, has a small but interesting collection of twenty-four varieties, including several French varieties. The

fruits are of good size, particularly the following:—Bergamotte de Millepieds, Marie Louise, Delices d'Hardenpont, Bezi Louvain, and Directeur Alphonse, all on the Quince stock. Mr. Selway, The Gardens, Updown Park, Sandwich, Kent, has thirty-two varieties, rather small. Mr. W. Rogers, The Cedars, Ashford, has twenty varieties; and Mr. W. Herrington, Betteshorhough Rectory Gardens, Sandwich, has twenty varieties, mostly small.

HAMPSHIRE.—Next in order of merit, though not in numbers, come the Hampshire Pears, as shown by Mr. W. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchester, who has ninety varieties, forming a beautiful collection, the fruits all of good size, clean, and even. The best varieties were as follows:—Beurré Diel, Calabasse Bosc, Colmar d'Arenberg, Winter Nelis, Catillac, and Urbaniste on the Quince. Durondeau on the Pear is shown of good size from bush trees, but fruits of the same variety on the Quince from cordon trees are equally fine in size and much better in colour. Beurré Beauchamp, good. Directeur Alphonse, fine from a cordon on the Quince. Pitmaston Duchesse on Pear, trained to a west wall, is much finer than same variety from pyramid on the Quince. Easter Beurré on the Quince. General Todtleben and Doyenné du Comice, both on the Quince, are finely represented, as also are Chaumontel, Vernlam, Beurré Benoist, Beurré Sterckmans, Marie Louise, Gros Trouvé, Bellissime d'Hiver, Glou Morceau, Thompson's, Louise Bonne of Jersey, Beurré Hardy, and Maréchal de Cour. Rev. J. L. Carrick, Springfield School, Southampton, shows twelve varieties, Grosse Calabasse being very large, and Beurré Clairgeau of fine colour, all on the Pear stock. These were the only collections from Hants.

BERKSHIRE.—There is not a great display from this county; but Mr. C. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury, has twenty-eight dishes of fine fruits of Pitmaston Duchesse, Easter Beurré, Catillac, Doyenné du Comice, Uvedale's St. Germain, Bergamotte Reinette of a fine golden hue, and British Queen—all on the free stock. Mr. W. Allen, The Gardens, Rainsbury Manor, Hungerford, shows eighteen dishes, his best samples being Duchesse d'Angoulême from the Quince, Beurré Clairgeau from the Paradise, and Beurré Diel from espaliers on the Quince. Mr. C. Howe, gardener to Sir R. F. Sutton, Bart., Benham Park, Newbury, has twenty-four varieties, Gansel's Bergamot and Doyenné Boussoch being especially good, while Mr. J. Lawrence Ardmillan, Caversham, Reading, has fourteen dishes of rather small fruits.

HERTFORDSHIRE.—There are several good representative collections from this county, and though the fruits are not large they are generally even and fairly satisfactory. Messrs. Rivers & Sons, Sawbridgeworth, show eighty varieties mostly from Quince stocks as pyramid trees, comprising very good examples of Beurré Bachelier, Catillac, Marie Louise d'Uccle, Durondeau, Beurré Clairgeau, Beurré Alexandre, Lucas, Bishop's Thumb (of fair size from Quince, double grafted), Pitmaston Duchesse, Lebrun, General Todtleben, Magnate; Princess, handsome; Beurré Diel, from an espalier, fine; Beurré Langelier; and Duchesse d'Angoulême. Messrs. W. Paul and Son, Waltham Cross, contribute 150 dishes, including good specimens of the following: Doyenné Boussoch, Marie Benoist, Doyenné Gris, Doyenné du Comice, Autumn Colmar, Gilgil, Gansel's Bergamot, Maréchal de Cour, Beurré Clairgeau, Beurré d'Anjou, Beurré Diel, Easter Beurré, Marie Louise d'Uccle, Catillac, Pitmaston Duchesse, and Triomphe de Jodoigne. Messrs. Paul and Son, Cheshunt, have eighty dishes of average-sized fruits, some of the best being Marie Louise d'Uccle, Bishop's Thumb, Doyenné Boussoch, Delices d'Hardenpont, Beurré Clairgeau, and Catillac. Mr. J. C. Mundell, gardener to Lord Ehury, Moor Park, Rickmansworth, contributes sixty dishes of good fruits generally, including fine samples of Catillac, White Doyenné, Gansel's Bergamot, Beurré Clairgeau, Uvedale's St. Germain, Marie Louise d'Uccle, Doyenné Boussoch, Beurré Bosc, Glou Morceau, British Queen, and Beurré Clairgeau. Mr. Norman, gardener to Marquis of Salisbury, Hatfield House, Herts, has a collection of unnamed fruits, some of good quality.

SURREY.—The most important contribution from this county was that of 110 varieties from Mr. G. W. Cummins, gardener to A. H. Smea, Esq., The Grange, Wallington, which was a good representative collection, the fruits not of great size, but even and clean. The best varieties were Beurré Clairgeau, fine colour; Beurré Superfin; Beurré Diel; Doyenné du Comice; Catillac; Forelle, brilliant colour; Gansel's Bergamot; Uvedale's St. Germain; Bezi Mai; Beurré Diel; and Duchesse Tardive, a very free variety, in season from December to February. Mr. W. Shepherd, Greenhurst, Capel, Dorking, exhibits a small collection, chiefly from cordons on the Quince, but, except in a few cases, the fruits are not large.

Other exhibitors are W. Roppel, Esq., Harvey Lodge, Roppel Park, twenty dishes; Mr. T. Taylor, gardener to J. McIntosh, Esq., Duneevan, Otlands Park, Weybridge, twelve dishes; Mr. B. Greaves, The Gardens, Broom Hall, Dorking, twenty dishes; Mr. J. Coombes, Sheen House, Gardens, Mortlake, thirty dishes; Mr. J. Dean, gardener to G. Leveson, Esq., Titsey Park, Limpsfield, twenty-four dishes; Mr. A. Evans, gardener to J. S. Hodgson, Esq., Lythe Hall, Haslemere, twenty-four dishes; Mr. D. East, gardener to F. Wigan, Esq., Clare Lawn, East Sheen, eleven dishes; Mr. H. Matthews, Betchworth, thirty dishes; Mr. F. Ewerson, Grove House Gardens, Roehampton, twenty-four varieties, of good size and colour; Mr. E. Burrell, Claremont, Esher, twenty-four dishes; Mr. J. Forbes, Dover House Gardens, Roehampton, thirty dishes, a handsome collection of fine fruits; and Mr. J. Burnett, The Gardens, Deepdene, Dorking, fifty-five dishes, capital samples.

SUSSEX.—Some good fruits are shown by Sussex growers, prominent amongst whom is Mr. S. Ford, gardener to W. E. Hubbard, Esq., M.P., Leonardslee, Horsham, who has seventy-eight dishes of good average fruits, principally from pyramids on the Pear stock. The leading varieties are Vicar of Winkfield, Durondeau, Nouveau Poiteau, King Edward, Uvedale's St. Germain, Allman's Sussex Monster, Beurré Clairgeau, Chaumontel, Pitmaston Duchesse, Beurré Bachelier, General Todtleben, Thompson's, Duchesse d'Angoulême, Beurré d'Anjou, and Marie Louise d'Uccle. Messrs. J. Cheal & Son, Crawley, have a handsome collection of fifty-four varieties, many of which are from the cordon trees which they grow so well in their nursery. The following are capitally represented—Beurré Bachelier, Pitmaston Duchesse, Calabasse Grosse, Beurré Clairgeau, Uvedale's St. Germain, Beurré d'Amanlis, Van Mons Léon Leclerc, Catillac, Duchesse d'Angoulême, Beurré Diel, Beurré Hardy, Maréchal de Cour, Jersey Gratioli, Chaumontel, Vicar of Winkfield, Olivier des Serres, Doyenné du Comice,

Doyenné Boussoch, and Durondeau. Mr. Breese, gardener to Lord Leconfield, Petworth, has fifty dishes, all excellent fruits of good size, chiefly from cordons on the Quince. The principal varieties are Duchesse Tardive, Beurré d'Anjou, Doyenné du Comice, Durondeau, Marie Benoist, Pitmaston Duchesse, Calabasse Grosse, Beurré Bachelier, Beurré Diel, Marie Louise d'Uccle, Emile d'Heyst. Others equally fine were Uvedale's St. Germain, Bellissime d'Hiver, Catillac, and Beurré Clairgeau.

Other exhibitors of smaller collections are Mr. E. Burbury, gardener to the Duke of Norfolk, Arundel Castle, with thirty dishes; Mr. J. Rust, gardener to the Marquis of Abergavenny, Eridge Castle, Tunbridge Wells, with thirty-six dishes; Mr. J. Anderson, Crawley, with twenty-four dishes; and Mr. J. Bolland, East Grinstead, with forty-seven dishes.

Mr. J. Smith, gardener to the Earl of Rosebery, Mentmore, Leighton Buzzard, contributes fifty dishes of good average fruits, Marie Louise, Duchesse d'Angoulême, Beurré Diel, Maréchal de Cour, Beurré de Capiaumont, Beurré Clairgeau, and Bellissime d'Hiver being some of the best. Mr. G. T. Miles, gardener to Lord Carrington, Wycombe Abbey, has forty dishes, comprising excellent examples of Uvedale's St. Germain, Pitmaston Duchesse, Beurré Clairgeau, Bonne d'Ezée, Catillac, Duchesse d'Angoulême, Doyenné du Comice, and Van Mons Léon Leclerc.

WILTSHIRE.—Several good growers have entered collections from this county, and the fruits generally are fairly representative, though not large. Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, has sixty varieties. Mr. C. Warden, Clarendon Park, Salisbury, contributes twenty-five varieties, of which some fine specimens of Beurré Clairgeau from fan-trained wall trees on the Quince stock are notable. Mr. H. W. Ward, Longford Castle Gardens, Salisbury, stages forty varieties, Beurré Clairgeau and Pitmaston Duchesse being very handsome. Mr. B. Cochrane, Manor House, has eight dishes of small samples.

DORSETSHIRE.—An excellent general collection of 110 varieties is entered to represent this county from Mr. W. G. Pragnell, gardener to J. D. W. Digby, Esq., Sherborne Castle, Dorset, and the fruits from various kinds of trees on either the Quince or the Pear are handsome examples of good culture. The leading varieties are Uvedale's St. Germain, Pitmaston Duchesse, Beurré Clairgeau, Doyenné du Comice, Bellissime d'Hiver, Gratioli de Jersey, Gansel's Bergamot, Doyenné Boussoch, Vicar of Winkfield, Beurré Diel, Beurré Bachelier, Du Congrès Pomologique, a very handsome medium size and rich yellow Pear, and Colmar d'Arenberg.

ESSEX.—An important collection is that from Messrs. Saltmarsh & Son, Chelmsford, which includes eighty varieties, all meritorious, and chiefly from pyramids on the Pear stock. The best are Calabasse Grosse, Marie Louise d'Uccle, Huyshe's Bergamot, Pitmaston Duchesse, Beurré Diel, Uvedale's St. Germain, Catillac, Beurré Clairgeau, Doyenné du Comice, and a curious little oval Pear named Longue Verte Panachée, striped with light and dark green. Mr. H. Spivey, gardener to J. H. Houlton, Esq., Hallingbury Place, Bishop's Stortford, has fifty dishes, the fruits of good medium size, and from trees on the Quince stock either as pyramids, wall, or espalier trained. The finest examples are Pitmaston Duchesse, Gansel's Bergamot, Doyenné du Comice, Durondeau, Beurré Langelier, Beurré Hardy, Catillac, Passe Colmar, Nouvelle Fulvie, General Todtleben, Easter Beurré, and Glou Morceau. Mr. W. Dance, gardener to Col. A. S. H. Lowe, Gosfield Hall, Halstead, also has sixty-two varieties of good average quality.

WORCESTERSHIRE.—From Messrs. R. Smith & Co.'s well known Worcester nurseries come sixty dishes of good fruits, many of the varieties being uncommonly fine, amongst which may be named Pitmaston Duchesse, Beurré Clairgeau, Easter Beurré, King Edward, Beurré Bachelier, Uvedale's St. Germain, Duchesse d'Angoulême, Beurré Hardy, Gansel's Bergamot, Maréchal de Cour, and Passe Crasanne. Mr. W. Crump, Madresfield Court Gardens, shows samples of thirty good varieties. Mr. W. Davis, Tenbury, has forty dishes of rather smaller fruits. Mr. Gibbon, Pershore, shows a dozen sorts, and about the same number comes from Mr. W. Jenkins.

HEREFORD.—Sixty-seven dishes of handsome fruits were contributed by Mr. W. Denning from the Earl of Chesterfield's garden at Holme Lacy, where cordon trees are so admirably grown. Those shown are mostly from these, but some are from fan-trained trees, the following varieties being the most remarkable for size and good appearance:—Beurré Bachelier, White Doyenné, Easter Beurré, Duchesse d'Angoulême, Brown Bucré, Louise Bonne of Jersey, Princess, Durondeau, Beurré Hardy, Van Mons Léon Leclerc, Beurré Superfin, Beurré d'Amanlis, Hacon's Incomparable Maréchal de Cour, Beurré Rose, Forelle, Chaumontel, Doyenné du Comice, General Todtleben, Triomphe de Jodoigne, Flemish Beauty, Pitmaston Duchesse, Beurré Clairgeau, Bergamotte d'Esperen, Doyenné Boussoch, Bellissime d'Hiver. Mr. W. Coleman, Eastnor Castle Gardens, Ledbury, has seventy dishes of Pears, some of fine quality. Mr. J. Watkins, Pomona Farm, Withington, has thirty-eight dishes. Mr. Ward, gardener to Lady Emily Foley, Stoke Edith Park, Hereford, shows thirty-six dishes, the early varieties being very good; and Mr. J. Henderson, Hatfield Gardens, Ledbury, sends twenty-five varieties, none except Doyenné Boussoch being remarkable. Dr. Bull and G. H. Piper, F.G.S., have a collection of Perry Pears, under the local names, such as Pine Pear, New Meadow, Red Pear, Moorcroft, Hellen's Green, Bach's White, Cheat Boy, Rock Pear, and Knock Down, with several others bearing similar titles, but small and far from tempting.

The foregoing, with the Channel Island collections to be noted, include all the best fruits, and it is not necessary to particularise the varieties in the following, as there were few above average class, and many were below it. The number after each exhibitor's name indicates the number of dishes staged:—Messrs. F. & A. Dickson, Chester, 50, mostly good fruits from pyramid trees in open quarters; Messrs. J. Dickson & Son, Chester, have 32, fairly good; Messrs. J. & R. Pearson & Sons, Chilwell, Notts, 65; Messrs. J. Jefferies & Sons, Cirencester, 20; Mr. W. H. Bannister, Cotch House, Westbury-on-Trym, 24; Mr. T. Laxton, Bedford, 64; Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle, Grantham, 50; Mr. Shingles, gardener to the Earl of Dncie, Tortworth Court, Gloucester, 54; Mr. Garland, gardener to Sir T. Dyke Ackland, Bart., Killerton Park, Exeter, 37; Messrs. R. Veitch & Son, Exeter, 111.

Mr. Gilman, gardener to the Earl of Shrewsbury and Talbot, Ingestre Hall, Stafford, 25; Mr. R. Mackellar, gardener to James Watts, Esq., Cheadle, 30; Mr. C. Clements, Hasley Manor, near Warwick, 12; Mr. W.

Davies, Grove Park Gardens, Warwick, 20; Mr. W. Froggatt, Chesterfield, 12; Mr. W. Gaiger, gardener to S. T. Whitehead, Esq., Derby, 13; Mr. W. H. Pownall, Lenton Hall, Notts, 24; Mr. J. N. Gleeson, Clumber Gardens, Worksop, 40; Miss Johnson, The Beeches, Carlisle, and Mr. McInnes, Carlisle, 1 dish each; Mr. J. Lends, Newport, Salop, 25; Mr. W. H. Divers, Ketton Hall Gardens, Stamford, 20; Mr. Grey, Normanton Gardens, Stamford, 30.

Mr. E. Cole, Althorpe Park Gardens, Northampton, 64 very good samples; Colonel R. T. Clarke, Welton Place, Daventry, 6; Mr. Coomber, gardener to J. A. Rolls, Esq., Hendre, Monmouth, 30; Mr. H. Ritchie, Eardiston Gardens, Worcester, 50; Miss Cheere, Popworth Hall, St. Ives, Hunts, 12; J. Plowright, Esq., Swaffham, Norfolk, 12; Colvill Brown, Esq., The Paddocks, Swaffham, 50; R. H. Mason, Esq., Necton Hall, Norfolk, 19; Mr. G. Palmer, gardener to F. H. Palmer Esq., Drinkstone, Bury St. Edmunds, 25; Mr. J. Sheppard, gardener to J. Berners, Esq., Wolverston Park, Ipswich, 19; Mr. J. McKelvie, Leadenham, Grantham, 30; Mr. F. C. Barker, Heatherdale, Woodford Green, 80; Simeon Jacobs, Covent Garden, 24 dishes of very handsome Pears from Havre; Messrs. Harrison and Sons, Leicester, 54; Mr. R. H. Poynton, Taunton, 31; Mr. H. J. Clayton, Grimston Hall, Tadcaster, 30; Mr. E. C. Hall, Bolton Hall Gardens, Bedale, Yorkshire, 45; Mr. J. Hathaway, Latham House, Ormskirk, 35; and Mr. T. Winkworth, Childwall Hall, Liverpool, 36.

WALES.—There is not a large display from the Welsh counties, and few of the fruits are above medium size. Mr. Middleton, gardener to Sir Watkin Wynn, Bart., Wynnstay, Ruabon, has sixty dishes of average fruits, *Beurré d'Amanlis* being the most notable for quality. Mr. G. Griffin, Slebeck Hall Gardens, Haverfordwest, has twenty dishes. Mr. J. Muir, gardener to C. R. M. Talbot, Esq., M.P., Margam Park, Taibach, shows twenty-four varieties, the best being *Beurré Clairgeau*, Bishop's Thumb, Black Pear of Worcester, and *Belissime d'Hiver*. Mr. Powell of Taibach also has several varieties, but not of remarkable merit.

SCOTLAND.—Some good fruits are included in some of the collections from Scotland, but they are mostly from wall trees, or in a few cases from orchard house trees, but in the majority of cases the varieties are not up to the condition they are obtained in the south. Still, several good representative collections are shown, prominent amongst them being forty varieties from Mr. Melville, gardener to the Hon. G. G. Dalrymple, Elliston House, St. Boswells, all of which resembled orchard-house fruit. The following varieties were very good:—*Nouvelle Fulvie*, *Bergamotte d'Esperen*, *Glou Morceau*, *Passe Colmar*, *Uvedale's St. Germain*, *Winter Nelis*, *Beurré Clairgeau*, *Pitmaston Duchess*, *Durondeau*, *Marie Louise*, and *General Toddleben*. Mr. M. Dunn, gardener to the Duke of Buccleuch, Dalkeith, has sixty-two varieties. Mr. J. W. Machattie, Newbattle Abbey Gardens, Dalkeith, has fifteen. Dr. Robertson, Errol, shows fifty varieties, a very interesting collection. *Ormiston & Renwick*, Melrose, have fifty varieties, some of the best fruits from trees on a south wall and others from an orchard house. Mr. Lacaille, Errol, shows sixteen varieties; and Mr. J. Day, Galloway House, Garlieston, has thirty-five, *Pitmaston Duchess* being beautifully represented by fruits from a tree trained to a south wall.

Ireland is not strongly represented, the collection of twenty varieties from G. F. Unthank, Limerick, being the only one exhibited. These are fairly good, but not extraordinary, *Pitmaston Duchess*, *Beurré Bosc*, *Marie Benoist*, *Durondeau* and *Marie Louise*, however, being notable fruits. Mr. F. W. Burbidge, Trinity College Botanic Gardens, Dublin, sent samples of *Bishop's Thumb*, of which he stated that two thirds of the crop every year come as seedless, long, cylindrical fruits, the others being more distinctly pear-shaped.

CHANNEL ISLANDS.—Jersey has long been famed for its Pears, and it is not, therefore, surprising that the collection of eighty varieties from Messrs. J. Le Cornu & Son, St. Heliers, should contain the largest and most handsome Pears in the whole Exhibition. Single fruits of *Uvedale's St. Germain* (shown as *Belle de Jersey* and *B. le Angévine*) weigh 1 lb. 10 ozs. *Catillac* is the same, and *Beurré Clairgeau* 1½ lb., these being 6 to 8 inches long and 12 to 15 inches in circumference. Grand fruits of the following varieties are also shown:—*Easter Beurré*, *Duchesse d'Angoulême*, *Doyenné du Comice*, *Chaumontel*, *General Toddleben*, *Van Mons Léon Leclerc*, *Louise Bonne of Jersey*, *Durondeau* (shown as *De Tongres*), *Beurré Superfin*, *Catillac*, *Maréchal de Cour*, *Beurré Diel*, *Beurré Clairgeau*, *Nouveau Poiteau*, *Doyenné Boussoch*, *Glou Morceau*, *Columbia*, *Beurré Bachelier*, *Triomphe de Jodoigne*, *Napoleon*, *Marie Louise*, and *Bergamotte d'Esperen*. From Guernsey, Mr. J. Thurston, Mount Row, contributed twenty dishes of fine specimens, of which the best were *Catillac*, *Doyenné du Comice*, *Madame Treve*, *General Toddleben*, *Glou Morceau*, *Beurré de Jonghe*, *Souvenir du Congrès*, *Maréchal de Cour*, and *Pitmaston Duchess*.

FRANCE.—The celebrated pomologist M. André Leroy, Angers, has a very interesting collection, numbering 196 varieties, many of which are little known in England. The fruits are not large, except one giant sample of *Uvedale's St. Germain*, weighing over 2 lbs. M. F. Jamin, Bourg-la-Reine, Paris, shows fifty dishes of handsome fruits, the following being wonderfully fine, and more like Jersey Pears. *General Toddleben*, *Beurré Bachelier*, *Fondante de Noël*, *Beurré Sterckmans*, *Beurré Bretonneau*, *Beurré Six*, *Beurré Clairgeau*, *Beurré Luizet*, *Nouveau Poiteau*, *Beurré d'Hardenpont*, *Lieutenant Poidevin*, and *Triomphe de Jodoigne*.

It may be noted that the Exhibition continues open until next Wednesday, November 4th, so that intending visitors who have not hitherto had an opportunity of seeing it may do so this week.

GREENHOUSES AND THE BUILDING ACTS.

Is a greenhouse a building within the meaning of the Metropolitan Building Acts? This is a question that is repeatedly being asked in the horticultural world, and it will continue a vexed question until an Act is passed exempting greenhouses from the operations of the respective Building Acts. As the law at present stands there is no doubt that a greenhouse is a building within the meaning of the Acts, and a person erecting one is liable to be called upon by a district surveyor to pay his fee, or, more strictly speaking, he renders himself liable to a penalty of £20 for not giving the district surveyor notice.

My impression is that it never was intended district surveyors should

have the privilege of compelling anyone who erects a small greenhouse to pay a fee for surveying it. The Acts are intended for the protection of the public, such as preventing "jerry builders" erecting dangerous structures, &c. There have been a number of decisions in the Police Courts upon this question as affecting greenhouses, but not a single case is reported where the question has been taken to the Superior Courts. The mode of appeal from the Police Court is by special case to the High Court of Justice, the cost of which would be about £20, and this is probably the reason why builders of small greenhouses prefer to pay the 15s. surveyor's fee to having the trouble and expense of an appeal.

In 1880 a case against a Mr. Norris came before the magistrate at the Clerkenwell Police Court. The defendant was summoned for erecting a greenhouse at the rear of his premises without giving the district surveyor notice, and here the magistrate decided that the greenhouse was not a building within the meaning of the Acts.

Again, in 1884, before Mr. Hosack, at the Worship Street Police Court, the district surveyor for East Hackney (North), summoned a gentleman for a fee in respect of a detached greenhouse, 16 feet long and 9 feet wide, which had been erected in a back garden, and in this case the magistrate said he would allow that a greenhouse attached to a building was not exempt, but thought one that was detached, as in this case, was exempt, and therefore dismissed the summons. In addition to these there have been many decisions both in favour of and against the district surveyor, the majority being in favour of the latter.

Magistrates and judges, as we all know, are on the bench only to administer the law as it stands, and it is of little use going to the Superior Court on an appeal in the present unsatisfactory state of the Acts, and I would suggest that the only way to alter it will be, when a new Building Act is introduced, for the lovers of horticulture to combine together to get a clause inserted, either exempting greenhouses altogether, or making the Acts so that they apply only to large conservatories or greenhouses,

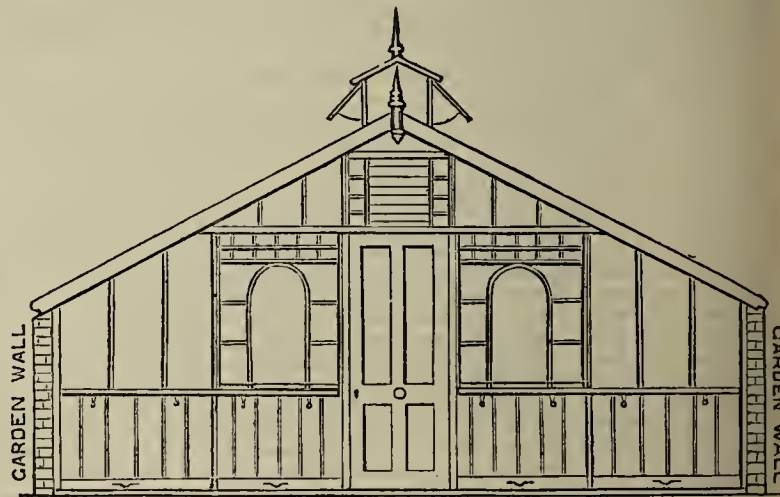


Fig. 60.

say over 12 or 15 feet in height, and by this means the amateur and the small nurseryman will be relieved of the persecutions of the district surveyor.

The Metropolitan Building Act, 18 and 19 Vic., cap. 122, is the principal Act under which district surveyors claim to interfere with the enthusiastic amateur or nurseryman who erects a greenhouse. Sec. 6 of that Act refers to greenhouses as follows:—"The following buildings and works shall be exempt from the operation of the first part of this Act. All party fence walls and greenhouses, so far as regards the necessary woodwork of the sashes, doors, and frames." Sec. 31 says, "With the exemptions hereinbefore mentioned, every building, and every work done to, in, or upon any building, shall be subject to the supervision of the district surveyor appointed to the district in which the building is situate." And sec. 38 deals with the notice to be given to the district surveyor two days before commencing building.

Many persons are under the impression that by placing a greenhouse on wheels they do not come within the Acts. Prior to 1882 it may have been possible to avoid the operation of the Acts in this way, and probably it was in consequence of this being done that the 13th section of the 1882 Act was inserted, which is as follows:—"The Metropolitan Management and Building (Amendment) Act, 45 and 46 Vic., cap. 14, sec. 13. "It shall not be lawful for any person to set up in any place any wooden structure or erection of a moveable or temporary character, unless the same be exempt from the operation of the first part of the Metropolitan Building Act, 1855."

It is possible, under exceptional circumstances, to erect a greenhouse which is exempt from the operation of the Acts, as I know from experience, having had considerable difficulty with a district surveyor in the erection of my third greenhouse (the first two were erected without his aid). He wanted to insist upon my bricking up the front of the house to the sills with 9-inch brickwork and the necessary footings under schedule I. of the Act of 1855, which is as follows:—"Every building shall be enclosed with walls constructed with brick, stone, or other hard and incombustible substance; and the foundations shall rest on the solid ground, or upon concrete or upon other solid substructure." To this I protested, and positively declined either to put a single brick in the building or pay a surveyor's fee.

The greenhouse (fig. 60) was built principally for the purpose of blooming Chrysanthemums in, and as all Chrysanthemum growers know, in order to keep the plants healthy, a plentiful supply of ventilation is necessary both above and below the stage. I had the good fortune to have walls at the end and on either side of my garden, which is 17 feet 3 inches wide, and I determined to avail myself of these walls by erecting a square span-roof house the whole width of the garden, and putting in a front as shown in the accompanying sketch. For ventilation it will be seen I have a lantern light at the top, a patent Moore's ventilator over the door, and four doors opening outwards upon hinges fitted into the framework below the sills. These are the doors the district surveyor endeavoured to compel me to remove and replace with 9-inch brickwork, and thus destroy part of my ventilation.

By erecting it in this way it will be seen I have a greenhouse which is composed entirely of sashes, doors, and frames, and as that portion of a greenhouse composed of sashes, doors, and frames is exempt from the operation of the Acts, I contended, and successfully, that this house did not come within the Building Acts. My contention was not the old question, Is a greenhouse a building within the Acts? but, Is my greenhouse a building? &c.

As before stated, I had some difficulty with the district surveyor, who refused to accept my reading of the Acts, and a lengthy correspondence passed between us. He would insist upon visiting my premises a number of times while the building was in course of erection, and when completed he sent me an account as follows:—"For surveying one building, being a certain building under 400 square feet in area and one storey in height, and being situate, &c., &c., £1." To this was affixed a receipt stamp, across which was written, "Received the above," and signed. A letter from the district surveyor accompanied the receipt, stating it was sent to show he was not "fighting for his fee."

There are two things connected with this receipt which are somewhat amusing. In the first place I had never been requested to pay the £1, and in the second place the Act of 1855 sets out a schedule of charges the district surveyor is entitled to make as follows:—

FEES PAYABLE TO DISTRICT SURVEYOR.

Fees for New Buildings.

For every building not exceeding 400 square feet in area, and of one storey only in height, the fee shall be... .. £0 15 0

It may be well to mention that before the tenant erects a greenhouse similar to the one represented in the sketch he should take every precaution, as it is both expensive and annoying after erecting a greenhouse to find someone in a position to interfere and insist upon structural alterations being made or the removal of the house. For instance, the tenant should have either a clause inserted in the agreement or lease under which he holds his premises, or obtain an undertaking from the landlord, to the effect that he may be at liberty to erect greenhouses and remove them at the expiration of the tenancy, otherwise the tenant may find he has erected a house which his landlord will in all probability endeavour to insist upon his leaving upon the premises. In addition to this the house should be built with gutters to catch the rain, so that the wet does not run off the roof upon the walls. If eaves or gutters are erected over a neighbour's land he has the legal right to have them pulled down without waiting for an actual inconvenience to arise, therefore it is advisable that the neighbour's permission should be first obtained.

From the above facts it will be seen that an ordinary greenhouse, whether on wheels or planks, is without doubt a building within the meaning of the Building Acts, and that directly an occupier commences to erect even one of the smallest greenhouses we find advertised as tenant's fixtures, the district surveyor appears upon the scene and claims to have the right, under the Act of 1855, to compel the unfortunate horticulturist to put brickwork up to the sills, and then at one stroke, not only makes the greenhouse a landlord's fixture, but brings the structure under the Building Acts, which enables him to claim his fee for surveying a greenhouse, which often is so simple that it scarcely deserves to be called a structure.

I have several times used the term "tenant's fixture" in the above article, this is a question which is far from clear and equally as interesting as the present one, and upon which a deal may be said; but as space will not permit I must leave my remarks upon tenants' fixtures for some future occasion.—GEO. S. ADDISON.

CHRYSANTHEMUM NOTES.

THE FROSTS.—There is no doubt but that the early frosts in September played sad havoc in the gardens, more especially in the low-lying districts. I can truly sympathise with your correspondent "A. A." (page 362). It must have been saddening to see all the flower buds cut up as described by him, and to find one's labour for the whole year thrown away and the loss of a floral display. This is one of the many things that a gardener has to bear; fickle seasons, diseases, birds, and insects wage warfare with him on every hand, and with truth, "Love's Labour Lost" might be written across many a label after the loss of a crop through no fault of his own. Happily we have many bright sides to the picture that bears us up through all the disappointments of the seasons. Although living but about four miles as the crow flies from "A. A., Mitcham," the frosts did not hurt my plants of Chrysanthemums that I had out of doors on account of our place being at a much higher elevation. I expected we should have had a little frost, and consequently took the precaution to house temporarily in a shed all that was then showing colour. Often the

effect of frost on the buds is not seen until the blooms begin expanding, when the tips of the florets soon begin to decay, as if scalded.

VARIETIES.—One of the earliest to flower with me this season is *Flamme de Punch*. This variety is now at its best. I first grew it last year, so these flowered rather early; a good type of a Japanese Chrysanthemum, with long drooping florets and a full centre, but the colour was not at all pleasing, it was of a dull rusty brown. This season it has come much better in colour, with a yellow stripe down the centre of each floret. It is very distinct, and I should think a good amateur's flower.

MARGOT.—This is, like the preceding, a variety of recent introduction—and a great acquisition both as a decorative and an exhibition flower. It is quite a new and fashionable colour, and sure to be a favourite with the ladies. It may be described as a beautiful soft rose, with a cinnamon buff tint diffused through the whole flower.

MONS. ASTORG.—This is another valuable addition to the white-flowering varieties, and I think it will fully bear out the opinion I formed of it last season as a grand show flower. The outer petals open out with a pink shade on the outside, but when they are more fully developed they spread out and fall over in a very graceful manner. The petals are broad and of good substance and of a pure ivory white.

MDLLE. LECROIX.—Is another early-flowering white now pretty well known. It has long drooping petals, more or less twisted, of a creamy white. An early variety of good habit. It has a good constitution and is very constant, the flowers keeping well.

PORCUPINE.—I refer to this here, as I have already seen the name mentioned in the daily papers as a new variety amongst others at the public exhibitions in London. I had a cutting sent me this spring, and I recognised it by the foliage as *Gloire Rayonante*, commonly called the Hedgehog, on account of the quilly nature of its florets. It is now in flower with me, and is no other than the old friend I have mentioned.

GLORIA SOLIS.—This is in the way of *Bronze Dragon*, but of a deep guinea gold colour, splashed with bronze. If it will come full up in the centre it will be a great acquisition in colour.—C. ORCHARD, *Coombe Warren*.

WATERING CHRYSANTHEMUMS.—In my experience, and it is somewhat extensive, two cardinal mistakes are made by inexperienced growers in watering these plants. The first is not giving them sufficient liquid support at the right time in summer when the pots are filled with roots, the sun bright, and air dry. At that time they may be watered twice or even thrice a day, and yet not be satisfied if the soil is permitted to shrink from the pots before water is given. Good growers never allow such a mistake as that, and they keep the roots moist without saturating the soil with less water than is needed when the shrinkage alluded to is thoughtlessly allowed. The next mistake consists in giving the plants too much water after they are housed in the autumn. I have heard gardeners say Chrysanthemums cannot have too much water then, and it is given, often strong liquid manure, every day; in fact, in years gone by I had to carry out that practice, and I now know that I ruined many plants "by order."

I have just been in two gardens. In one of them Chrysanthemums are so fine that the blooms are almost certain to win high honours at some of the great shows; in the other there will be few if any flowers of it for exhibiting. In the former case not a drop of water was given to a plant until the pot was rapped and the soil tested. The soil in many pots passed by the waterer "looked dry," but he knew it contained sufficient moisture for the plant that day, and to have given it when not wanted would have done harm and not good. Though the huge plants, clothed to the ground with splendid foliage and showing great fat expanding buds, are only in 8-inch pots, it is almost certain that they are not watered more than twice or thrice a week—that is, those watered to-day will not need a further supply for two or three days, according to the condition of the varieties and the weather; indeed, one plant that accidentally got too wet would not require, nor receive, a drop more water for a week.

In the other garden no such care was exercised. The young man said he gave them "good stuff" every day. It was a "single-handed" place, and in many such gardens Chrysanthemums are remarkably well grown. In this I am bound to say they were simply being ruined. In some of the pots the soil was saturated and poisoned with liquid manure too strong by half. I am quite positive that some of the small plants in large pots would be better without a drop of water for a week, even if the weather were bright, while if dull the soil would remain wet for a fortnight. The plants had lost most of their foliage, and though the soil was quite wet, much too wet, the leaves remaining were flagging with the sun—a certain indication of the roots being injured by too much water and too strong doses of nitrate of soda. The plants had in all probability been drawn up and weakened when young, not potted soon enough, and the earnest young man was striving to make up for lost time; but he was too late and too earnest, and I am sorry to say will not be able to cut six blooms from 300 plants that can win a third prize at a good show.

To grow Chrysanthemums in first-class style stout cuttings must be had, the plants kept sturdy, never checked in any way, and must be watered with as much care as if they were Heaths. These may be easily ruined by under-watering in summer and over-watering in the autumn, and so may Chrysanthemums.—AN OLD EXHIBITOR.

YIELD OF POTATOES.

HAVING seen several notes in the Journal of the yield of Potatoes, I send you an account of what has been grown here this season, the soil

being very heavy. I grow about a dozen varieties, including Ashleaf and Early Regent, which is the best second early I have got, the crop and quality being first-class. From half a pound of the latter planted for trial on 9th April I lifted 119 lbs. on August 17th, all sound. For the main crop I grow Reading Hero, Magnum Bonum, and Reading Russet, the former being the chief one, the quality being so good. From sixty perches planted in the middle of March, we lifted at the end of September over four tons of good Potatoes, three tons of Hero and one of Magnum, with about 3 cwt. of small ones over the four tons. I cannot come up to some of your correspondents in weight of tubers, but there are plenty weighing about 1 lb. each. I may say that Potatoes in this neighbourhood have not done well this season in general, the produce being small, with second growth in many cases.—W. WHITTAKER, *Manor House, Stockland, Bridgwater.*

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 27TH AND 28TH.

THE concluding Show of the series of twelve provided at South Kensington since the beginning of May this year was devoted to Vegetables and Chrysanthemums, and was as satisfactory as those which preceded it. The entries were very numerous in all the classes, and the competition remarkably keen in consequence of the uniform good quality of the exhibits. During these six months a wonderful quantity of horticultural produce has been brought to the exhibitions, and there can be no doubt that the prizes offered have induced much healthy rivalry, which has imparted an invaluable stimulus to horticulture generally. It is to be hoped that a similar series of shows will be provided next year.

VEGETABLE AND CHRYSANTHEMUM SHOW.

COLLECTIONS.—The competition was exceedingly strong with collections of eight kinds of vegetables, no less than eighteen exhibitors entering, and their produce was as fine and clean throughout as anyone could desire. Mr. G. F. Miles, gardener to Lord Carrington, Wycombe Abbey, gained the premier award with a grand collection, one of the best he has shown for some time, and including admirably grown examples of Veitch's Autumn Giant Cauliflower, Sutton's New Intermediate Carrot, Walker's Exhibition Onions, Veitch's Exhibition Sprouts, Stamfordian Tomato, Leicester Red Celery, Chaucellor Potatoes, and Lyon Leeks. Mr. R. Phillips, gardener to Dr. Baker, The Deodars, Meopham, and Mr. S. Haines, gardener to the Earl of Radnor, were second and third, their vegetables being very few points behind the first in quality.

POTATOES.—There was an extensive display of Potatoes, and the majority of the exhibits were of fine appearance. With thirty varieties Mr. J. Hughes, gardener to Colonel Cartwright, Eydon Hall, Byfield, took the lead amongst four other exhibitors, and showed handsome even tubers of Beauty of Hebron, Pride of Eydon, London Hero, Cardinal, Reading Russet, Schoolmaster, Queen of the Valley, Cosmopolitan, Woodstock Kidney, Edgemoor Purple, Vicar of Laleham, Chancellor, Snowdrop, Prizetaker, Lord Rosebery, The Dean, Fidler's Prolific, Rufus, The Captain, M.P., Crimson Beauty, The Colonel, Red Fluke, Adirondack, Sutton's Early Regent, Purple Perfection, Myatt's Prolific, Favourite, and Magnum Bonum. Mr. E. S. Wiles, Edgemoor, Banbury, and Mr. William Kerr, Dargavel, Dumfries, were second and third, each with good specimens. Ten competitors staged twelve varieties. Mr. William Ellington, West Row Gardens, Mildenhall, Suffolk, taking the first place for excellent tubers of Grampian, Chancellor, Beauty of Hebron, The Doctor, Vicar of Laleham, Adirondack, Edgemoor Purple, Magnum Bonum, Lee's Defiance, Lord Beaconsfield, Lifeguard, and Snowdrop. Messrs. E. S. Wiles and J. Hughes followed closely. Mr. W. Robins, gardener to E. D. Lee, Esq., Aylesbury, had the best six varieties of the fourteen lots staged, the varieties being Mr. Breese, Radstock Beauty, Schoolmaster, Reading Hero, International Kidney, and Vicar of Laleham. Messrs. E. S. Wiles and William Ellington were second and third respectively.

MESSRS. SUTTON'S PRIZES.—Messrs. Sutton & Sons, Reading, contributed prizes in two classes for Potatoes, the principal being that for nine varieties selected from eighteen sent out by that firm. Mr. J. Donaldson, The Gardens, Keith Hall, Inverurie, was awarded the premier honours amongst twelve competitors with capital clean tubers of Lady Truscott, Magnum Bonum, Fiftyfold, Woodstock Kidney, Favourite, Prizetaker, Reading Russet, First and Best, and Reading Hero. The other awards were secured by Messrs. Haines, gardener to the Earl of Radnor, Colleshill, Highworth, Berks; C. W. Howard, Bridge, Canterbury; and Mr. C. Ross, Welford Park Gardens, Newbury. In the other class for two varieties, Early Eclipse, a white round, and Reading Ruby, a long red handsome kidney, Mr. J. Donaldson was again first, Messrs. E. S. Wiles and S. Haines being second and third, all showing good samples, though the first were much the best.

Mr. C. Fidler, Reading, also provided a class for four dishes to comprise Fidler's Success, Prolific, and Enterprise, and Reading Russet. Mr. J. Hughes was adjudged the chief prize, and was followed by Mr. E. S. Wiles, Mr. C. Osman, Sutton, and Mr. Ellington, there being in all eight exhibitors.

ONIONS.—These were well represented by solid handsome bulbs, twenty-six dishes of nine being entered in the class devoted to them, fifteen of these being Rousham Park Hero. Mr. G. Neal, gardener to P. Southey, Esq., Bampton, Oxford, was first with Deverill's Anglo-White Spanish, large, even and handsome. Mr. E. S. Wiles followed with the same, not quite so large, and Mr. Aggins, gardener to the Earl of Effingham, Tusmore, was third with Rousham Park Hero. Mr. H. Deverill, Cornhill, Banbury, provided four prizes for the best dishes of the following varieties:—Rousham Park Hero, eleven entries, won by Mr. Henley, Banbury; Anglo White Spanish, six entries, Mr. G. Neal; Main Crop, seven entries, Mr. E. S. Wiles; Finlay's Wroxton, seven entries, Mr. Doherty, gardener to Lord North, Wroxton Abbey. Mr. Deverill also showed a collection of twenty-eight varieties that, like the preceding, were distinguished by fine quality.

Numerous classes were devoted to vegetables, in which the following were the winners of the principal prizes. There were twenty lots of six heads of Celery, Mr. G. H. Richards, gardener to the Earl of Normanton, Somerley Park, Ringwood, Hants, being first with Wright's White, solid white samples, much the best shown. Sutton's Sulham Pink, and Luck-

hurst's Giant White were the other winning varieties. Mr. Richards was also first with Parsnips amongst twenty-two exhibitors, having fine specimens of Elcombe's Improved, and again with Turnips the same exhibitor was first with Snowball. The best of eighteen exhibits of Carrots was shown by Mr. W. H. Kingsmill, Newbury, clean handsome specimens of Sutton's Intermediate, 14 to 16 inches long. Mr. May, gardener to Captain Le Blanc, Northau House, Barnet, had the finest four plants of Brussels Sprouts, capital examples of his well-known strain. For half a peck of Sprouts, Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Newbury, was first with Sutton's Exhibition variety, close neat sprouts. Endive was admirably shown by Mr. G. Bolas, gardener to H. C. P. Gell, Esq., Hopton Hall, Wirksworth, who had selections of Messrs. Sutton's. The best Beet was Pragnell's Exhibition from Mr. May, fine even roots. Autumn Giant Cauliflowers of medium size gained Mr. Haines the first prize, and were preferred to much larger heads. The same exhibitor also had good specimens of Lyon Leek, and led in a class of nineteen competitors. Mr. C. Osman showed fine examples of Sutton's Allheart Cabbage, and was placed first, as he was also with Drumhead and Red Cabbages.

Fifteen dishes of highly meritorious Tomatoes were staged, all being forms of Trophy. Mr. R. Farrance, Chadwell Heath, was first with grand even richly coloured fruits; Mr. N. Phillips being a very close second with rather smaller but equally beautiful fruits; Mr. Worthing, gardener to A. Ross, Esq., Chadwell Heath, being third. Gourds made an interesting display, the fruits being most curiously formed and brightly coloured. Messrs. C. Osman, Glen, and J. Sharpe were the prizetakers.

CHRYSANTHEMUMS.—In the class for a group of Chrysanthemums in pots Mr. G. Stevens, Putney, won first honours with an exceedingly tasteful contribution, the plants well grown, and the blooms, chiefly Japanese, of good size, bright, and clean. There was a margin of dwarf plants in front, principally L'Africaine, which formed an agreeable finish to the group. Mr. A. Cuff, gardener to R. R. Hyatt, Esq., Leigham Court Road, Streatham, was second, his group being fairly well arranged, but the blooms were small; Mr. C. E. Smith, Silvermere, Cobham, being third with loosely arranged rather late plants, but bearing fine blooms of Mdle. Lecroix, Mrs. Marsham, Comte de Germiny, and Queen of England.

Six remarkably good collections of twenty-four blooms were entered for such an early period in the season. Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, being awarded the leading prize for a dozen Japanese, exceptionally fine, and the same number of incurved, several of which were also good. The varieties were, Japanese—L'Incomparable, Mdle. Lecroix, Dr. Macary, Madame Auguste Gautier, Criterion, Margot, Chang, Madame de Serin, Madame Rendatler, Madame C. Audiguier, Soliel de Levant, and Rubrum striatum. Incurved—Queen of England, Jeanne d'Arc, Empress of India, Nil Desperandum, Mrs. G. Rundle, Mrs. Dixon, Baron Benoist, White Venns, Mr. Bunn, Prince of Wales, Mr. G. Glenney, and Lady Hardinge. The second place was taken by Mr. J. J. Lowry, gardener to James MacAndrew, Esq., Belmont, Mill Hill, who had splendid blooms of several Japanese varieties, such as M. Henri Jacotot, Md. Astorg, Mdme. Audiguier, M. Desbrieux, Margot, M. Monssilac, Daimio, Berthe Rendatler, and Magnum Bonum. Mr. C. Goode, gardener to G. G. Stone, Esq., Eastcote, Red Hill, was third, his best blooms being Madame C. Audiguier, Roseum Superbum, and Margot.

MISCELLANEOUS.—A silver-gilt medal was awarded to Messrs. Sutton and Sons, Reading, for a superb collection of Potatoes and Kales. There were three large heaps of Reading Hero, Magnum Bonum, and Reading Russet, all fine tubers. Eleven dishes of unnamed seedlings were also shown with samples of the produce of the Darwin Potato, Solanum Maglia. There were eighteen dishes of varieties sent out by the firm, and thirty-four of general varieties, all distinguished by their fine appearance. Of the Kales, the Exquisite Dwarf Green Curled, Dwarf Purple, and Improved Variegated were very beautiful. Silver medals were awarded to Mr. W. Kerr, Dargavel, Dumfries, for 100 dishes of Potatoes, comprising many varieties all superbly represented by clean handsome tubers. M. M. Vilmorin et Cie, Paris, showed an interesting collection of about 100 old and new varieties of Potatoes, some of which have been cultivated by them for eighty years. The Marjolain Hâtive, the Early Ash-leaved Kidney, was notable, as were also several forms of the Vitelotte or Fir Apple type, some of which are quite cylindrical and long, strangely and regularly indented, which is most marked in a small form called Asperge. To Mr. J. Deverill for the Onions already noted; and to Mr. Dance, gardener to Col. Lowe, Gosfield Hall, Halstead, for eighty dishes of Apples and Pears, comprising many large handsome fruits. Bronze medals were awarded to Mr. C. Fidler, Reading, for an extensive collection of Potatoes; and to Messrs. Hooper & Co., Covent Garden, for a choice group of Carnations and Gesneraceous plants, including numerous handsome varieties.

COMMITTEES.

FRUIT COMMITTEE.—Harry J. Veitch, Esq., in the chair. Present:—Messrs. Paul, Ford, Ross, Haywood, Roberts, Bunyard, Blackmore, Hogg, and Burnett, and Mr. A. F. Barron, Secretary. Mr. Pritchard, Queen Street, Sittingbourne, sent an Apple named St. Christopher; the fruit tasted of the packing, and it was requested to be sent again, when six fruits must be shown. Mr. A. Lancaster, Holkham Hall, Norfolk, sent a large handsome Apple named Lord Leicester. It has a very firm, crisp, and agreeably acid flesh, and promises to be a long-keeping kitchen Apple of great merit. It was placed in charge of Mr. Barron, with the request to be brought forward later in the autumn at a subsequent meeting. Mr. William Earl-y, Ilford, sent a dish of a large variety of Apple from a seedling grafted eighteen years ago. It bears a strong resemblance to Lord Derby, and the Committee asked to see it in June or as late as it was in condition. Mr. Cummins, gardener to A. H. Smee, Esq., Wallington, sent an Apple named Smee's Seedling, which was past. He also sent tubers of Magnum Bonum Potato, some of which weighed 2 lbs.; a vote of thanks was awarded. Messrs. John Peed & Sons sent a seedling Plum found in a hedgerow, a prolific variety keeping till Christmas. It was very acid, and the Committee requested that it be exhibited again next year. G. F. Wilson, Esq., Heatherside, Weybridge, sent a Pear named Beurré d'Anjou from a tree grown in a pot for the last twenty-eight years; a vote of thanks was awarded. Mr. Jones, Carshalton, sent Celery Plein blanc dorée, to which a vote of thanks was awarded. Mr. Miles, Banbury, sent a variety of Brussels Sprouts called Edgemoor, which was passed.

FLORAL COMMITTEE.—G. F. Wilson, Esq., in the chair. Present—Messrs. J. Douglas, John Laing, W. Bealby, J. Child, H. Herbst, J. James, John Fraser, Thos. Baines, John Dominy, H. M. Pollett, E. Hill, H. Cannell, H. Ballantine, H. Turner, James O'Brien, Henry Williams, Amos Perry, Shirley Hibberd, and M. T. Masters.

Messrs. J. Veitch & Sons, Chelsea, exhibited several new Chrysanthemums, all Japanese, the best being Lakme, bright red; Melanie Fabre, of a rosy tint; Souvenir d'Haarlem, like Margot, but of a deeper colour; and Lady Rosebery, one of Salter's varieties, with flat florets of a pale rose or blush colour. A botanical commendation was awarded for *Peristeria pendula*, bearing wax-like flowers dotted with purple. *Amazonia punicea* with scarlet bracts and yellow tubular flowers, was also shown, together with a fine plant of the graceful *Davallia retusa*, and a collection of *Bouvardias*, comprising President Garfield, double pink; Alfred Neuner, double white; Maiden's Blush, pale pink; Lelantha, very bright scarlet; Priory Beauty, soft blush pink, handsome; Vreelandi and Umbellata Alba, white, and Elegans, scarlet. A vote of thanks was accorded for a plant of *Eugenia Ugni* bearing numerous fruits. Votes of thanks were also accorded for the following: To Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington; to James Bateman, Esq., Worthing, for sprays of *Acacia retinodes*, with small yellow flowers; to Mr. B. S. Williams for *Echmea imperialis* of the Marie Regina type, with large drooping crimson bracts, and *Sarracenia flambea*, a hybrid between *S. psittacina* and *S. variolaris*; to Mr. Robert Owen, Maidenhead, for cut blooms of Tuberous Begonias and Chrysanthemums; to Messrs. H. Cannell & Sons, Swanley, for blooms of Zonal Pelargoniums Swanley Gem and Henry Cannell, both grand varieties, rosy salmon and deep crimson colour; to Mr. S. Forbes, Roehampton, for a stand of Chrysanthemum blooms; to Messrs. E. G. Henderson, Pine Apple Place, for Nerine elegans cornulea, a variety with a purplish tinge in the flowers; and to Mr. Ridout for blooms of Tea Roses very fresh and beautiful, especially President, Annie Ollivier, Souvenir d'un Ami, Mons. Lambard, Etoile de Lyons and Catherine Mermet. C. Norman Cookson, Esq., Wylam-on-Tyne, showed several beautiful hybrid Calanthes, two of which were certificated, others being named C. Normani, white with a red eye, and C. Sedeni candidula, red with a white eye.

CERTIFICATED PLANTS.

Cattleya autumnalis (J. Veitch & Sons).—A small-flowered but extremely pretty variety, with purplish sepals and petals, a crimson lip with a white throat.

Chrysanthemum Val d'Andorre (Mr. Wright, Middle Temple Gardens).—A Japanese variety shown last year, having flat or slightly fluted florets streaked with bright red on a yellow ground. Blooms large and of good substance.

Sarracenia Buchani (B. S. Williams).—A hybrid between *S. rubra* and *S. purpurea*, dwarf, the pitchers 6 to 8 inches high, the lid broad, rounded, and erect, and the colour an extremely rich dark red with darker veins.

Cymbidium elegans (B. S. Williams).—A strong-growing plant, with leaves like *C. Lowianum*, the flowers $1\frac{1}{2}$ inch long, tubular in form, of a peculiar buff tint, and borne in dense pendulous racemes.

Nepenthes Excelsior (B. S. Williams).—A hybrid between *N. Hookeriana* and *N. Rafflesiana*, with pitchers of medium size, of neat form, and finely mottled with bright red.

Calanthe Alexandri (Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne).—A beautiful hybrid between *C. Veitchi* and *C. vestita rubra oculata*, the flowers of an intensely deep crimson colour, the two lower sepals whitish.

Calanthe Cooksoni (Norman C. Cookson, Esq.).—A hybrid between *C. Veitchi* and *C. vestita luteo-oculata*, one of the grandest white forms yet obtained, the flowers very large, of handsome shape, and pure white, with a light yellow eye.

AUTUMN SHOWS.

EXHIBITORS of Chrysanthemums will soon be actively engaged in preparing for the numerous shows announced for the present season, and the following list of fixtures may be useful as a reminder. Secretaries of Societies not mentioned will oblige by forwarding their schedules.

- October 21st to November 4th.—Chislewick (Pear Congress).
- November 3rd and 4th.—Ealing, Southampton, and Lambeth.
- " 4th and 5th.—Brixton.
- " 5th and 6th.—Richmond, Havant, and Highgate.
- " 9th and 10th.—Stoke Newington.
- " 10th.—Southend and Putney.
- " 10th and 11th.—Brighton and Kingston.
- " 11th.—Basingstoke.
- " 11th and 12th.—National Chrysanthemum Society and Croydon.
- " 12th and 13th.—Lindfield and Portsmouth.
- " 13th and 14th.—Huddersfield.
- " 14th.—Ramsbottom.
- " 17th.—East Grinstead and Devizes.
- " 17th and 18th.—Lincoln, Manchester, and Winchester.
- " 18th and 19th.—Northampton, Bristol, Burton-on-Trent, and Birmingham.
- " 19th.—Taunton, Hammsmith, and Aylesbury.
- " 19th and 20th.—Hull.
- " 20th and 21st.—Sheffield.
- " 24th.—Liverpool.

LATE GRAPES AND CHRYSANTHEMUMS.

As proposed in the columns of the Journal by "A Surrey Gardener," seconded by Mr. Stephen Castle, and finally accepted by Mr. H. Holmes (Hon. Sec.) on behalf of the Committee of the National Chrysanthemum Society, that a Grape class or classes should be added to the January, 1886, Exhibition of Chrysanthemums to be held at the Royal Aquarium, Westminster. I think the idea is a good one, and I am of opinion that to make it a representative Show of late-keeping varieties several classes should be added for both black and white varieties, such as Lady Downe's Seedling, Alicante, and Gros Colman; for white variety, Muscat of Alexandria, and Golden Queen as any other variety of white Grape. Those who attended the Grape Show in September at South Kensington would notice how badly Golden Queen was represented. There were

only two exhibits, and they were quite green, simply because it is a late Grape. I think nothing is so damaging to the character of this Grape as showing it in an unripe state. I do not maintain that it is a first-class Grape not to be compared with Muscat of Alexandria and some other white Grapes. I have heard several persons speak of it as good for nothing, and not worth growing; but with me it has proved to be a very useful late Grape after Christmas when other white varieties have been over, and it grows and ripens equally well with Alicante and Lady Downe's Seedling. I have seen this Grape at some of the late autumn shows in very fine condition, but unless a class is provided for it I do not think it would be shown in competition with Muscat of Alexandria. Can any reader of the Journal inform me if Gros Maroc is a late-keeping variety?—A. O. W.

JUDGING GRAPES.

I DID not state that the "popularity" of the Alicante was the only ground claimed by "A Kitchen Gardener" for its superiority; but it certainly is the principal ground which he has to stand upon. He asks me if I can see nothing more in his notes than the brief distinction of popularity. Yes, I see attempts made to establish the superiority of Alicante over Madresfield Court; but, as far as I can see, only attempts. We are fully aware that there are not nearly as many Vines of the latter variety planted as of the former, and I think that the principal reason for this is that Alicante is easier to grow, not because it is a superior Grape. Madresfield Court might be much more planted if it were not written about as on page 292 by "A Kitchen Gardener." In our own case, for the first two seasons it failed to colour properly and also cracked somewhat badly, but this was no doubt partly owing to wrong treatment. This season we were able to cut bunches good enough to accompany the Alicante amongst the eight which were placed second at the Royal Caledonian Society's Show. So I say to those who have not yet succeeded, Try again, for it is worth a little trouble.

"A Kitchen Gardener" would almost make your readers believe that because the grand bunch of Madresfield Court shown at Edinburgh was not mentioned in the report, that it was not equal to Alicante which is shown so well in all the collections, or, indeed, that it was nothing out of the common; but the fact is, that it was shown in the class "for any black not named in the schedule," and as far as I remember very little mention was made of any of the double and single-bunch classes, I presume simply because it would occupy too much of the valuable space of the Journal. It certainly was not because they were not deserving of notice. I am pleased to see that Mr. D. Buchanan has lately given an accurate description of the bunch to which I referred on page 342, which saves me the trouble of saying any more about it, except that I think with the many that it was the finest bunch in the Show, all things considered. It may not, as "A Kitchen Gardener" says, "speak highly of its abundance;" but is abundance to be considered the test of merit? Judging from what we too often see at shows, appearance is very often regarded as the test of merit; but, as Mr. Iggulden says on page 342, I certainly think that the present discussion will cause Judges to reflect a little more before making their awards next season; at any rate, let us hope so. We do not wish to exclude Alicante and other fine late Grapes from our autumn shows. That is not the point under discussion; the principal question put by Mr. Iggulden at the commencement was, Is appearance to go before quality? or questions to that effect. If "A Kitchen Gardener" cannot grow Madresfield Court himself, he ought not to discourage others who are willing to try.—WM. JENKINS.



KITCHEN GARDEN.

FORCING.—Kitchen garden work is not pressing just now. The whole of the crops which are of any use this season are in and left to go on as best they can, and the most important matter to be considered is the forcing of those roots, the produce from which is so much valued about Christmas and during the winter. Preparation for this should begin at once. There are two ways of doing the work; one is by the aid of fermenting material, the other by the help of hot water. Where a well-heated pit or Cucumber-like house is at command successful forcing is a very easy matter. It is not very difficult either with fermenting material, but not so quick as with the hot water. Fallen leaves, which are now very plentiful, and manure from a stable, are the best materials for hotbed-making.

RHUBARB.—This is very easily forced by the aid of these. Some large pots, old boxes, or empty casks should be turned upside down over the crown of each clump of Rhubarb, and then a good heap of the fermenting material should be put around each of these. It should be made as firm as if it was being formed into a hotbed of the ordinary kind, and the material should not be put on merely to cover the box, or whatever it may be, but it may extend over the whole of the space where the roots are, as it is by the heat penetrating the soil and exciting these that growth is produced quickly. The stems would never spring up if surface heat alone

was applied, and when the soil is warm it does not matter much whether the interior of the cask, or whatever it may be, is heated or not. The upper end of the cask should only be a little way from the surface, so that it can be conveniently examined occasionally to see how growth is going on, and cutting ought to be done without having to upset anything to get to the stems. This is our favourite way of forcing Rhubarb. We are just covering a few roots now; more will be covered in three weeks or so, and others again when necessary, and our supply will begin about the middle of December, and lasting, if we wish it, until growth is natural in the open air. We have lifted the roots and forced them in a house, but the produce was not so fine as from under the manure, and we also preferred the flavour of the old cask produce. No roots will bear forcing for two years in succession, and no attempt must be made to force those which underwent the operation last winter. When our roots become too large we split them into a number of pieces, make plants of each, and we have never any scarcity of forcing roots. Those which are forced in the ground will grow strong again if protected until the spring, but those taken up for forcing are of very little use afterwards.

ASPARAGUS.—We have put in our first batch of roots of this, and will send the first to table by the first week in November or thereabouts. Nothing gives so much satisfaction as a forced vegetable as Asparagus. We plant out about 300 young roots annually, force the same number, and we have always a full supply. Last winter, and for many before that, we lifted some of the strongest of the roots for forcing from our quarter-acre bed. In spring these blanks were well manured and filled, and this system of lifting and replanting goes on annually.

The roots are put in about 3 feet apart each way, and we find this way of working acts uncommonly well. In beginning to force the stems are cut over close to the surface, the roots are dug up without breakage, and then they are packed in as closely as they can be put in a layer in the bed of a Cucumber pit. A little soil is put under them, more over them to cover the crowns; then a watering is given, and with a bottom heat of 80° and a top heat of 65° many fine heads soon appear. No attempt is made to blanch it, as it is more tender and much better flavoured green. Sometimes part of the Cucumber pit bed is empty to receive it, and if not the roots are put in round the mounds in which the Cucumber plants are growing. We put in two or three dozen large fully matured roots once a fortnight or so, and keep on cutting so long as we care to put the roots in. At times when space under glass was scarce we have made a large hotbed, placed a frame on the top of this, and put the roots inside on the top of the manure, covering them with a little soil, and keeping the lights close afterwards. It does not grow so quickly here as with the Cucumbers, but otherwise the forcing was very successful.

SEAKALE.—The leaves have not died from the Seakale crowns yet, but they will soon go, and then forcing may be commenced. Pots or boxes may be used for going over the crowns, and the hotbed system which is recommended for Rhubarb will produce excellent Kale. Growth is not very rapid at this season, and forcing should commence five weeks or so before the produce is required. Only strong well-ripened roots need be taken in hand now, as none other will force profitably. Keep the small ones until the spring. Besides the covering plan we have frequently lifted quantities of the roots, placing from six to eight of them in a 10 or 12-inch pot and then plunge the pot in a brisk bottom heat in a dark place. Although the growths are not so robust under this treatment as with the roots in the ground, they are earlier, and where roots are plentiful this lifting process may be practised with advantage up to the new year.

KIDNEY BEANS.—These are the most difficult of all to force in the short days; unless they can be accommodated in thoroughly heated structures their culture should not be attempted. They will only succeed in a temperature of from 68° to 75°, and at times, especially when the plants are in bloom, the atmosphere must be kept dry. A leaky house will not do for them. With a good house and plenty of heat, however, they may be grown well, and the plants will fruit in winter about ten weeks after sowing. We generally sow the seed in small 3-inch pots first, and when the plants are 4 inches high or so three of the small pots are put into a 9-inch one. They are kept near the glass and in as much light as possible. At first they do not require much water at the roots, but as soon as the pots become filled with them a little guano water is beneficial. We grow our plants on the back shelves of a Pine stove and find them succeed very well, although we can hardly say they are a paying crop, from December until March at least. Mint and Tarragon may both be forced by lifting a few roots, putting them into a shallow box, covering them with a little soil, and placing them in a temperature of 70°.

FRUIT FORCING.

FIGS.—*Early-forced Trees in Pots.*—In our last calendar we directed attention to the importance of getting the trees from which ripe fruit is to be gathered in April ready for starting in November, and if those matters have received prompt attention the plunging material has been cleared away, the roots shortened, and the turf walls rebuilt of good fresh turf with a sixth of lime rubble, and a sprinkling of crushed bones—an excellent material for the new roots to work in. The turf walls should be rammed firmly until the level of the pot is reached, when the roots that have found their way over the rim are built in, and the turf walls taken up 3 inches higher to form a receptacle for a mulching of decayed manure, and prevent liquid manure running off when the trees require water. If the trees have been infested with red spider or scale the wood-work ought to be painted, the walls scalded and afterwards limewashed. If mealy bug has got a hold turpentine should be freely used with the paint, and for dressing the trees a wineglassful of petroleum should be added to every gallon of the dressing used, and which, stirred constantly

by another person so as to keep it mixed whilst it is being applied to the trees, remembering that its potency depends in a great measure upon its thoroughness of application. Give the trees a good watering so as to have them thoroughly moist at the roots by the time arrives for closing the house in the middle of November, by which time some fermenting material should be ready, such as Oak leaves, introducing those between the pedestals, which will afford a genial bottom heat, gradually reaching the roots, producing a moist heat, saving fire heat, and lessening the necessity of syringing until the sun is getting more power. Small trees may be placed in the first instance on the surface of the fermenting bed, and when the heat declines to 75° they may be plunged; but the heat at the base of the pots ought not to exceed 75°, and instead of sinking the pots deeper as the heat declines introduce an additional supply of leaves at short intervals, until the bed is raised to the rim of the pots. This will keep the trees well up to the light—a very important matter in Fig culture.

Planted-out Trees.—Those that have been in bearing since midsummer will now be going to rest, and may be divested of the old foliage, as soon as it parts freely from the wood when touched by the hand. In the case of trees that are making too strong wood and the trees are in inside border, the present is a favourable time for root-pruning—an operation attended with the best results, especially where the space allotted to the branches is limited. Work it well under the roots, remove any inert soil, cut off all strong roots, and examine the drainage. The young or fibry roots should then be relaid in fresh compost, firmly rammed and mulched and left dry until the time arrives for starting the trees. The best soil for Figs is a good friable loam with a liberal admixture of lime rubble, broken bricks, and bone dust. Stimulants, whether in the form of solid or liquid manure, may always be given at the surface when the trees are in growth. The young shoots that have been allowed to grow up to the glass will be thickly studded with embryo fruits, which must be guarded from injury when the trees are dressed, as well as from the effects of frost, by being untied and drawn down below the trellis until the time arrives for thinning the branches that have reached the extremity of the trellis.

Late Trees.—Have all root-pruning finished, bearing in mind that strong-growing varieties, when confined to limited root space, can only be kept fruitful and manageable by limiting the rooting area, and feeding when carrying heavy crops of fruit. The houses should be freely ventilated, especially at night, except when frosts prevail.

CHERRY HOUSE.—The lights having been taken off the house, the trees are fast casting their foliage, and as soon as the leaves are all down prune at once. Cut back to within an inch of the base from whence the shoots started all those laterals which were made during the summer, and which have been stopped at about the fifth joint. It is not good practice to shorten any of the terminal shoots unless the trees have reached the extremity of the trellis, or when it is necessary to multiply the shoots another season. The trees should then be washed with a brush with soap and water, and may then have the branches tied together to save them from injury whilst the house is being cleansed and the walls limewashed. The latter should be made of the best fresh lime, put on rather thinly, and is best with a little size to make it adhere firmly. Dress the trees then with an insecticide, train and tie them to the trellis. These matters being attended to, all the loose material on the border should be cleared off, and any soil of an inert character that can be forked over and changed for fresh turfy loam of a calcareous character, or a sixth of lime rubbish may be added, then top-dress with 3 inches thickness of decayed manure. If the borders are in the least dry they must have a thorough supply of water, but the lights having been off it will be necessary only in very exceptional cases. Keep the house ventilated fully at all times excepting during frost, until such time as forcing operations are commenced, which, to have the fruit ripe at the beginning of May, will need to be at the beginning of December.

Strawberries in Pots.—Much of the success in Strawberry forcing depends upon the treatment the plants are subjected to at what is commonly known as the resting period prior to forcing. The wintering of Strawberries in pots by stacking them one upon another in sawdust or other material against a wall, or housing them on the borders of fruit houses, is not only unnecessary but absolutely injurious, as they not infrequently become dry at the roots, and the dry atmosphere induced by the free ventilation wastes the energies of the plants. Plants that have had the crowns thinned in the season, the side shoots removed and kept to a central crown, will have these well developed, having made their growth early, and have the pots filled with roots. If intended for early forcing they will be the better for heavy lights placed over them, the pots being plunged in ashes or cocoanut fibre refuse, or even tree leaves, but not so thick as to heat, but the lights must be withdrawn in mild weather, and only used in case of heavy rains, when they must be tilted, or in case of frost. They should be regularly supplied with water at the root, as the Strawberry never suffers so much as when allowed to become dry at the roots. Late plants should be placed in a raised bed or plunged in ashes or other material on the flat in a sunny position to finish the ripening process, and they too will require to be well supplied with water. Sun and sharp winds ripen the growths and solidify the crowns far better than the atmosphere of houses.

Autumn-fruiting plants should have a steady night temperature of 55° to 60°, and 10° to 15° rise by day; ventilate freely so as to prevent the condensation of moisture on the fruit, as that will cause its speedy decay.

PLANT HOUSES.

Chrysanthemums.—It is not safe to leave these outside any longer, for they are very liable to suffer from hailstorms, wind, and frost. Varie-

ties such as Princess of Teck, Princess Louise, and other dwarf plants grown for flowering after Christmas, may be left outside for a short time longer provided they are plunged in a sheltered position and protected during unfavourable weather by means of mats, tiffany, or other material. It is sometimes necessary to keep them covered by day as well as by night to insure their remaining in good condition until they are housed. When these plants are housed they should be sorted into batches, and all the late-flowering varieties arranged by themselves, so that they can be kept back as much as possible by leaving full ventilation on the house which they occupy both day and night when the weather will allow of this being done. The plants struck late in from 3 to 5-inch pots can be kept late by protection in cold frames. The lights should only be placed over them during bad weather, and if this is attended to there will be found no difficulty in keeping a good number of these dwarf useful plants for flowering during January. If there are aphides upon the plants they should be destroyed by fumigating the house with tobacco when the plants are arranged. Mildew should be watched for, and directly its appearance is observed the affected parts must be well syringed with a solution of soft soap and water in which a little sulphur has been mixed. Continue feeding the plants until they bloom. It is necessary to use a little fire heat occasionally for those developing their large flowers from crown and terminal buds, for the petals are liable to damp if due care is not taken. The house in which these are unfolding should be kept perfectly close during fogs, or the flowers will be ruined.

Imantophyllums.—These are very frequently seen with the tips of their leaves brown, which is the result of careless watering at this season of the year. If too much water is given so their roots the foliage is certain to become spotted, which destroys their beauty, for the foliage is effective even when the plants are not in flower. From the time growth ceases no more water should be given than is sufficient to keep the foliage healthy. From the present time keep them rather dry, and then the foliage will remain perfectly good. Some of the earliest plants are showing their flowers, but as these will not be wanted for some time keep them back by having the house as cool as possible.

Abutilons.—Plants in small pots for flowering during the autumn and winter should now be placed in a temperature of 50° to 55°. These must be kept slowly moving if they are to unfold a good number of their useful flowers. They should occupy a light position, and have free ventilation daily when the weather is favourable. Small plants soon cease flowering under greenhouse treatment. The plants have filled their pots with roots, and weak stimulants should be given every time water is needed.

Epiphyllums.—Keep these cool, or they will flower before they are needed. The flowers are more useful after Christmas than they are before. While under cool treatment very little water will be needed at their roots; in fact, in this position they should be kept rather dry. The roots soon perish if the soil in which they are growing is too wet while the plants are in a state of inactivity in a cold house. Plants with stems varying from 9 to 18 inches in length are very effective when in flower arranged amongst *Adiantum cuneatum*. The heads of the plants should be slightly elevated above the Ferns, which should be employed only to form a groundwork.

Luculia gratissima.—Where this beautiful flowering plant is grown in the conservatory or other comparatively cool structures it should be examined, for it is very subject to thrips. If any are present sponge the leaves with weak tobacco water. The flower trusses are advancing rapidly, and any insects that may be present must be destroyed, for it is impossible to do so when the flowers are expanded.

THE BEE-KEEPER.

THE BEST HIVE IN CREATION.

THE reason I have given the hive about to be explained the above name is that its principles have been advocated in this Journal by some, while it at the same time was as strongly condemned by others. Some of the latter, as well as many continental and transatlantic brethren, affirm it is the "best hive." Its explanation will give my reasons for saying so. Although I never made myself a prominent exhibitor I have been a successful one; almost, though not every time my hives have been exhibited, they were placed first. At the first Crystal Palace Show, though I entered some exhibits, paid the entry money, and received the receipt for the same, they were not allowed to compete. No writing could wring an explanation from the Secretary. In 1875, at the Caledonian Show, I also had several hives in competition, was unsuccessful, and some parts of my hives received severe criticism from the Judge, yet the very parts found fault with are faithfully copied by him now.

In 1876, at the Kibble Palace Botanic Gardens, Glasgow, I again competed. My hive was then awarded the first prize, but on consulting with the Judges and consideration that Mr. Abbott had come a long distance, and that he claimed properties in his hive suitable for the south, I agreed to share the honours with him. One feature my hive possessed that year was a shade. The weather previously had

been so hot that many hives' combs collapsed. This shade was raised above and around the hive by light frames of wood or wire. Pockets at each corner weighted are sufficient to prevent its being blown away. Although the Editor of the *British Bee Journal* was an eye-witness to this shade he announced a short time after that, though shade was essential, no person had up till the time of his writing suggested such a thing.

It is not through any bravado that I mention these trifles, but to impress your bee-keeping readers, particularly those of the "Cambridgeshire Bee-keeper's" type, that I am not, nor have I been, either a follower or a copyist, as some would like to make it appear. Surely I am entitled to my own. I will patent nothing nor lift my voice against those who do so honourably, but let us be all straightforward and help one another.

In describing this hive I need not set forth in detail all the advantages it possesses. Its construction will suggest to the merest tyro its advantages. There are several things bee-keepers should bear in mind—that the useful and economical hive is one that any person can make either from old or new wood, and when made it is capable of being handled with ease and moved about from one place to another. This cannot be said of many of the hives of the present day.

A free circulation of air, too, without a draught is as essential to a hive as a dwelling house. In the external appearance and construction of "the best hive in creation" and that of the cheap, thin, weather-boarded outside case lately described there is no difference. Internally there is. The outside case is suitable for any hive, octagon or square. If the octagon is used, then it will be necessary to have the doorway extending on three sides. The need of this will be explained shortly. For lightness the perforated floor will be the bottom of the case, which may be either hinged or sliding.

The case may have its posts any size, but I prefer 1½ by 2 inches, allowing 1½ inch between the wall of the case; and as it is now ceded by so many practical bee-keepers that the tiering system is the best for all purposes, we will adhere to what I have found the best size—viz., 15½ inches over the hive, or the same size and material as the Stewarton. Less in size and deeper would not be wrong, but larger superficially it must not be. The case when finished will measure about 19 inches, quite a handy size for removing to the Heather; and, owing to the lightness of the material it is made from, equally light of itself—a desirable quality. Fifteen inches and a quarter being the outside measure of the hive, must also be the exact size between the posts. Before the lining is nailed on outside the case there must be a thick rail let into the posts on the two sides just where the handles are to be screwed on; then, though very heavy, it can be lifted with safety. On the inner sides, at the junction of the lower and upper edges of the divisions of whatever number and depth they may be, a strip of wood about 2 inches broad by half an inch thick must be let in flush with the inner side of the posts. In the centre of this groove cut as much as will admit one flat of seven-eighths angled iron which forms the slide on which the hive or division runs. Before this is completed, however, it might be well to give the inner side of the lining a coat of tar. If the case is inverted when that is done none will escape to outside to injure the paint, which should be white or of a light colour. After the tar is dry pack the space between outside boarding and inner side of posts with straight straw. The door the same, which is also light, having two upright bars 2½ inches broad by five-eighths thick, to which the boards are nailed.

Underneath the door, as well as above it, there must be a strap of galvanised strong hooping both to keep it rigid, but the upper one must be portable, fixing with brass screws. This is desirable if the hive is to be practically workable. When the door of the case is open the hive proper will have the appearance of a number of drawers all having handles at the back. This hive being particularly adapted for examining any division without interfering with the other parts, and that to be done without killing bees. The entrances to all the divisions must extend the whole width, the mouthpiece of which must be a fixture between the front posts, bevelled a little on both sides, so that it may not only part with the hive easily, but that it may enter as easily into place when the division is pushed in. The slides must be put in exactly, and the divisions rather slack than tight. If the divisions are made to fill neatly and easily between the guides it does not matter, though there is a slight opening between the upper edge of a division and the underside of the angled iron slide, which is only one-eighth of an inch thick. The only opening that will affect the hive is at the back, but the opening there is filled with a little block kept at hand.

Slides are employed for sections or supers similar to those for divisions; only if small supers or sections are used a frame of angled iron must be made suitable to sizes used. This can be done cheaply. The zinc-covered roof, too, will be all the better to have the underside covered with straw, but the ventilation must not be closed. I do not consider any hive complete unless it has its crown

fitted with slides of some sort. Of these there are three kinds—the sliding as in the Stewarton, the lateral as in the Lanarkshire, and the moveable ones falling in between frames, but not close. When a hive is supplied with slides clean supers are certain, manipulation is easier, and bees are not so liable to be killed as when a quilt is used over frames with the openings between. Besides, the bee-keeper is saved much labour and annoyance in gathering, applying, and removing the propolis, always offensive and ample where quilts are so used. Frames where the dropping-in slides are used should not have broad ends, but the distance staples should be in the ends. There is one great advantage tiering hives have over broad and shallow ones—viz., the bees keep quieter during winter and do not fly out so readily in the treacherous sunshine when snow is on the ground.

I hope the foregoing notes will give an idea how to make such a hive, partly from old Orange boxes, and that bee-keepers will learn that the hive so protected with the best of non-conducting material, yet allowing a circulation of air all round, is a good one, and I hope to show that it is easy to manipulate.

To be prepared for the manipulation the bee-keeper must have a sufficient number of sheets of brown paper. These should be kept perfectly flat, and may be fastened somewhere to the door of the case, where also a few feathers should be. In the vent pocket have an exciseman's oval-shaped ink-bottle to hold carbolic acid, and another containing camphorated olive oil, very useful for reducing the pain and swelling caused by stings. Some sort of adjustable stage or platform having a division or hive similar to those inside, and on to which the inner one with bees and combs is to be drawn. If the combs are wanted free from bees slip a sheet of carbolicised paper between each seam. The bees will retreat to the box beneath, which the bee-keeper can dispose of as he has a mind. If the queen is wanted comb after comb will have to be examined separately, and when not found in the one will be in another. Sometimes the bees take a turn and seal the outside upper combs, which stops the quick and satisfactory filling of supers, as bees do not care to walk over sealed comb. When this occurs draw out the upper division and either remove the sealed combs or break the seals, then the bees will fill the supers.

As the supers rest more on the division than these do on one another, it will be advisable to wedge the supers up a little from the back, where all the manipulation is performed. This is easily done with a long screwdriver and two wedges. The hive or divisions, if exactly made, may be of the roughest description. If any think of having such a hive I doubt not but improvements will be suggested, and many more advantages will be seen than I have enumerated, but there is no other hive made that combines usefulness, control in manipulation, comfort, elegance, durability, yet lightness, and so well adapted for both bee-keepers and bees, as the "best hive in creation."—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Pansy (G. H. B.).—The flower did not arrive in a sufficiently fresh state for its merits to be satisfactorily determined; but it appears to be a very good variety.

Lecture on Fruit Trees (Gardner).—Mr. Baillie's lecture was published in this Journal, and we are not aware that it has appeared in any other form. As you are a reader of the Journal you will possess the lecture if you have preserved the numbers, and if you have not, we think the publisher can supply them.

Bulbs Decaying (J. H. S.).—The bulbs appear to be attacked with a small mite that is very destructive to Eucharis bulbs. You had better burn the worst examples and wash the remainder in a solution of Gishurst compound before potting or planting them. They should be well surrounded with sand or sharp ashes.

Pears Cracking (H. S. E.).—The cracking is due to the light sandy or gravelly soil, and the variety, which seems to be some late sort which we cannot name, is not likely ever to succeed. Graft the tree with such as Doyenné du Comice, Van Mons Leon Leclerc, or Beurré Superfin.

Erythras and Tigridias (Somerset).—The height referred to is that of the tree in the Brazilian forests. All the varieties you name grow about the same height when planted close to a south wall in this country. The stems are cut down in winter, and if ashes are placed over the roots fresh growths appear in spring and flower when they attain a height of 3 to 5 feet according to the nature of the soil. The growths are usually trained to walls, but in sheltered places in some of the London parks the plants grow and flower in open beds, the plants in that case being wintered in pots. If your plants are established near a warm wall to which you wish to train the growths we should not disturb the roots, but afford protection in the manner indicated. If your garden is much exposed there is no certainty of these plants flowering in the open, and you had better try the species you have in that way before purchasing the others. For producing a good mass Tigridia bulbs should be planted not less than 6 inches apart. They should be inserted during a fine day in spring, when the soil is in free good working condition.

Liliums (A Subscriber).—You had better turn out the bulbs, removing most of the old soil from them with any dead roots above or below the bulbs, but not disturbing the large fleshy roots that you ought to find, and place them at once in fresh soil. They grow well in equal parts of turfy loam, peat, and leaf mould, adding sand and crushed charcoal to render the whole porous. Place sand round the bulbs, and do not fill the pots with soil, but leave space of an inch or two for top-dressings. If the soil is pleasantly moist, as it should be, not decidedly wet, nor so dry that it escapes between your fingers when a handful is grasped, no water will be needed, provided the pots are plunged in damp cocoa-nut fibre refuse or ashes and covered with the same 3 or 4 inches deep. A cold frame is a good position for them during the winter and the earlier stages of growth in the spring.

Size of Chrysanthemums (A. B.).—Your bloom of Queen of England, 24 inches in circumference, is, if solid, above the average size of flowers of this variety staged at the London shows, and Lord Alcester, 18 inches in circumference, is not often seen larger when cupped and arranged in the stands. Good judges have regard to the depth and solidity of blooms, and do not look with favour on what they term "blown out" examples. We do not for a moment suggest that yours are of this character, and if they are deep, firm, and fresh, they are large enough for staging anywhere.

Angle for Cordon Trees—Gishurst Compound (F. J.).—For getting the "best value out of the space" the trees should be trained at an angle of 45°, but not when first planted. They may be vertical, or only slightly depressed the first year for encouraging growth, then gradually brought down to the angle indicated. Any that do not grow freely may be kept upright, others that grow robustly may be depressed, and in this way your wall may be uniformly covered in the course of a few years. A strong lather of Gishurst compound is excellent for brushing into the crevices of fruit tree branches in winter for the destruction of insects. We have never said it will cure canker, but is at least worth trying, and if it fails it is certain softsoap will not succeed in accomplishing that desideratum.

Moss Roses—Primulas (W. A.).—You have not made the condition of the Roses clear to us. There are numbers 3 feet high, yet the growth they make annually is weak and poor, while others of the same height have luxuriant shoots. The length and strength of the wood made in the summer is what must be known before anyone can properly tell you how to prune and treat them. If the pots of your Primulas are filled with roots give them clear soot water of the colour of pale ale about twice a week, and let them have a light position in a house having a temperature ranging from 45° to 55°. We are not aware that you can safely push them in any other manner, unless you like to try a little sulphate of ammonia, about a quarter of an ounce being dissolved in a gallon of water.

Drying Pampas Grass (South Norwood).—The best and only plan that we know is to cut the plumes with a good length of stalk when quite dry, and before the plumes are quite clear of the sheaths, placing them in a greenhouse or other place where they will be dry, in a similar position as grown, or upright. In ten days to a fortnight they should have the leaves or grass removed and given a gentle shake; they will then open out, and have the beautiful feathery appearance for which they are so much admired. Ours dried in this way retain their beauty for at least twelve months, indeed we have some two years old still very attractive.

Temperature for Ripe Grapes (Merchant).—The temperature for Black Hamburgs and Alicante Grapes, now they are ripe and the leaves falling, should be kept as equally as possible at 50° by artificial means, with ventilation in the daytime, so as to allow of damp escaping, the pipes being allowed to cool before night, and even then a little top air may be given so as to prevent the deposition of moisture on the berries through the night. The temperature at night should not fall below 45°. Do not allow the temperature to rise in the morning over 50° without giving a little air, or moisture will be condensed on the berries, and they will not keep well. The Muscat will not now colour well, but we should afford a temperature by day of 60° to 65° by artificial means, and ventilate freely above that temperature, indeed allow a little air with a gentle warmth in the pipes constantly until the leaves turn yellow, when the temperature may be lowered to 50° gradually, ventilating freely by day in favourable weather. We think the Vines are in good condition, and the promise for another year excellent. You may apply a dressing of quicklime to the border, and point it in with a fork, but not so deeply as to injure the roots. Half a bushel per rod (30½ square yards) of border would in your case be amply sufficient.

Preserving Labels—Impatiens Sultani (Trike).—We know of no better method of rendering wood labels used in flower pots more enduring than that suggested a few years ago by Mr. G. F. Wilson—namely, soaking them in hot paraffin. Some that Mr. Wilson had soaked for forty-eight hours absorbed 12 per cent. of the paraffin. You probably know that paraffin is not petroleum, but a solid substance, and it contains nothing injurious to plants; but if you cannot readily obtain it you may try soaking the labels in petroleum, which is a preservative of wood. You may insert cuttings of

the Impatiens now, and they will be well rooted in a week in a brisk temperature. After young plants are established the old can be thrown away if you have not room for them. If you have no propagating case insert one cutting in the centre of a thumb pot of sandy soil, and as many more as you like in the same way, placing the pots in a box, which cover closely with squares of glass; stand the box in a warm position in your plantstove, and we think you will succeed. Your other letter shall have attention.

Mealy Bug in Vineries (J. L. A.).—Stronger remedies are safely employed by experienced gardeners than can be safely recommended to less experienced amateurs. Mr. Divers is a very able, also a very careful man, and it is certain he would not have described his practice on page 288 (October 1st) if he had not found the strong remedies he adopted perfectly safe. We have seen the mixture of tar and clay applied to numbers of rods by various gardeners with perfect safety, but have not had occasion to use it, as our Vines are clean. We have never seen such a strong mixture of petroleum and carbolic acid applied to Vines as mentioned by Mr. Divers. and we suspect he would have achieved his object by using less quantities. The reply given on page 371 is founded on practical experience, and the method there described of cleansing Vines and vineries has proved successful. It is very important that the Vines be examined daily as they are coming in leaf, and every insect destroyed. This may be done, as was stated, with a small brush and methylated spirits. Just as the buds are swelling, the rods—not the buds—may be dressed with petroleum, mixing a wineglassful in a gallon of water in which 2 ozs of softsoap is dissolved. Comparatively mild remedies thoroughly applied are as effectual as stronger applications not so carefully given. Every part of the house must be cleansed with the same care as the Vines.

Renovating Vines (J. F. H.).—The Vines are evidently in poor condition, the roots perhaps deep and in an unfavourable rooting medium. We should remove the surface soil down to the roots and pick out as much of it as possible from amongst them carefully, and if the roots are deep—more than a foot from the surface—they should be carefully lifted and placed in fresh soil nearer the surface; but if they are not deep, then only proceed as above advised, and in place of the soil removed from amongst the roots add a compost of fresh turfy loam, with a tenth part of old mortar and a twentieth of crushed or half-inch bones and charcoal in equal proportions, the turf chopped up moderately small, and the whole thoroughly incorporated. Work it well in amongst the roots with the band, and then cover them 6 inches deep with the same kind of compost, and mulch the surface 6 inches thick with rather short fresh stable litter, which will protect the roots from frost and encourage surface fibres. No manure should be mixed with the soil, but what is required in the way of stimulants should be given at the surface as mulching and liquid manure during growth. The quantity per Vine will depend upon its size, but in ordinary cases a distance of 12 feet from the stem onwards is treated as suggested. The best time to perform the work is now, doing it in mild weather, and having all in readiness so as to do it quickly, keeping the roots as little exposed to the atmosphere as possible.

Hardy Rose-coloured Nymphaeas (G. G.).—We cannot better answer your question than by citing from a letter that was communicated to us last year by a great authority on and successful cultivator of aquatic plants:—Questions are from time to time asked regarding the hardiness of the rose-coloured variety of our common Water Lily, and also the variety rubra of *N. odorata*, not only north of the Tweed, but many lovers of the beautiful aquatics in the south are not at all sanguine of its success outside. That they are hardy enough even far north there can be no doubt, sufficient time having elapsed since their first introduction into cultivation in our gardens; and where the anxiety to have them has overcome the doubt of their hardiness they have surpassed all hopes, and within the last half-dozen years their capacity for standing even the hardest winters has been thoroughly tested. With them, however, as with many other aquatics that adapt themselves to our trying climate, planting near the surface of the water should in all cases be avoided—from 2½ feet to 1½ foot at the very least being about the depth usually recommended, as deep planting not only serves to protect the crowns from frost were they likely to be injured, but it also serves as an inducement to freer flowering. *Nymphaea alba* var. *rosea*, which is confined to Sweden, was first introduced into this country about the year 1872, and since that time has been cultivated with success in several places where aquatic plants are a speciality; indeed, wherever the *N. odorata*, *N. tuberosa*, and *N. alba* can be grown there will be no trouble with the rose-coloured variety in question. Of *N. odorata* var. *rubra* much the same may be said, and as they both form quite a novelty in the way of hardy aquatics, we may yet hope to see our lakes made beautiful with a colour that unfortunately has been too long associated with glass houses and hot-water tanks. In the matter of soil they are not fastidious. Strong loam, to which has been added a good half of cow manure and rough sand, will be found a good mixture in which to grow them; and, instead of lifting or disturbing the plant when fully established, preference may be given to a good top-dressing for the first two or three years, or until a failing is detected. The other plants that would no doubt flourish in your tank are *Aponageton distachyon* and *Menyanthes trifoliata*. The Water Flag, *Iris pseud-acorus*, would also succeed.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*N. H. Pownall*).—Suffolk Thorn. (*J. D.*).—1, Reinette de Canada; 2, Scarlet Nonpareil; 3, Sam Young; 4, Dutch Mignonne; 5, not known; 6, Beurré Langelier. (*C. E.*).—1, Gansel's Bergamot; 2, Doyenné du Comice, (*S. T.*).—1, Pearson's Plate; 2, Golden Pearmain; 3, Paradise Pippin; 5, Emperor Alexander; 6, Northern Greening. (*E. M.*).—1, Hollandbury; 2, Lane's Prince Albert; 3, Golden Reinette; 4, Lewis' Incomparable (?); 5, Sturmer Pippin. The Walnut is the Thin shelled. (*A. W.*).—1, Dumelow's Seedling; 2, Yorkshire Greening; 3, Hall Door; 5, Court Pendu Plat; 6, Braddick's Nonpareil. (*J. K.*).—1, Reinette de Canada; 2, Rosemary Russet; 3, Catshead; 4, Golden Noble; 5, Small's Admirable; 6, Yellow Ingestrie. (*S. T. Clothier*).—1, Brown Beurré; 2, Napoléon; 3, Easter Beurré; 4, Bergamotte Esperen; 5, Vicar of Winkfield. (*W., Reading*).—1, Golden Pearmain; 2, Golden Noble; 3, Dutch Codlin; 4, Caraway

Russet; 5, not known. (*A. Brooke*).—1, Beurré d'Aremberg; 2, Beurré Diel; 3, Passe Colmar; 5, Hacon's Incomparable; 6, Crassane; 7, Glou Morceau. (*F. P., Exeter*).—1, Hughes' Golden Pippin; 2, Ribston Pippin; 3, Cellini; 4, Mère de Ménage; 5, Gilgil. (*W. W. W.*).—1, Franklin's Golden Pippin; 2, London Pippin; 3, Cellini; 4, English Codlin; 5, Keswick Codlin; 6, Claygate Pearmain.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A. H. P.*).—*Cerasus borealis*. (*Rosa*).—1, *Ipomœa palmata*; 2, Impossible to name: send larger specimen with flower; 3, *Clematis brachiata*; 4, *Bryophyllum calycinum*.

COVENT GARDEN MARKET.—OCTOBER 28TH.

BUSINESS is quiet, early Apples being now cleared. Kent Cobs free at same rates.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples	½ sieve	1	0	3	6	Oranges	100	8	0	12	0
Canadian ..	barre	10	0	15	0	Peaches	per doz.	2	0	8	0
Cobs, Kent ..	per 100 lbs.	24	0	27	0	Pears, kitchen ..	dozen	0	6	1	0
Figs	dozen	0	8	0	9	„ dessert ..	dozen	0	4	1	6
Grapes	lb.	0	6	2	0	Fine Apples English ..	lb.	2	0	4	0
Lemons	case	15	0	21	0	Plums	½ sieve	1	3	2	0
Melons	each	1	0	1	6	St. Michael Pines ..	each	3	0	7	6

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Artichokes ..	dozen	1	0	0	0	Lettuce	dozen	1	0	1	6
Asparagus ..	bundle	0	0	0	0	Mushrooms ..	punnet	0	6	1	0
Beans, Kidney ..	lb.	0	3	0	0	Mustard and Cress ..	punnet	0	2	0	0
Beet, Red	dozen	1	0	2	0	Onions	bunch	0	3	0	0
Broccoli	bundle	0	9	1	0	Parsley	dozen bunches	2	0	3	0
Brussels Sprouts ..	½ sieve	0	0	0	0	Parasnips	dozen	1	0	2	0
Cabbage	dozen	0	0	1	0	Potatoes	cwt.	4	0	5	0
Capiscums	100	1	6	2	0	„ Kidney ..	cwt.	4	0	5	0
Carrots	bunch	0	3	0	4	Rhubarb	bundle	0	4	0	0
Cauliflowers ..	dozen	2	0	3	0	Salsafy	bundle	1	0	0	0
Celery	bundle	1	6	2	0	Scorzoneria ..	bundle	1	6	0	0
Coleworts	dcz. bunches	2	0	4	0	Seakale	per basket	0	0	0	0
Cucumbers	each	0	3	0	6	Shallots	lb.	0	3	0	0
Endive	dozen	1	0	2	0	Spinach	bushel	2	0	4	0
Herbs	bunch	0	2	0	0	Tomatoes	lb.	0	4	0	0
Leeks	bunch	0	3	0	4	Turnips	bunch	0	4	0	6



WINTER DIET.

AGAIN has the time come round for bringing dairy cows and cattle into yards off the pastures, and well will it be now before it is too late if we carefully consider ways and means, and see if our provision of food for winter is ample for feeding all the live stock we intend keeping till we are able to turn them out upon the grass again. In doing this we ought to allow a full margin for a late spring, which really means that we should now have enough food laid up in store or upon the land for the next seven months. To those who were so unwise as not to do this last autumn came a severe trial in spring, when, instead of being able to turn out the cattle upon the grass early in March, they had to buy food week after week till late in May. It is true enough that many a man did turn out his cows in April, but to very little purpose, for the pastures were generally bare where this was done; yet many a meadow even then gave pleasing indications of the heavy crop of hay which was saved in such excellent condition when summer did come. Paradoxical as this statement may appear, yet it is true enough. The man whose store of fodder and roots was exhausted prematurely was in most cases the man whose poverty-stricken pastures made little progress till late in spring, while he whose forethought had led him to make due provision to meet the fluctuations of our uncertain climate, had taken good care to impart fertility to his pastures by the timely application of manure. We have repeatedly told how this restoration of fertility, or rather this prevention of exhaustion in pastures, is managed, and we hope to do so again at the proper season. But even in winter the difference between rich and poor pasture is too remarkable to escape attention. We must not, however,

debate on this matter now, important though it be, but we will keep to the point of our lesson—the quantity of food we have in store, the number of animals for which food has to be found during winter.

Dairy cows must not only be kept, but they must have a liberal diet; therefore we must give them first place. Next to them come any beasts which we design either for Christmas beef or to have ready for the butchers at a given time in the three months after Christmas. Next come heifers and cow calves reserved as future additions to the dairy herd. We cannot well dispense with them, but if, after we have made sure of having enough food for the whole of them, there is the slightest prospect of running short, we must have no hesitation as to the immediate disposal of any other calves or store cattle we may have. The price is undoubtedly so low now as to make one slow to sell, a yearling being hardly worth so much as a calf was a year or two ago. We have recently seen yearlings in fair condition sold for £5 10s. apiece; yet we cannot hope to gain any profit upon keeping superfluous stock till spring. It has never answered to let any cattle fall into poor condition in winter, and we again say, Keep well within the scope of your means in this matter, and let what you do be done in the best way. In making calculations take care that there is abundance of wholesome food and pure water, in addition to warm, snug, yet spacious quarters, dry bedding, and sound sheltered yards. By sound yards we mean yards with firm raised bottoms and efficient drains, so that there is no danger of any harmful accumulation of water.

Sheep must also be taken fully into account, for notwithstanding recent low prices the flock still brings in the nimble 9d. of profit under skilful management. We must have chaff of both straw and hay, with crushed Oats and bran of dry food, with plenty of Cabbage and grass up till lambing time, when—or a little sooner—Mangolds come fully into use, and Turnips are held in reserve later on for the breeding flocks, but hoggets will be put upon them at any time. Do not in any case reckon upon Turnips for the breeding flock till after lambing; many serious losses by abortion have happened solely through folding the ewes upon Turnips. By all means keep ewes in lamb in good condition now and onwards throughout winter if you would have a healthy strong crop of lambs. Our safety crops for spring feeding of the flock are almost all sown, but it is not too late to sow Winter Tares for a supply of green food next May, and we strongly advise those who feel doubtful of their provision of food for that critical period of the year to lose no time in sowing a large breadth of them. We have had a few acres of Mangolds pulled somewhat early specially to clear the ground for another piece of Winter Tares. Our bailiff said it had always been customary upon that farm to put sheep upon the Mangold ground when cleared of roots to eat the leaves, but we would not allow this to be done, knowing as we do what an excellent supply of manure the leaves impart to the soil when ploughed in quickly. In the field next to where the Mangold was so cleared off we have eleven acres of Rye nicely above ground, a strong thick sturdy plant. This green crop is after Barley, and no manure was used for it at the time of sowing; but next February we purpose giving it a hundredweight of nitrate of soda per acre.

(To be continued.)

WORK ON THE HOME FARM.

Calves and colts should now be confined to the yards and lodges to keep them from exposure to cold and wet, and to protect calves from hoose, which is so often rampant among them in autumn. The larva is picked up by them from the coarse herbage which comes in wet undrained land, or from foul water in stagnant pools, and develops in the animal into thread-like worms from 1 to 2 inches in length. These worms are sometimes found in masses in the throat, causing a cough which proves fatal in many a case. The remedy is two or three inhalations of sulphur fumes; but do not forget that prevention is better than cure, for if once this disease get strongly hold of an animal it causes much debility. The sowing of winter corn and the application of artificial manure goes steadily on as weather permits. See that all sloping land has enough water furrows to check any serious surface washing by heavy rainfall.

Every effort must be made to get in the Wheat as soon as possible. In very wet districts it is safe practice to plough and sow day by day, for if we plough and wait for fine weather for sowing, we may have long to wait at this season of the year. Do not let Mangolds remain out in the fields any longer. No more growth can reasonably be expected now, and much harm may be done by early frosts. Do not forget that Mangolds may be used at once with perfect safety if pulped, mixed with chaff, and allowed to undergo a slight degree of fermentation before being used. Much Barley was laid and discoloured. Some of the grain, too, is slight, owing to drought. We should refrain from pressing the sale of such, or of any inferior corn, but rather hold it in reserve for crushing or grinding for animal food. Barley meal for pigs, and oatmeal for both pigs and poultry, is excellent food, and there should be no waste upon a farm, nor need there be any sacrifice of corn at extremely low prices. Pigs that have been out on the stubbles may now be disposed of at once for porkers, or brought on quickly for bacon. We have no faith in a low diet for swine, but prefer to bring them on quickly batch after batch, and we have several yards full of them now to consume inferior corn and to make some manure for our root crops next summer. We have so often found some farmyard manure insure success in root culture, especially in seasons of drought, that we do not like to dispense with it altogether for such crops.

DRAINING.

THIS is the time of the year when landowners undertake draining operations, and, if I may be allowed to speak from experience of most English counties, those operations will be conducted in a wrong because not a thorough manner.

The usual way of draining a field is to cut a trench about 3 feet deep, put in some 2-inch pipes, fill in the stiff clay again, and thus ends the matter. In a few years the pipes are choked up, or rather do not act, the truth being that they are choked up in a few months by the loose soil from above, but there is a certain amount of good effected by them until the soil that was turned back upon them becomes homogeneous once more; then of course drainage is at an end.

Now, the only lasting and efficient cure for bad drainage is not to turn back the clay upon the drain pipes, but to burn that clay into ballast, and put back the hallast upon the pipes. Ballast is both hard and porous; rain trickles slowly but surely through it down to the pipes, and thus, instead of the drain being merely 2 inches in width when the job is done, that drain is at once increased to a practicable depth of 3 feet with a 2-inch fair outlet all along its base. Such a drain can never become stopped.

To burn clay to ballast is very inexpensive—not more than a shilling per cubic yard of clay. It expands 25 per cent. in burning. The ballast heap when cold should be raked down, so as to avoid using the fine stuff. This fine stuff is rich in soluble potash, and the very best of manures for Potatoes. In fact, in many cases the manurial value of the superfluous ballast would pay the expense of burning it.

If any of your readers desire information how to burn clay into hallast I shall be happy to inform them, or, if you think fit, to describe the process in your columns.—W. M.

[Practical notes on this important subject could not fail to be acceptable to many readers.]

OUR LETTER BOX.

Grain (F. S.).—The Tare seeds had escaped from the packet and fell out of the envelope in opening the letter. The Barley is only a moderate sample. It is contrary to our practice to recommend dealers. Farm seeds can be had in all markets that are largely attended by agriculturists.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
	Barome- ter at 32a and Sea Level	Hygrome- ter.		Direction of Wind.	Temp of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min	In sun.	On grass.	
1885.										
October.										
Sunday	18	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.
Monday	19	30.185	45.1	44.6	N.	47.8	50.4	43.0	58.8	38.2
Tuesday	20	30.122	43.6	41.8	N.	47.7	50.8	41.3	91.2	35.4
Wednesday ..	21	29.990	42.8	39.7	N.W.	47.2	51.3	39.9	89.2	35.6
Thursday	22	29.832	43.8	40.6	E.	46.6	51.4	39.7	61.8	34.5
Friday	23	29.587	44.3	42.9	N.E.	46.6	50.7	39.5	61.6	33.1
Saturday	24	29.535	43.1	44.8	E.	46.7	48.7	42.1	51.2	35.2
Saturday	24	29.208	46.3	45.2	S.W.	47.2	49.5	44.4	62.1	40.4
		29.780	44.6	42.8		47.1	50.4	41.4	68.0	36.1
										1.020

REMARKS.

18th.—Dull and rather raw.
 19th.—Fair generally.
 20th.—Fine bright day.
 21st.—Foggy till 11 A.M., then fine till 3 P.M., afterwards thick with slight rain.
 22nd.—Fine early, cloudy day, moonlight night.
 23rd.—Dull early, very wet after 10 A.M., and all night.
 24th.—Rain early, fine and bright about 10 A.M., then windy, dull, and showery, but not measurable.
 Rather damper and cooler than the previous week, and with less sunshine. The mean maximum temperature continues its unbroken decrease, which this week amounts to 2°.—G. J. SYMONS.



COMING EVENTS

5	TH	Richmond, Highgate, and Havant Shows.
6	F	Crystal Palace Chrysanthemum Show.
7	S	
8	SUN	TWENTY-THIRD SUNDAY AFTER TRINITY.
9	M	Stoke Newington (two days). [Brighton Shows.
10	TU	Royal Horticultural Society; at Kensington. Kingston, Putney, and
11	W	Basingstoke, Westminster Aquarium, Croydon, Ascot, and Bath Shows.

FRUIT TREES—PRUNING AND LIFTING.

THE work of pruning, nailing, and root-pruning fruit trees is often, if not generally, postponed till winter, but no more unsuitable period could be selected for such work. It is unsuitable because the individuals engaged in it are exposed to the risk of catching severe colds and probably rheumatism. Economically it is not the best season, for the days are comparatively short then, and a man cannot accomplish one-fourth the work during piercingly cold days that he can when the weather is genial. We should also remember the beneficial effect early pruning has upon fruit trees. When the trees are pruned directly, all fear of their starting again into growth is past; every ray of light and sunshine has free access to the wood and fruit spurs, and assists in the important work of maturation which is so essential to the production of good crops of fruit. Early pruning is further beneficial because it results in the resources of the trees being spent in completing the full development of the buds instead of being conveyed into wood that has to be cut away.

The general autumn and winter work is considerably advanced by completing pruning and nailing by the time the foliage falls, if it cannot be accomplished earlier. This allows of the necessary manuring and digging being brought to a close as early as possible. When fruit gardens are in close proximity to the houses or other frequented parts, it is important that the vacant ground between the trees should be made neat as early in the season as practicable. It is useless to turn over walks or regravell them until this work is completed, and when pruning is left until the winter this department is untidy for some months longer than need be the case.

Nearly the whole of our fruit trees are pruned, and every advantage is taken to complete the nailing as rapidly as possible. The ground where the bush fruits are grown is ready for manuring and forking over, deep digging being avoided. After the Raspberries were gathered the old canes were removed, as well as all that were not required for next year's fruit-bearing, those retained being secured to thin supports, and the only work remaining to be done is that of shortening the canes and wheeling on manure; the former will be done before these notes are printed, and probably the latter also. Gooseberries have been pruned some time by merely removing branches that are likely to hang upon the ground; also strong useless wood or any shoots that crowd or render the bushes unshapely. Hard pruning is unnecessary, and a crop of fruit is certain by the system of pinching the shoots while young, as advocated during the growing season.

It was then asked how the buds were preserved from the birds and the foliage from being devoured by caterpillars. Both questions in my case are easily answered, the first by placing a net over the trees directly the ground has been forked, or we should get no fruit. This necessitates the trees being planted as much together as possible. The Gooseberry is well worthy of this protection where birds are troublesome,

and in the end it is the cheapest and most effectual manner of preserving the buds. Some years ago caterpillars were very prevalent; they were destroyed by syringing the trees with a solution of hellebore, and since then every moth that made its appearance was caught, and we have never been troubled with caterpillars since. Apples and Pears were pruned as soon as the fruit was gathered; in fact, all the work will be completed by the end of next week, except a few standard trees and a wall of Morello Cherries.

If due attention is paid to thinning and pruning during the summer, very little remains to be done during the autumn months. Many of the shoots on both Apples and Pears that were pinched early in the season have formed splendid fruit buds instead of extending into growth. This renders autumn pruning a mere matter of shortening leading shoots, thinning out weak growths likely to crowd the trees and those that started after the second pinching. Fruit buds cannot be induced to form on the young wood of trees subjected to hard pruning in winter, but luxuriant growth is promoted, and this does not ripen sufficiently in the majority of seasons to produce fruit spurs on the young wood.

Trees that form fruit spurs on the young wood after being pinched early in the season are generally well managed, and almost certain to carry crops of good fruit if the weather during the flowering period is favourable. Severe frost will certainly destroy the strongest and best developed flowers, however well ripened the wood may be; but if the flowers are set they will bear a good deal of cold before the young fruits are destroyed. This was proved last spring, for certain varieties of Pears were just set and subjected to 8° of frost, yet they bore large crops of fruit, but all in flower along the same wall were practically barren. I believe a piece of tiffany hung in front of the wall that one night would have saved the blossom. The result, however, is that we have only had a partial crop. Horizontally trained trees running east and west have scarcely a fruit upon them. Several pyramidal trees bore only on the east and west side. This clearly proves that in our case, at least, the sun did its share in the work of destruction. In future trees exposed to a sharp frost while in bloom will as far as practicable be screened from the sun the day following the frost, with mats or any similar material.

But, to return to our subject. The lifting of fruit trees in order to root-prune them, plays as large a part in promoting their fertility as pruning does. Trees that are not root-pruned often make an enormous quantity of wood, and rarely bear good crops of fruit, but often fall a prey to canker. In order to keep fruit trees healthy, and in the best condition for bearing fine fruits annually, they must be subjected to periodical liftings of their roots. With disbudding early in the season, summer-pinching when necessary, and a careful system of root-pruning, the knife is scarcely needed in their management except, perhaps, to thin out the fruit spurs that, with age, have a tendency to become crowded.

In a properly managed fruit garden there are always some trees that need root-pruning, and it is much better to lift them as needed than to wait until a good number require attention. When the trees that require lifting are done as they become ready this operation does not prove a very laborious one, and the whole of the trees are retained in a healthy fertile state. Directly a tree shows signs of growing too strongly a trench should be cut at a suitable distance from the stem and the strongest roots shortened. While the trench is open it should be ascertained if any roots are extending in a downward direction, and if so they should be removed. When trees possess a large quantity of fibry roots, which is generally the case when subjected to a judicious system of lifting, the trench cut round the tree will often prove sufficient to check its growth without disturbing the ball to any great extent. Those with plenty of fibry roots make short sturdy growths, and these form quantities of flower buds the same season. It is often necessary to cut

these hard back in order to keep growth in the trees, and be certain that they are sufficiently vigorous to swell their fruits to a large size. It is undoubtedly a mistake to get the trees in such a fertile state that they produce annually nothing but fruit spurs. They must not by an unduly severe system of root-pruning be crippled. It is as necessary for the trees to produce every season a moderate amount of wood as it is for them to have fruit spurs for the production of fruit. Stunted trees may be renovated by lifting their roots and the removal of the fruit for a season or part of the crop. When these trees are lifted a few barrowfuls of good loam, with some half-inch bones and a little soot or wood ashes mixed with it, should be laid amongst the roots. This in a season or two invigorates the trees and works wonders in bringing them back to health and vigour. Freedom from fruit-bearing alone for one season has a wonderful effect upon such trees.

Where practicable all trees that are lifted should have a good mulching of manure as far round the stem as the roots extend. On light shallow soil we have found it a good plan to mulch all fruit trees annually. Root-pruning may be done any time during the autumn, and we have always found that the earlier it is completed the better. When lifted before the foliage falls the trees make a fair quantity of roots before winter, and start into growth the following season with greater freedom.—WM. BARDNEY.

THE PRIMULAS.

(Continued from page 357.)

P. DENTIFLORA, And.—I have never seen this in cultivation, although I hope it will arrive one day from some of the old gardens. It resembles *P. cortusoides*, and were it not for the very distinctly serrated petals might be mistaken for a form of that species; the above character, however, which is said to be constant, is considered by many to be a good specific distinction. It has also the recommendation of flowering during the month of September, which should be enough for all growers of hardy plants. It grows about a foot in height, with a straight stem carrying from twelve to eighteen deep purple yellow-eyed flowers in a loose corymbose head. The leaves are the same shape, and not unlike *P. cortusoides*, not rough however, and not so deeply dentate. Syn., *P. cortusoides*, var., *Lehm*; *P. dentata*, *Don*.

P. DIGenea, A. Kern.—A hybrid between *P. elatior* × *acaulis*; *Reut*, more interesting than beautiful, and not by any means a desirable garden plant.

P. DINYANA, Lagger (*P. super-integrifolia* × *viscosa*, Kern).—Closely allied to *P. Muretiana*, another hybrid, which is sub instead of *super-integrifolia*. *P. Dinyana* is a first-rate garden plant, growing with freedom even on the border, and never failing with a plentiful crop of its cheering flowers. It, however, requires well-drained soil, and is all the better of a few stones packed round the neck of the plants, as it is inclined to get leggy. The leaves grow about 4 inches long, curving down from the crown. They are ovate lanceolate, with ciliated and distantly dentated margins. The scape is from 3 to 6 inches high, terminated by about half a dozen lovely deep purple flowers, produced in April and May. Native of Bavaria.

P. DISCOLOR, Leyb. (*P. super-auricula* × *daonensis*, Kern).—A very beautiful plant from the West and South Tyrolean Alps, where it is found in the fissures of the granitic rocks at elevations of 6500 to 7000 and 8000 feet above the sea. It is amongst the easiest of this section to grow when in its element, granite. We manage it by tightly wedging the fleshy roots between the rough pieces; and as it seems to prefer an almost perpendicular position, care should be taken that it does not want for water, and especially during the time it is making its growth. The habit of the plant is more in the way of *P. Auricula* than *daonensis*, as also are the leaves. They are nearly ovate, very slightly dentated at the margins, and sparingly covered with glandular hairs. The petioles are leafy, broadening to the clasping point. Flowers large for the size of the plant, lilac or violet purple, very striking and beautiful. It flowers during April.

P. DUMOULINII, Stein.—A hybrid between *P. subminima* and *spectabilis*, Stein. This plant is nearly related to *P. minima*, the chief difference between them being in the shape of the leaves, the great number of flowers borne on short sturdy stalks, and the much deeper colour. On the mountain Trate in Indicien there seems to be a great variety of forms, the result of crosses between the

above two species, some of which approach *spectabilis* and others *Fachinii* and *minima*. *P. Dumoulinii* forms pretty little tufts of jagged-edged rosettes, from which rise the numerous flower stalks, bearing each many flowers, and which if it were as plentiful would make it more preferable than *P. minima*. It thrives well on limestone, and seems to like a fully exposed situation. It flowered with us in April.

It was named in honour of Count Carl Dumoulin of Bertolshelm, a Bavarian botanist of repute.

P. ELLIPTICA, Royle (fig. 61).—Introduced a few years ago by the late Anderson Henry, Esq., Edinburgh, and sent out by him under the name of *P. obtusiloba*, a name by which a form of *P. involucrata* has also been distributed, probably through some mistake in labelling the seed sent home. It grows well in the north, the home for Himalayan plants generally, but proves delicate in the south of England; indeed it often dies after it has flowered, as so many plants from that region do in our hot dry summers. It may be described as a *Primula rosea* with bluish purple instead of rosy red flowers. The leaves are not at all mealy, about 2 inches long, ovate or ovate oblong, narrowing into a broadish petiole, the margins sharply toothed, and the upper surface dark green and shiny. It



Fig. 61.—*Primula elliptica* (after Royle).

grows between 6 inches and a foot high, with from four to ten flowers in a loose umbellate head surrounded at the base by narrow bracts. The flowers are purple or almost blue, with broad deeply cleft lobes, and having an extremely variable tube. It is found at elevations at 8000 to 12,000 feet above the sea in Western Tibet, Peer, Punjab, Cashmere, &c., flowering in June and July. In peaty soil in shady positions. Syn., *P. denticulata*, *Wight*; *P. spatulacea*, *Jacquin's MSS*.

P. EROSA, Wall.—Though quoted by Duby in De Candolle's "Prodromus" as a variety of *denticulata*, this has by modern botanists been thought quite deserving a specific distinction, and it is so given in the "Flora of British India." In aspect it is not unlike *P. denticulata*, and may readily be taken for a small form of that plant. It requires similar treatment, a partly shady spot on the rockery in peaty soil suiting its requirements well. The flower stems grow from 4 to 8 inches in height, supporting an umbellate head of lavender or purple flowers covered with fine meal dust. The leaves are fully developed with the flowers, oblong spatulate or oblanceolate, coarsely or unevenly toothed, the edges appearing as if partly eaten away. They are generally a few inches long, but sometimes attaining the enormous length of 18 inches and entirely free from meal. It flowers in early spring. Native of the districts from Kumaon to Bhotania in the Himalayas, at elevations of 4500 to 9500 feet above sea level. Syn., *P. denticulata* var. *erosa*, *Duby*.

P. FACCHINII, Schott.—The author named considers this to be a cross between *P. minima* × *P. spectabilis*, and by Stein to be *subminima* × *spectabilis*. The latter I am inclined to favour, as the form in cultivation in this country has decidedly more of *minima* in it than of *spectabilis*. Schott in Reichenbach's "Flora" gives it a distinct place, while Nyman ("Conspectus Europæa") reduces

it to a variety of *Floerkeana*, *Schrad.*, which is no doubt its right place. It seems a variable plant; in some of the forms the leaves deeply and sharply crenated, while in others the crenations are hardly distinct, showing how little reliance can be placed on mere leaf characters when the plant has a wide distribution. It grows 2 or 3 inches high, the sturdy scapes supporting two or three fine rosy purple flowers, about an inch in diameter. The leaves are spatulate, gracefully curved, deeply crenated, and forming a compact little rosette. It grows best in a loose well-drained soil, lime predominating, and wedged between pieces of limestone. It likes plenty of sun and light. Native of the Tyrol and granitic Alps on east and west exposures, flowering in May and June.—D.

(To be continued.)

ESTIMATES OF VEGETABLES.

KIDNEY AND RUNNER BEANS.

THESE are of two kinds—viz., the Dwarf or French, and Runners. I was told the former did not pay, being next to unsaleable, and that the latter would only bring in a plentiful season 1s. 6d. per bushel. This I thought a poor affair if true, especially as they were quoted at 3d. to 4d. retail in the list of Covent Garden Market prices as given in the gardening papers, and as I sell wholesale, or rather the Covent Garden salesmen do for me, I entered on their cultivation with great misgivings as to the result. However, I resolved to put matters to the test, finding a season's experience of more value than a lifetime of hearsay information. My first consignment of French Beans realised 1s. per lb. on July 11th; on the 18th the price fell to 6d., 4d. on the 21st, and on August 1st the value per half-sieve of 16 lbs. had fallen to 1s. Scarlet Runners brought 1s. 1d. per half-sieve of 16 lbs. on August 1st, and on August 4th French Beans brought 2s. per bushel of 32 lbs.; and on August 8th Scarlet Runners sold for 1s. 6d. per bushel. Between this and autumn the prices fluctuated from 3s. to 4s. per bushel; the last sold October 17th, bringing 2s. 6d. per half-sieve of 16 lbs.

Then I was told that Runners yielded best when treated as dwarfs—i.e., stopped and not staked, which might have been another stumbling-block, only I did not care to see it, as I had determined to have half an acre, and meant to stake half and stop the others, leaving them all the same distance apart, or 5 feet, with a row of French Beans between the rows of the Runners intended to be stopped. The results were that the Runners pinched afforded pods fit to gather ten days earlier than those staked, and everything looked in their favour, but the staked Runners gave twice as many pods row for row as the stopped ones, and the quality was much superior. This was only what might have been expected, as the stopping concentrated the strength of the plants on the first fruits, and they in consequence swelled and came to maturity—i.e., use, ten days in advance of those running up stakes, which were making unchecked growth, and with a better hold of the soil they were enabled to give a better crop, though somewhat later; but the advantage of earliness in the stopped is counterbalanced by their being sooner affected by drought, and in the liability to be cut off by the early autumn frosts whilst the staked ones escape, consequently affording a much later supply. Our stopped Runners were cut by the frosts that occurred at the end of September, whilst the staked rows were not injured and gave Beans fully a fortnight later.

For early use I find Osborn's Forcing excellent, but I do not care to grow many of it as its pod is small in comparison with those that come in a little later, and it is fine appearance with good quality that bring the best returns from the salesman. Of Dwarf or French Beans I award the palm to Ne Plus Ultra, of dwarf habit, a great cropper, with fine straight pods, and good colour. Equally good, but a stronger grower is Negro Mammoth Long-podded, a great advance upon the old Negro, having pods twice as long and giving quite as many of them. It is a really good variety, and has not the purple tint on its pods to the same extent as the old sort. Canadian Wonder also deserves praise in common with the other two, and comes in a little later, being stronger in growth than Negro Mammoth, is a very fine-podded variety and heavy cropper. Those three I consider the best of the Dwarf Beans.

Of Runners I find Scarlet Champion a long way ahead of the old Scarlet, especially when the plants are given stakes, as its pods are truly grand, we having had them 7 inches long, not a few picked pods here and there on the rows, but by the bushel. I have no fault, however, to find with the old Scarlet, as it crops well and gives useful pods, which fill with beans more quickly than Champion, which is a matter of consequence, especially in a dry season like the past one, and nothing taking so much from the energies of the plants as seed-formation we are pointed to a more speedy exhaustion. What of the Giants? I have only grown Giant White, an excellent cropping sort, with long fleshy pods, but I consider it tender, and if grown should have stakes. Girtford Giant I have not grown, but if it only gives pods 7 inches long in what is it superior to Champion?—UTILITARIAN.

STEPHANOTIS AND GARDENIAS.

I FAIL to see how Mr. Muir arrives at the conclusion that I regard these as the only pretty and good flowers, inasmuch as I mention at page 324 some twelve other choice genera, exclusive of the two above-named, of our best plants for cutting. It would not assist if Mr. Muir had known hundreds instead of scores of growers with bitter complaints as to the increase of mealy bug in mixed collections after the introduction

of Gardenias, for I feel sure that many hundreds of gardeners, and nursery-men too, are compelled to grow both in a collection of other plants, the places, either trade or private, where special houses are devoted to them, being in the minority. Those healthy Gardenias at Chilwell are associated among a great variety of stove plants, which include, if memory serves me right, choice Palms in variety, *Eucharis Sanderiana*, *Jasminum gracilimum*, various stove bulbous plants, *Allamandas*, *Orchids* in variety, and many more. Mr. Pearson points to the fact, as also do several correspondents, myself included, that these plants may be grown minus that dreaded pest, and cases innumerable have been brought to light where once they abounded, but now unknown. Moreover, Mr. Pearson says his Gardenias "have not been washed for years." I saw these plants a little over twelve months ago, and most creditable they were, and if Mr. Muir would only persevere, he, too, like Mr. Pearson, would be free of these plant parasites. "Bitter complaints" will never get mealy bug out of plant stoves, but give them a dose or two of petroleum, examine them once a week, and await the result. In the list of substitutes Mr. Muir names *Bouvardias*, which will harbour bug as badly as most plants, but it must be kept under. Mr. Muir protests against wire for *Stephanotis*, but can he utilise the long delicate tubes of *Bouvardia Humboldtii* corymbifera without these or similar aids? if so, I shall be grateful if he will inform me. I have grown *Bouvardias* by thousands, and have cut and wired the produce of hundreds of plants. Either for wedding or ordinary bouquets, wreath or buttonhole work, artificial stems of some kind must be used with many *Bouvardias*, and other plants too, unless you are prepared to sacrifice a quantity of lateral blossoms.—E. JENKINS.

OUTDOOR PEACHES FROM JULY TO NOVEMBER.

To many readers the above heading will doubtless appear strange, but our experience of the past three years quite justifies the phrase, and as the planting season is now at hand a few remarks on the subject may possibly be of interest to those of your readers who have not yet dispatched their orders for trees. It may be as well to state that this note is applicable to the southern counties only, and, further, we do not wish to imply that a continuous supply of fruit can be had except where a large collection of varieties and a good number of trees are grown, these being on the three different aspects of south, east, and west. Even under these conditions there may occasionally be a break of a few days. In our own case, however, we have this season only experienced two—viz., the second week in August, and the third week in October.

Taking the varieties in the order of ripening, we have first Alexander, a really high-class early variety, and of which we gathered our first ripe fruit this year on July 20th; for flavour, colour, and size it is superior to any other early sort with which I am acquainted, and in my opinion is destined to become very popular when better known. It is said to have been raised and sent to this country by our American cousins; it would be interesting to learn its parentage.

Early Beatrice is a few days later than the preceding, still it is a very useful Peach and well worth growing; its chief defect is its being small, and when fully ripe very thin-skinned and easily bruised—not very great faults certainly.

Early Louise is very similar to the last named, but by many considered to be the better of the two; fruit medium size, highly coloured, and of good flavour.

Early Rivers, fair-sized fruit, pale straw colour, but in my opinion not worth growing owing to its cracking or splitting propensity.

Early York, until recent years first favourite amongst early Peaches, ripens in August, and too well known to need any lengthened comment. Suffice it to say that no collection is complete without it. This brings us to the end of our list of the early-fruiting varieties, and I would certainly advise the planting of at least one tree of each on an east or west wall to prolong their duration of fruiting.

Royal George still holds its own, and is a very reliable free-fruiting mid-season Peach largely grown in most districts; with us, however, it is perhaps more susceptible to mildew than any other variety.

George IV. is nearly lost to cultivation, but it is difficult to say why, as it possesses real merit, being strong-constituted, a free bearer, of good flavour and colour, and large size. The oldest Peach tree in our collection is of this variety, and our wall man John, who has been here many years, says that he has never known it fail to give a good crop.

Dr. Hogg, a large handsome Peach, is well worth growing if only for appearance, ripens towards the end of August or beginning of September, and of very fair flavour.

Nohlesse is an excellent high-class variety that should find a place in all collections; it has also the additional merit of being very hardy and a good grower, but does not at all times set freely.

Barrington may invariably be depended upon to give a good crop; fruit large and quality first-rate; all points considered it may be regarded as one of the best of our mid-season Peaches.

Sea Eagle.—Within the past few years this variety has been brought prominently before fruit-growers through the horticultural press, and in my opinion deservedly so; indeed, if I were compelled to grow one late variety only it would be Sea Eagle. The fruit grows to a good size, averaging about 10 ozs. when not overcropped, highly coloured on the sunny side, of excellent flavour, strong constitution, and free bearer; a character honestly given, and which ought to satisfy the most fastidious of specialists. Duration of ripe fruit this season from September 18th to October 12th.

Walburton Admirable is in all respects a high-class Peach, being of large size, highly coloured, and good flavour. In some localities it is

rather a shy bearer: with us, however, it is very free, and regarded as second only to Sea Eagle.

Late Admirable.—A very useful variety, of good size and fair flavour, but scarcely worth growing beside those previously named. The same remark is applicable to Prince and Princess of Wales and Lord Palmerston; still they are excellent for kitchen purposes.

Salway.—This is the latest Peach of all, coming into use at the end of October and beginning of November. The fruit when well grown has certainly a grand and imposing appearance, and if ripened under favourable conditions the flavour is excellent; it cannot, however, at all times be depended upon.—H. J. H.

ANNUAL MEETING OF THE YORKSHIRE ASSOCIATION OF HORTICULTURISTS.

ADDRESS BY THE REV F. D. HORNER.

[At the last annual meeting of the above Association, held at the rooms of the Paxton Society, Wakefield, the Rev. F. D. Horner delivered an interesting address upon the general objects of the Association, and this was supplemented by a lecture on the Auricula. We have been favoured with the MSS. of both these, and as they are of far more than local interest we present them to our readers.]

(Continued from page 382.)

If I may without tediousness pass on now to speak of the Auricula from a florist's point of view, I cannot better lay the subject before you in the abstract than by reproducing the words of a brother florist, Rev. F. Tymons, who says, "The points of a good flower are not arbitrary, as the uninitiated sometimes say, but really appeal to rules of beauty recognised and allowed by all who have made a study of the flower. Thus, as in other matters of beauty and taste, the verdict of those most skilled in the subject is that which is entitled to weight. Rigid attendance to these points is of proportionate importance in any flower which is largely the creation of skill stretching forward to some ideal standard."

"Capability of modification under culture so as to draw nearer and nearer to that standard, is one of the prime distinctions of florists' flowers. Among these, none probably are more our creation than the Auricula. Hence the importance of a thorough knowledge of what a flower ought to be." Nature suggests, and leaves us to work out with her those suggestions. Hence when we find the Picotee gifted with the property of a beautiful wire edge of some soft tint upon its white petal, we at once see that that wire edge must be more perfect upon a smooth-edged petal than a jagged or fimbriated one. So of the Pink in the smooth petal that most sets off its lacing. Where the Auricula displays rings of colour on its flower disc in many velvet and enamelled textures, we see at once the full circular shape is better than the wingy windmill style of petal that cuts the zones in gaps and lets daylight spaces into the beautiful design.

In fact, whatever a man may be as an uninitiated and outside objector, he becomes what florists are if it is vouchsafed to him afterwards to become a florist.

Florist Auriculas are divided first into two broadly distinguished groups—the edged flowers and the Alpines. The main lines of separation here are the unmealed centres and shaded petals of the Alpine classes. In the edged Auricula the centres are all densely mealed, and each colour is of one uniform unshaded kind. The highest type in the Alpine (this term is technical here, and not to be confounded with the botanical use of the word alpine) is the golden centre and heavily shaded petal; the paler the centre and the less the shading the weaker is the flower in its properties. This section is the hardest and most prolific of all Auriculas, and those that are generally grown in garden borders are Alpines of more or less watery blood and inferior strain.

The other group is the Auricula Royal, containing all the edged classes which constitute the highest and most wonderful development of the flower. In these all the play of the flower in variety of colouring lies in the two outer rings or zones known as the edge and body colour; the two inner, the circle of the mealy paste, and the tube are constant in all. The paste ought always to be a dense smooth circle of white meal, and the tube a golden centre, prettily fringed with the gold-dusted anthers at its mouth. The stigma in Auriculas of each group and in every class must be below the anthers and almost sessile on the ovary, or it is the pin eye, which is a disqualification, as giving the tube and the whole flower a hard stony vacant look, for the mossy anthers in this case are always sunk to the bottom of the tube. The green edges are accounted the highest rank of all. They are the most difficult to obtain at all, and are rarely, even yet, obtained good. They have the richest play of contrast in their colours. An edge of pure emerald green outside a zone of black velvet, and that again succeeded by a circle of snowy meal with enamelled throat or tube of gold, is a flower of wondrous and rare type of beauty truly.

The green edges are the only class in which a mealy habit of foliage never occurs. The contrast of their zones of emerald black and white in a setting of silver leaves would be very beautiful, but Nature denies this combination, though often granting the converse in white edges with green foliage. The deposit of what we call meal upon the flower and its leaves is curious, and we may often have wondered what its nature is. The latest light I know of on that point is the interesting result of some carefully conducted chemical experiments that have been made by a brother florist, Mr. Worsley of Clifton. He has found this meal to be a vegetable oily or waxy substance, and is working this matter out further. There certainly appears on the thick green foliage of some varieties an oily deposit, and it is pungent to the lips, as you will find if you blow the water out that may have got into the heart of the plant, while a thin film of oily matter is sometimes seen on a wet leaf not exposed to washing by rain. It may be an abundant secretion of this matter that coagulates upon leaves of some varieties and gives them the snowy habit which we called mealed. The matter, however, is interesting, and I thought I would name it. The next class to green edges are the greys, in which a sprinkling of meal, like hoar frost upon grass, lies delicately over a green foundation without hiding it further than to give a pearly semi-transparent effect, as of a silver dew crystallised upon it.

The class following are the white edges. It is very hard to say which is best where all are beautiful; but the white edges are the fairest to see. The white edge is the Auricula in her bridal dress. The whole face of the flower, except the one feature of the velvety body colour, is veiled in a fall of softest snowiest meal. Good true whites and good true green edges have been very few so far.

Then follows that beautiful consort of the edged classes, the self. Really it is itself an edge, and used to be called self-edged, the space allotted to two zones of colour in other classes being here occupied by one in a double breadth, the colour being one rich tint from the edge of the paste to the rim of the petal. The self, with its mealed paste and colour of one decided hue, is a very different flower from the Alpine with its unmealed centre and heavily shaded colour, and not the least approach of the one to the distinct properties of the other can be tolerated. If an Auricula has one unshaded colour it should have white paste and be a self. If it has a well-shaded colour it should possess the golden unmealed centre and be an Alpine. Those are the differences that form the class distinctions in the florist Auricula, and in all the colours should remain true and fast, not fading into sere or weaker shades. A good flower dies well. One word—as I have said in other remarks on our flower—one word may suffice to express the share which the flowers of all the classes should apportion to their zones, and that single word is balance. The flower should be well balanced.

In form, circular and flat; in substance, stout and lasting; in size, moderate, certainly not big, but moderate. In the currency of the Auricula we want no crown pieces and get no threepenny bits; a pip the size of a shilling is small enough, and one like a florin is quite large enough. As a rule a flower suffers more by over size than under. It is soon coarse and rough in the grain. The Auricula is a jewel. It is one of the oldest of our exhibition florist flowers, for there were exhibitions of Auriculas in Lancashire more than 150 years ago. It was an English resident as far back as 1570, brought into the east and north-west of England by those Flemish weavers who brought to this country the craft of handloom weaving of woollens and with them these favourite home flowers. In 1725 we have proof that the culture of the Auricula was established in Lancashire. For a period of some fifty years then no record of it exists, but in 1830 the flower was grown abundantly in Lancashire districts; but independently of that, fifty years back from now almost every district in Yorkshire, Staffordshire, and Cheshire had its circle of Auricula growers. So too in Scotland and in the south of England. There were shows and societies in the home counties, and many growers in places which are now simply brick-and-mortar London.

(To be continued.)

FORCING SEAKALE.

As the time has now arrived when choice vegetables are comparatively scarce in the outside garden, and gardeners not having proper accommodation for forcing will be studying how they can best supply the requirements of the cook in the shape of delicate vegetables to fill the vacancies that have occurred through the loss of the crops of Peas, Beans, &c. Where a Mushroom house is in existence little difficulty will be experienced in obtaining a supply of Seakale from November onwards. To secure this no time should be lost in taking up a number of roots (according to the accommodation and requirements of the family) and place them

as thickly as possible in pots, and fill in with soil from underneath the potting bench or other material that might be at hand, then giving a good soaking of water, allowing them to remain outside for a few days. In the meantime have a slight hotbed made in Mushroom house, and as soon as a gentle warmth is perceptible plunge the pots in it; at the same time place pots of the same size over these, covering the whole with leaves and litter. Great care must be taken, and the trial sticks frequently tested, to see that there is not too much heat, as hard forcing thus early in the season would possibly spoil the crop. We have kept up a supply in this way until February. At this time we placed pots over crowns on permanent beds outside, which we covered with leaves and litter in the usual way, and in the course of a fortnight a second batch was treated in a similar manner. There was little trouble attached to the third batch, as the material from the first was ready to be removed, and with the addition of a little litter did service for forcing the third batch, then the pots were taken from the first and the crowns covered with litter, and placed over the last batch, and sufficient leaves put on to keep them in darkness, which was all that was necessary to keep up the supply as long as it was possible to do so.

My plan is to grow sufficient plants each year for forcing in pots to the above-mentioned time, as I think there is a great saving of labour in carting material, &c., that would be required if the whole was forced in established beds. When the crowns are taken up in autumn we carefully preserve the roots of these, covering them with soil, and as soon as convenient those about the size of one's figure are cut into lengths of about 6 inches, the top part is cut level, and the lower end in a slanting direction. In doing this it is more readily understood by the planter, as where this has not been attended to I have frequently noticed the bottom end placed uppermost. After the sets are prepared they should be covered with soil, and there remain until March, when they should be planted in good soil at about 1 foot apart in the rows, and 2 feet from row to row. These sets will send out several shoots, which must be reduced to one, which will form a good crown the following autumn. Established beds should undergo the same process as to disbudding, &c., but the beds should receive a liberal dressing of manure, which should be slightly forked into the beds. By adopting this method I have found no difficulty in keeping a full supply of this vegetable from the middle of November, and as long as it was possible to have it the following year.—ROBT. D. LONG.

AMONGST THE CHRYSANTHEMUMS.

THE Chrysanthemum season has commenced. The first three shows have been held, and intending exhibitors are busily preparing to test in competition their skill as growers of the varied and beautiful flowers now so widely popular. Those have entered for the more important classes at large shows are anxiously watching the blooms, and perhaps in some cases selecting those that are likely to be required, allowing a sufficient number over to provide for accidents. This selection is an important task, and good chances of success have been lost by deferring it until the last moment, when a hurried search for blooms necessary to complete a stand of twenty-four varieties often results in two or three small or imperfect specimens being included, which destroy the uniformity of the collection, and it has to take a second or third-rate position. Even where several hundreds of plants are grown the difficulty is frequently great to procure sufficient first-rate blooms for the large classes, and where the grower is intending to compete at several shows on different dates still more care is required in the selection. At present it seems that the incurved varieties are rather late, and at the earlier shows the Japanese will probably prove the stronger (this certainly is the case in several collections), and attempts at forcing may prove disastrous. Experienced growers are well aware of this, but beginners require caution, for we have seen some promising blooms spoiled by too great a hurry to have them out. The more gradually and naturally the blooms develop in a cool but not a damp stagnant atmosphere the more satisfactory they will prove when placed upon the exhibition boards. There is another point that is also occasionally lost sight of—namely, that good, solid, clean, well-finished blooms of medium size will rank higher than larger, rough, coarse samples. Substance is an important quality in a Chrysanthemum bloom, but is not synonymous with size as some seem to suppose.

Competition is expected to be brisk in the principal shows, but the chief interest in the metropolitan district will no doubt centre in the Kingston and Aquarium Exhibitions. At the former the challenge vase will bring renowned growers together, and it is said that this year a new competitor will contest the honours with them. There is a very general desire that the competition may be extended to another year, though the winner will unquestionably deserve the honour he gains, for the contest will be a close one. At the Aquarium the large money prizes will induce some good growers to enter, while at Richmond and the Crystal Palace the prizes are also sufficiently substantial to insure satisfactory exhibitions.

The following jottings will indicate the general condition of the Chrysanthemums around London, the collections named being some of the principal and most representative. There are many new varieties, of which some are mentioned in the following notes, but others will be reserved to another occasion, when a better judgment can be formed respecting their merit.

FINSBURY PARK.

An excellent show of 1500 plants has been again provided at the pretty North London park under Mr. Cochrane's superintendence, and is attracting large numbers of visitors, especially on Sundays, when several thousands pass through the house devoted to the Exhibition. The idea of

commencing a display of this kind was an excellent one, and it has been so well carried into execution that the Finsbury Park collection now ranks as the best of similar public shows. This is partly due to the judicious liberality of the Metropolitan Board of Works, and to the fact that Mr. Cochrane, with the aid of his experienced practical foreman, Mr. Mardlin, has produced plants and blooms in first-rate condition, thus giving something more than mere popular interest to the display. This season the plants are arranged in two banks sloping upwards from the central path, and as much care has been exercised in arranging the various colours, the general effect, viewed from either end, is very beautiful. At present the Japanese predominate, as the incurved are not yet all out; but there are fine blooms of some of the varieties, such as St. Patrick, which is rarely seen so good, Lord Darby, Mr. Bunn, Prince of Wales, Lord Alcester, Alfred Salter, Emily Dale, and Mrs. G. Rundle. Of the better known Japanese some of the best are Lady Selborne, which keeps very true; James Salter; Elaine, wonderfully good; Margot, large and of fine substance; M. Henri Jacotot, which is in grand form, as it is indeed in most collections this year; Comte de Germiny, Chang, Etoile Toulousienne, M. Astorg, and Tendresse. There is a suitable proportion of reflexed varieties, the bright yellow Chevalier Domage being especially fine, as also is King of the Crimson, several blooms of which are 6 inches in diameter, of good substance and rich colour. Ten in front of each bank is a row of dwarf Pompons, chiefly of the Rosinante and Sœur Melanie forms, the latter being loaded with its pure white flowers.

Recent and new Japanese are well represented by some of the best forms, showing their characters well. Frizou is a striking flower of good substance, with bright yellow fluted and slightly recurved florets. Souvenir du Caire, rich maroon with a yellowish reverse, is good. Beauté des Jardins, of a distinct purplish crimson tint, very free, is likely to prove a useful variety. The blush Brise du Matin, and the rosy crimson Madame de Sevin, are both substantial blooms that have attained a good size. Joseph Mahood is a floriferous yellow or bronze variety. The rose and white Mons. Tarin, the red and bronze thread-like Madame Eugénie Pourquie, and purplish and silver Souvenir de la Reine Marie, are all notable varieties. The plants are in excellent condition, well clothed with healthy foliage, and there will be a good display of blooms for at least three weeks.

A CHRYSANTHEMUM NURSERY.

Mr. N. Davis, Lilford Road, Camberwell, has provided his usual exhibition in his nursery, and the large show house which he had specially erected for Chrysanthemums is now gay with an extensive collection of new and old varieties. The house is a span-roof structure 65 feet long by 32 feet wide, and contains 1900 plants arranged in ten groups, the greater part in the centre. The varieties are mostly associated in accordance with their colours; thus the orange, yellow, bronze, and reds occupy the centre, the end groups comprising the white, crimson, and pink varieties. This is a pleasing variation of the usual method of arrangement, and produces an excellent effect. The plants are thoroughly well grown, are clothed with healthy foliage, and bear numerous, handsome, substantial blooms, a large proportion of which are fully up to exhibition standard. The collection is a remarkable one, for not only are all the good recent and old varieties included, but the continental varieties for the present year have been obtained, and are being fairly tried for comparison with those of proved merit. Those trials and comparisons are of much importance, and for his own credit Mr. Davis is particularly careful not to recommend any but what he proves satisfactory and distinct. Bestowing new names upon older varieties is becoming too common a practice, and those who grow the new French varieties cannot be too careful in ascertaining whether they are really distinct before placing them in commerce. We have an instance of the care needed in the case of La Purété certificated last year at the Crystal Palace, which has now proved to be Mlle. Lacroix. We cannot now refer at length to all the new varieties at the Lilford Nurseries, but a few of the most prominent may be mentioned. Amongst the Japanese Val d'Andorre is a thoroughly good variety, the blooms of great substance streaked with bright red on a yellowish ground. Lakmé, bronze-yellow fluted florets, pretty, distinct, and of medium size. Jupiter, likely to prove a handsome variety of the Henri Jacotot build, but of a very bright lively red hue. Mlle. Crouzette, not one of this year's novelties, but better than we have hitherto seen it, the florets quilled half their length, then expanding broad and flat, of a clear pale pink, becoming nearly white. L'Aube Nationale is a pleasing variety in the way of Triomphe de la Rue des Chatelets, with fluted florets, silver and red. L'Adorable is in the style of Val d'Andorre, the florets fluted, rich yellow with a narrow reddish margin. Dr. Barrie, is a curious variety with large blooms, some of the florets quilled and golden, others flat and bright crimson. This is very remarkable, and is already a favourite with many who have seen it. Mons. N. Davis, of the J. Delaux type, neat, compact, bright maroon, and with a good centre, is a promising variety; and M. Harman Payne, described as a sport from Marguerite Marrouch, appears promising from late buds, the early ones being rather poor in colour.

Older varieties, including the last two or three years' novelties, are very numerous; still, amongst the Japanese Madame de Sevin is in capital condition, the smaller bright yellow L'Or du Rhin being a useful decorative variety, with which may also be associated the taller-growing but free bronzy yellow Joseph Mahood. Beauté des Jardins is a useful decorative variety, the colour a fine bright rosy crimson or purple, the blooms of medium size, but freely produced. Agrements de la Nature and Alexandre Dufour are good for the same purpose. Notable also are Mons. Tarin, M. Juan Cruz d'Equileor, Frizou, L. Negre, Garnet, J. Delaux, Triomphe du Nord, Madame Audiguier, Mrs. Townsend, Flambeau, Source Japonaise. It

might be added that Mary Salter, as grown by Mr. Davis, is much like Fair Maid of Guernsey.

The incurved are later and are not yet at their best, though there are good blooms of Prince of Wales, Mr. Bunn, Empress of India, Lord Wolseley, Lady Hardinge, and Lord Alcester. The early flowerers, Madame Desgranges and its golden sport G. Wermig, are still beautiful, the latter having been in flower for over three months.

MORDEN HALL, MERTON.

For several years Mr. Gibson, the gardener at Morden Park, has grown Chrysanthemums with remarkable success, and this season he does not appear likely to lose the credit he has gained. He has 400 plants, each bearing three or four blooms of exhibition size and substance, forming one of the most even and meritorious collections that we have seen. The blooms are much earlier than the majority around London, and this may prove a source of weakness in some of the severe contests they will have to endure, but at present there is little to fear on that score. Both Japanese and incurved are of excellent substance, large but clean, and free from all objectionable coarseness. All the best new and old varieties are grown. Here again we saw Madame de Sevin in good condition, and Mr. Gibson recommends it strongly as a useful variety that ought to be included in every collection where Chrysanthemums are grown for exhibition. Mr. J. Laing is also good, of a bright reddish hue from late buds, and is in that state much superior to the early blossoms. The beautiful Japanese Anemone Sœur Dorothee Souille continues gaining favour deservedly, and at Morden Park is very fine; its companion, Fabian de Mediana is, however, much later this season, and up to the present we have not seen a good representative bloom of it. Reflexed varieties are well grown, the bright yellow Chevalier Damage being uncommonly good, while the Violet-scented Progne, the deep-coloured King of the Crimson, and the Christines are all notable in this section. The other varieties in the respective groups cannot be enumerated, for so many are good. The plants are arranged in vineries and constitute a handsome exhibition, which is open to all visitors.

COMBE LEIGH, KINGSTON.

About 250 plants are grown by Mr. C. Orchard, not for yielding exhibition blooms but for decorative purposes, and his success in this respect and in grouping is well known. The charming and useful dwarf plants are as usual excellent this season, and bearing fine flowers, a good proportion of which are quite fit for the exhibition board. One variety with which Mr. Orchard is particularly pleased is the Japanese M. Henri Jacotot, which in all stages, either as dwarf, medium, or tall plants, is free and of first-rate quality. Some dwarf specimens, 2 or 3 feet high, have six grand blooms each, of great substance, and intensely rich crimson maroon with golden tips. La Purété and Mlle. Lacroix are here again proved to be identical, and the former name must be discarded; the variety is, however, an excellent one, and some standards have twelve to sixteen of its pure white blooms, extremely useful for arranging in groups. Cullingfordi is in splendid condition, the blooms 5 inches in diameter, very solid, and unrivalled in the intensity of its rich crimson colour. Val d'Andorre is again noteworthy, as also are M. Astorg, Beauté des Jardins, Yellow Dragon, Joseph Mahood, Gloria Solis. Agréments de la Nature, Mrs. Mahood, M. Tarin, and Elaine. A pretty old variety, but seldom seen, is Bras Rouge, not large enough for cutting for exhibition, but fine as plants for groups, the colour something like J. Delaux, but brighter and with a golden reverse. As elsewhere the incurved are not fully out; there are some fine blooms promising, and when Mr. Orchard has the plants arranged in the pretty conservatory at Combe Leigh they will undoubtedly form a group that could scarcely be surpassed.

SWANLEY.

As is well known Chrysanthemums form a special department of the "Home of Flowers," and are in charge of an expert who devotes his whole thought and time to their propagation and culture. Every section is represented, all established varieties grown, and new ones added from American, French, Chinese, Japanese, and English raisers. The collection embraces about 900 named varieties, represented in about 5000 plants. There are arranged in five new span-roofed structures, a walk passing down the centre, and the soil excavated on each side, so that the pots are 2 feet or so below the floor level, and the blooms are consequently brought literally "under the eyes" of spectators. They are from ten days to a fortnight later this year than usual, in consequence of the prevalence of north and easterly winds. Only a few of the earlier varieties are flowering, but in the course of ten days and onwards till Christmas there cannot fail to be an imposing display. Amongst the few in flower a grand bloom of Jeanne d'Arc, beautifully coloured, attracts notice, and well confirms what has been said as to the great value of the variety. A new variety named Ensign, received as a Japanese, has proved to be a true incurved, but whether totally distinct from some others of its colour, pinkish lilac, can only be proved by comparison. Since some of the best judges in England have been deceived in awarding a certificate to an isolated variety, the test of actual comparison of so-called new with existing forms becomes the greater for avoiding the mistakes in future. Mlle. Lacroix and La Purété, the last certificated last year, are identical at Swanley, if not everywhere else, and persons who possess the latter will do well to give it its right name, Mlle. Lacroix; it is a charming white Japanese variety well worth growing. L'Triomphante (Do Reyddet) is effective at Swanley; it is a large Japanese, with broad, flat, drooping pale peach-coloured florets something like Brise du Matin. Henri Jacotot is free and fine, crimson, tipped with gold, and will be extensively grown

for conservatory decoration and for the front rows of exhibition stands of Japanese blooms. Sœur Dorothee Souille is one of the Anemone Japanese that will find its way into all collections. The pretty old reflexed variety Phidias is restored, as it deserves, from its long obscurity, and King of Crimson, with Emperor of China, are very fine in the same section. Several dwarf floriferous forms of Japanese will be valuable for small greenhouses and conservatories generally, also for affording cut flowers. Firmament, crimson, tipped gold, is extremely free; so are Isidore Ferral, pale pink, and A. Dufour, rich magenta; but the darkest and richest of all is Black Douglas, purplish plum colour, but less floriferous than the others. The bright yellow early-flowering Pompon, Fiberta, is fading, but there are few more worthy of culture for late summer decoration.

The yellowish Pomponium (certificated) cannot be referred to approvingly, as the plant is the reverse of compact, however dissimilar the flowers may be from others. Something more than distinctness is needed now-a-days, and the feeling is growing that enthusiasts are somewhat too readily disposed to grant certificates for new varieties before their characters have been fully proved. Among the single varieties at Swanley, Miss Mary Anderson, silvery peach, is one of the best yet raised; and Rev. A. H. Glenney, rich chestnut, is in full beauty. Those are only a few noted amongst the "early bloomers," the great majority of the varieties only just showing the colour of the florets, but they will produce a fine effect by-and-by.

ROYAL NURSERIES, SLOUGH.

For years "Turner's Chrysanthemums" have long been famed for excellence of culture and the great number of plants represented in the annual displays. This year they are, if possible, finer than ever, and in a short time will produce a magnificent effect. Three or four large houses are filled with some 4000 plants, and there are probably 3000 more under a framework and protected with mats. These are varieties of the Rundle type, mainly grown to meet the great demand for early cut blooms. It would astonish those persons who think Chrysanthemums cannot be well grown except in 9 and 10-inch pots to see the vigour of the stems, clothed to the base with luxuriant foliage, on plants in 7-inch pots. As in other places, the blooms are late, and the majority will not be fully developed till the middle of this month. Flowering now and very fine are Lady Selborne, which is appreciated because of its character being so unlike that of Madame Desgrange, which it succeeds, and on that account is preferred to Elaine; Cassandra, a white rose-shaded incurved variety, very attractive; Empress of India and the golden form, also Lord Alcester, large and fine; Jeanne d'Arc, excellent; John Salter, Mr. Bunn, Sir Stafford Cary, Virgin Queen, and some other early incurved well represented. In addition to Lady Selborne the following Japanese forms are highly effective:—Album plenum, Margot, A. Dufour, Chinaman, F. A. Davis (J. Delaux), George Gordon (L'Africaine), La Purété (Mlle. Lacroix), Flamme de Punch, Henri Jacotot, Flambeau, Golden Fair Maid of Guernsey, Source d'Or, Mons. Planchenau, Madame C. Audiguier, and Hiver Fleuri. These are a mere fringe of the collection, but they indicate the character of the coming display, which will undoubtedly rank amongst the greatest and best in the country.

ST. JOHN'S NURSERY, PUTNEY.

Some thousands of Chrysanthemums are grown by Mr. G. Stevens, and this year he has surpassed all his previous efforts in the production of fine blooms. The Japanese are of good substance and bright in colour, but the incurved are some of the best we have seen, being earlier than the majority, of capital size, clean, and even. He also has a sufficient number of dwarf plants this year to render his groups more effective and better finished, as was seen in the case of that at Kensington recently, when he secured the first prize. They are well clothed with foliage, an important point in producing a good group, and which unfortunately is not always fully recognised by exhibitors. A useful decorative Japanese variety, which is grown this season in large numbers at Putney, is a seedling named Mrs. Stevens; the blooms are yellow and bronze, the florets flat, and is extremely free and effective, in a dwarf state, with dwarf Elaines and Madame Desgrange; it is excellent for grouping or cutting. Another seedling Japanese, named Maiden's Blush, has large handsome blooms somewhat in the way of Hiver Fleuri, but greatly superior, quite distinct in the foliage, and of a soft blush tint. It is of strong habit, and appears promising. The single variety, White Perfection, certificated last year, is grown extensively, and the abundant graceful blooms are now expanding. Elaine is largely grown for yielding its blooms early and is then discarded, the later crop referred to last year not proving satisfactory.

INNER TEMPLE.

The exhibition in these gardens, which is opened to the public by the liberality of the Benchers, is now attracting large numbers of visitors. The general opinion is that Mr. Newton has this year provided an even better display than usual, the blooms promising more substance and being brighter in colour. About 800 plants are arranged in the house near the Thames Embankment, and include representatives of all the leading varieties together with some of the newer forms. Both Japanese and incurved are rather earlier than in most gardens, but there are still many more to come, and intending visitors will find a good display for fully another fortnight. The best of the Japanese are James Salter, Lady Selborne, Margot, Beauté des Jardins, Madame de Sevin, Mlle. Lacroix, J. Delaux, Val d'Andorre, Comte Germiny, and Curiosity. The incurved include Jeanne d'Arc in handsome form, Lord Derby, Jardin des Plantes, and Mr. Bunn as the best of the general collection. A Japanese variety

is shown under the name of Porcupine, which seems to be the same as Gloire Rayonnante, but how it obtained the former title does not appear, though Mr. Newton is not responsible for it. The florets are quilled up to the apex, but it cannot be commended as an attractive variety though it is certainly curious.

SWANMORE PARK.

Many persons will be anxious to know how the Swanmore plants are looking, and it may be said that, considering the "roasting summer" on the south coast this year, they are looking very well. If wood-ripening is an important element in the production of fine blooms there ought to be some good ones in this collection, for plants exposed to the full sun at an altitude of 450 feet above the sea cannot be otherwise than matured. Some persons say the wood can be over-ripened, that being a view held by some Liverpool growers, and we can only wait and see what the well-ripened Swanmore plants will produce. When inspected a few weeks ago it was too soon to form any correct estimate of the ultimate character of the blooms. Only a few early flowers, and these mostly Japanese, were approaching development, the first of the incurved, such as Jeanne d'Arc, Lord Wolseley, and Prince Alfred not being half-grown. They would, however, be quite early enough for the shows, if not too early; but as some early blooms, and these usually the finest, are nearly always lost by all the best exhibitors they meet on even terms as regards that contingency. Mr. Molyneux was amused by the remark of a correspondent as to his seeing a "red light." He does not over-estimate his own chances of winning, nor lightly regard the skill of his competitors. He will, as usual, do his best, as they will, for the coming contest. His plants—there may possibly be five or six hundred of them—vary in height from 3 to 10 or 12 feet, and the foliage was stout and the buds fat. He was anxiously watching the opening of Mdle. Lacroix and La Purété and shaking his head over them; he has perhaps found by this time they are both alike. A Japanese sport from Bouquet Fait was developing; it is quite distinct from the parent, having creamy rose drooping florets and was promising well, as was Mons. Planchenau, an improved Bouquet Fait, but much darker than the sport. Ferdinand Ferral, sent out as an incurved, was developing into a rosy pink large-flowered Japanese. M. Tarin, a large deep lilac Japanese, was favourably regarded, as was Val d'Andorre, Henri Jacotot, chestnut tipped with gold, was beautiful, but too early for showing. Laing's Anemone Japanese, Margaret Villageoise, gave promise of being a good variety, and Madame Clos and Belle Pauline were coming out well, as also was the distinct and beautiful Sœur Dorothee Souille. Mons. Mousillac and L'Or du Rhin were very rich and very much alike; and Pietro Diaz, sent out as a chestnut incurved, was being watched with some interest. The Swanmore Chrysanthemums are arranged in large light houses, in which the blooms ought to "colour up" well.

THE HIGHGATE NURSERIES.

Messrs. W. Cutbush & Son have arranged a large number of Chrysanthemums in the corridor and conservatory of their Highgate Nursery, and in the course of a week there will be a good display. The plants are late, as they appear to be generally, especially in the north of London, and even in the south it is feared that some of the earlier shows will be too soon for several growers. A careful selection of all the best varieties has been made in the Highgate Nurseries, and when the blooms are fully out visitors will have a good opportunity of judging the respective merits of the numerous claimants to popular favour, and will also be able to form a correct idea of the principal types of variation distinguishing the Chrysanthemums now cultivated. Amongst the earlier blooms there are already some handsome examples of Margot and a few other varieties of sterling merit.

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY.

Each season brings its special attractions at Mr. B. S. Williams' nursery, and in November one of the leading features are Chrysanthemums, which are arranged in the handsome conservatory facing the main road. They are placed in groups around the large Palms, Ferns, and other fine-foliage plants, and are grown more with a view to show their usefulness as decorative plants than to produce a few large blooms of exhibition size. It is as free-flowering plants that Chrysanthemums are valued in the majority of gardens, and yielding as they do a plentiful supply of variously coloured blooms at a time when flowers are not too abundant, it is not surprising that they are so highly appreciated. Mr. B. S. Williams' plants show these qualities admirably, many of them being loaded with medium-sized blooms exactly fitted for cutting to arrange in vases or baskets. The most floriferous varieties distinguished by bright or pure colours have been chosen for the purpose, and they have been arranged with much taste. Such specimens as these Mr. Williams will employ largely with suitable foliage plants in the floral decorations of the Guildhall on the occasion of the banquet next week.

MESSRS. J. VEITCH & SONS, CHELSEA.

As with many other collections the plants in this one will not be at their best for at least a week. The earliest plants are placed in the corridor at the Brompton Road end of the nursery, several other houses being devoted to the general stock of old and new varieties. Of the latter about fifty are on trial, including a number of Mr. Salter's, several of which appear very promising, though it is yet too early to form an accurate judgment of their characters and qualities. Some of the earliest Japanese, and now in condition, are the following—Source d'Or, a free useful variety, with fluted yellow florets; Beauté des Jardins, rich colour; William Robinson, large, free; Bule d'Argent, crimson, silver reverse; J. Delaux, rich dark colour, and of good size; Henri Jacotot,

extra good; Criterion, of fine substance; Brise du Matin, full, handsome; L'Île des Plaisirs, rich orange bronze in tint; M. Mousillac, intensely deep crimson, fine bloom; Isidore Ferral, lilac rose, free and distinct; La Charmeuse, purplish crimson, fluted florets, notched at the points; Eclatante, bronze red; Madame de Sevin, excellent as we have noticed it elsewhere; M. Viviani Morel, short, broad, white florets, somewhat of the reflexed type; Etoile Fleuri, bronze and yellow, with curiously notched florets; Comet, bronze red, one of Mr. Salter's varieties, of medium size, and very free.

There are not many of the new varieties in perfection yet, but Mons. Freeman, which was certificated at the Aquarium recently, is better than we have seen elsewhere, must be termed an incurved Japanese of a lilac colour; Mdle. Melanie Fabre, of similar colour, is more like a reflexed bloom, but is rather pretty. Souvenir d'Haarlem has rose-coloured blooms with fluted florets, and is of good quality. M. Paul Fabre, very bright red, is likely to be a good variety, and several of Mr. Salter's varieties which have not been named are promising well. The incurved blooms are much later, as they are generally this season, but there will be some fine blooms if the substantial buds expand satisfactorily.

MR. W. BULL'S NURSERY, CHELSEA.

It has been the custom at this nursery for some years to obtain and test the new varieties annually distributed by the continental growers, and Mr. Bull confines his collection to the best of these, the general stock of old varieties not being made a speciality. Numbers of novelties have been procured this season, and though the majority are still expanding and will need several days to reach their full size, some show their characters fairly well. The Japanese are again the most prominent. Lakmé, which has been already certificated this season, is in capital form, and evidently deserves the honour it receives, as it is also free and likely to be useful for decorative purposes. M. Henri Jacotot is handsome, and the new Mons. Ghys, with rosy lilac blooms, is noteworthy. Other good varieties are MM. Thibaut and Keteleer, intensely rich crimson-maroon with a golden reverse; L'Aube Matinale, large, free, and handsome; Mr. J. H. Laing, large, with broad florets of a bluish tint, yellow in the centre. Golden Gloire Rayonnante is an American variety, said to be from the well-known quilled variety; but it does not resemble that in the slightest, though of a pleasing yellow tint. Several good Pompons are flowering, amongst them being Belle Navarraise, white fringe, free and compact; Neatness well deserves its name, the florets being very closely packed, in symmetrical ball-like heads of a pale rosy colour; Surprise, pink and white is a charming little floriferous variety, the plants having been in flower for three months; Petit Mignon is also a beautiful little variety, the purple and white blooms being particularly charming; Exposition de Chalons is pretty and distinct, the blooms freely produced, crimson and white. Many others are advancing, and we may have occasion to refer to them a little later in the season.

MESSRS. J. LAING & CO., FOREST HILL.

Several houses are devoted to the extensive collection of Chrysanthemums in the celebrated Tuberous Begonia nursery, and the best varieties are represented by well-grown plants, a large proportion of which are bearing handsome blooms of exhibition quality. No doubt some of these will be seen at the leading exhibitions during the season, Messrs. Laing's groups of plants being especially noted. There are many new varieties, several of this year's importations promising to be valuable additions to the already long list, and the approved of last year's novelties fully maintain their characters.

GROS MAROC GRAPE.

I BEG to inform "A. O. W." (page 389) that this is, according to my experience of it, a first-rate late Grape, and as such I believe it is destined to be extensively grown in the future. I have no experience of it on its own roots; but during the past summer I have planted a house with Madresfield Court, Alnwick Seedling, Muscat Hamburgh (at the warmest end of the house), and Gros Maroc, the latter both on its own roots (for comparison) and on the Black Hamburgh stock, as my experience of this grand-looking Grape is confined to bunches secured from this union. It is highly appreciated here, not only on account of the size and shape of bunch and berry and density of bloom, but also on account of its excellent flavour, the result, no doubt, of its union with the Black Hamburgh, as the flavour of Gros Maroc when grown on its own roots is, according to statements which have appeared in the Journal within the last twelve months, only third-rate. Messrs. Thomson & Sons have found room for Gros Maroc in their wonderful Grape-growing establishment at Clovenfords; and, judging by the samples which I saw there a short time ago and my own knowledge of the Grape, I expect ere long it will be grown extensively in the Tweed Vineyard, and to such a state of perfection as all Grapes there, not excepting the Duke, attain, as to place it beyond all doubt as one of the best and grandest-looking late Grapes in cultivation.

To those who have given the Gros Maroc a trial and condemn it on the score of indifferent flavour, I would say, Try it on either a Black Hamburgh or Muscat of Alexandria stock, and the improvement in flavour consequent upon such union will be such as to place it equal to, if not before, that of any other late black Grape grown.

While on this subject I may state for the benefit of those of your readers who may not have had any experience of the "influence of stock upon scion," that wherever it is deemed necessary to extend the culture of any particular Grape by the process of grafting or inarching, the character of the variety on to which it is intended to place the scion and the probable consequences that such a union would lead to should be duly

considered before performing the operation—that is, let there be no hazard choosing of stock, but let the object in view be distinctly seen before pursuing it. There is no better stock for grafting or inarching (I prefer the latter mode of propagation) any variety of Grape on than the Black Hamburgh. I go further than this by expressing my firm belief that every variety of Grape in cultivation may be more or less improved by being grown on the Hamburgh stock. Next to this comes the Muscat of Alexandria. On the other hand, put either of these varieties (Hamburgh and Muscat) on a Gros Colman, Trebbiano, or Alicante stock, and the result of such a union will be a deterioration of flavour. There can be no doubt, I think, about Gros Maroc, Madresfield Court, and Alnwick Seedling doing satisfactorily together in the same house. As reference has been made to the Golden Queen Grape, I may be allowed to say that when grown and staged at the Edinburgh Show by Mr. Murray of Culzean Castle, Maybole, and Mr. Hammond, Brayton, it is a grand Grape. Mr. Murray's example of it being especially fine in size and form of bunch and berry and perfect finish. The same may be said of his specimen bunches of Alnwick Seedling and Muscat of Alexandria which were staged at the same excellent fruit show.—H. W. WARD.

PTERIS TREMULA.

THIS is one of the most useful and accommodating Ferns with which I am acquainted. It will stand in a room for months where no gas is used without any apparent harm, and does not easily lose its lower fronds provided it is regularly supplied with water. Like many of the Pterises it reproduces itself very freely from spores when standing over soil or near other plants in pots. These sporelings, when large enough to handle, should be placed into small 60-size pots, and as growth advances be transferred into 5-inch pots, which are large enough for ordinary purposes. It is surprising what a length of time it will last fresh without any repotting or adding fresh soil as top-dressings, and it would appear to be quite content with clear water only. It is not particular as to soil, but a mixture of loam, leaf mould, and sand would seem to suit its requirements exactly.—W. B. H.



It is with unfeigned regret that we have to announce the death of DR. HENRY GREAVES BULL of Hereford, after only a few days' illness, at the age of sixty-seven. Dr. Bull practised for many years as a physician in Hereford, and was a magistrate for the city and also the county, and there was no work of usefulness which was not aided by his untiring help. The Woolhope Club, which he did so much to make famous, will miss his masterful management, and the city of Hereford will lose one of its most devoted residents. Dr. Bull was a native of Northamptonshire, and resided in Hereford for many years till his death on the 31st ult. "THE HEREFORDSHIRE POMONA," the publication of which engaged so much of his attention for the last few years of his life, and which has been produced under his fostering care, was fortunately completed only a few weeks ago, and will ever remain a monument of his untiring energy and cultivated taste.

— ONE of the principal objects of the APOTHECARIES' BOTANIC GARDEN, CHELSEA, which has been established for 200 years, is the teaching of botany to medical students, and latterly also to young women and to ladies in training for governesses in public schools. During the present year the number of visitors, mostly students, has been 2784, of whom some 1200 were males and the remainder females. The Society gives a gold and also a silver medal in both classes of students to those who pass the most creditable examinations.

— THE FIRST ESTABLISHED HORTICULTURAL SOCIETY IN SCOTLAND.—At the recent Horticultural Show at Falkirk the Secretary, Mr. Haining, intimated that it was a hundred years since the first show of the kind was held in Falkirk, and was probably the first held in Scotland. Mr. Wm. Sword said that, according to old books connected with the Society at that time, there were neither trimming nor any artificial means allowed in bringing to competitions either vegetables, fruits, or flowers.

— THE PROPOSED PARKS AT HIGHGATE AND KILBURN.—The Common Council last week agreed to accept the offer of the Ecclesiastical Commissioners of land at Highgate and Kilburn for open spaces, and also that the Remembrancer should be instructed to give the notices

necessary for the introduction of a Bill in Parliament next session to enable the Ecclesiastical Commissioners to convey, and the Corporation to accept, the sites. It was further resolved that the interest of the residuary bequest of the late Mr. W. Ward (amounting to £20,000) should be applied towards the maintenance of the open spaces at Kilburn and Highgate.

— AT the meeting of the LINNEAN Society, which takes place to-night (Thursday) at Burlington House at 8 P.M., papers will be read on the following subjects:—1, "Flora of the Peruvian Andes, and its History and Origin," by John Bell. 2, "Monograph of Recent Brachiopoda," Part I, by the late Dr. Thomas Davidson.

— DR. BRAITHWAITE, 303, Clapham Road, S.W., has lately issued the ninth part of "THE BRITISH MOSS FLORA," which is in every respect fully equal to the preceding parts of this carefully executed work.

— AT Wakefield the usual weekly meeting in connection with the Paxton Society was held on the 24th ult., a very able and exceedingly interesting paper relative to the various modes of GROWING BRITISH FERNS was read by Mr. J. G. Newsham, a noted and successful amateur Fern-grower, at Sheffield, and it was followed by a capital discussion, in which several professional and amateur gardeners took part. Councillor Milnes presided, and Mr. T. Garnett filled the vice-chair. A very hearty vote of thanks was accorded to Mr. Newsham. It was generally admitted that the essay was one of the best ever read in connection with the Society, and the clear and interesting manner in which the essayist replied to a number of questions was much admired. A good collection of British Ferns was exhibited by Mr. Wassell, gardener to W. Vihart Dixon, Esq.

— WE are sure many of our friends will regret to hear of the DEATH OF MR. W. H. LASCELLES. He was well known and much respected throughout the horticultural trade. Those who have gone through his greenhouses with him will not soon forget his genial manners or his enthusiastic love of horticulture. Several years ago symptoms of declining health caused him to retire from his business at 121, Bunhill Row which is still being carried on by his successors.

— THE GLASGOW BOTANIC GARDEN does not appear to be in a very thriving condition. The Town Council recently held a meeting and have decided to allow the Society to continue in possession of the grounds until March 31st, 1887, any deficit then remaining to be supplied by the sale of plants or other property.

— A COMMITTEE, comprising the Rev. Canon Hole, Canon Swells, Canon Foster, Major Newton, Professor Blake, and H. Smith, Esq., has been formed to receive funds for a TESTIMONIAL TO MR. W. INGRAM OF THE BELVOIR CASTLE GARDENS, who has for thirty years contributed so greatly to an improvement of flower gardening.

— RELATIVE TO CURING DISEASED EUCHARISES, "W. W." writes:—"I had plants in a miserable state, the bulbs being infested with mites. The bulbs were taken from the soil and washed well with warm water; then before they had time to dry were dipped in soot, which, of course, made them black. They were next potted in very rough loam, sand, and wood ashes. It is important that the soil be very lumpy and the drainage as perfect as it can be made, so that the water passes from the pots nearly as quickly as it is poured in. I have noticed that when mites are present the soil has been too close and the drainage deficient. Our plants were nearly rootless and leafless. However, they flowered once the first year and twice the second. After the pots are full of roots I use soot water occasionally. The plants like this, and the mites do not; nor do the mites like wood ashes, while the plants enjoy them. The mites like decayed manure, and as Eucharises can be grown without it not a particle is mixed with the soil."

— TURNER MEMORIAL PRIZES.—We have received the following appeal in circular form, and readily publish it with the object of aiding the promoters in their commendable endeavour to appropriately perpetuate the memory of a great florist and excellent man:—"At a meeting held in the conservatory of the Royal Horticultural Society, South Kensington, August 11th, 1885, Shirley Hibberd, Esq., in the chair, a resolution moved by the Chairman and seconded by Dr. Masters, F.R.S., was unanimously adopted to the following effect:—'This meeting is of opinion that the eminent services to floriculture of the late Mr. Charles Turner of Slough should be commemorated by means of special prizes for florists' flowers fruits &c. and hereby resolves to promote the raising of a fund

the interest of which shall be applied to carry into effect the said prizes, which shall be entitled Turner Memorial Prizes; the fund, and all its incomings and outgoings, to be administered by a body of trustees or governors to be hereafter appointed.' It was further resolved that H. M. Pollett, Esq., of Fernside, Bickley, Kent, be the Honorary Treasurer, and Mr. James Douglas, The Gardens, Great Gearies, Ilford Honorary Secretary. The importance of the present movement will be felt and understood by horticulturists of all grades and tastes, for in every department, and by men of all parties, the name of Charles Turner has been held in honour, both because of the high character and gentle manners of the man, and his earnest work as a practical and ever-advancing florist during a successful career of over fifty years. It is no part of the business now in hand to pronounce any eulogy, the object of this circular is to make a direct appeal to the horticultural public for the means of establishing the proposed Turner Fund. The promoters feel that the cause carries with it all the persuasions needful to success, and they urge upon all sympathisers with its objects the need of prompt attention in collecting subscriptions and forwarding them to the Hon. Treasurer without delay. Copies of this circular will be supplied wherever needed, and gardeners are requested to bring it under the notice of their employers, the object being to make a formal and impressive public record of appreciative and affectionate regard for the memory of the most distinguished horticulturist and florist of the nineteenth century. The subscription list will close at the end of December; any person wishing to contribute will kindly forward the amount to the Treasurer as soon as convenient. Head and under gardeners are earnestly solicited to subscribe."

— "F. J." writes:—"I have this year gathered three pods of ripe seed from a *CHIMONANTHUS FRAGRANS* tree on a wall, and shall be glad to know if it is unusual for seed to ripen in the midland counties."

— A BRILLIANT display of ORCHIDS IN NOVEMBER can scarcely be expected even in the largest collections, but Mr. W. Bull has in his Clesea Nursery one of the prettiest shows of these plants that we have ever seen at this time of year. In one house there are some scores of spikes of the handsome rich crimson *Lælia autumnalis atropurpurea*, the splendid colour of which affords a fine contrast with equally numerous blooms of *Oncidium tigrinum*, the lips very large and pure yellow. Then there is a magnificent bank of the old but handsome *Odontoglossum grande*, numerous plants of *O. insigne*, *leopardinum*, and the sweet little *Trichostema aeneum*, which fills the house with its Orange blossom perfume. In another house the valuable and beautiful *Aerides Lawrencei* is flowering, and is unquestionably the finest of its genus, the flowers of great size, of a waxlike creamy tint streaked with rosy crimson. A plant of the superb *Vanda Sanderiana* is also in excellent condition, bearing on three spikes no less than seventeen large grandly marked blooms, one of the spikes having ten blooms. Several other rare and beautiful Orchids are flowering and render the house very attractive.

— CONSIDERABLE attention has lately been drawn to the PRESERVATION OF NATIVE PLANTS; and at the cryptogamic meeting of the Essex Field Club on October 3rd, Professor R. Meldola (on behalf of the corresponding Societies' Committee of the British Association) directed the attention of the Club to the following resolution, which had been submitted to the Conference of delegates held in Aberdeen by Professor Hillhouse of the Mason College, Birmingham, and carried unanimously:—"We view with regret and indignation the more or less complete extirpation of many of our rarest and most interesting native plants. Recognising that this is a subject in which local societies of naturalists will take great interest and can exercise especial influence, we urge upon the delegates of corresponding societies the importance of extending to plants a little of that protection which is already accorded by legislature to animals and prehistoric monuments, and of steadily discouraging, and, where possible of preventing, any undue removal of such plants from their natural habitats, and we trust that they will bring these views under the notice of their respective societies."

— THE *American Grocer* says that a French savant claims to have discovered in COTTON-TREE SEED a nutritious matter, presenting some most remarkable features in its composition. An analysis of the seed of Cotton trees, of which several varieties are cultivated in Bolivia, shows that this is the richest of all known grains in nitrogenous substances. He is convinced that Cotton-tree seed will make a flour destined to take an important place as a food for man.

— GARDENING APPOINTMENT.—Mr. J. Wyke, who has until

recently been gardener to Mrs. Dunn, Henley Grove, Westbury-on-Trym, near Bristol, has taken charge of Mrs. Dunn's gardens at Eccleshall Castle, Eccleshall, Staffordshire.

— SHELTER TRENCHES FOR HORIZONTAL CORDON TREES.—Mr. T. Francis Rivers writes:—"A very cheap shelter for horizontal cordon trees may be made by planting them in trenches about 3 feet wide and 2 deep; the soil should be banked on each side of the trench. After settling the banks will be about 1 foot high, and will form the support for the protection against spring frosts. This may consist of straw hurdles or stakes laid across and covered with mats."

— MR. JOSEPH MALLENDER sends the following summary of METEOROLOGICAL OBSERVATIONS at Hodsock Priory, Worksop, Notts, for October, 1885:—Mean temperature of month, 45.2°; maximum on the 2nd, 57.9°; minimum on the 30th, 27.3°; maximum in sun on the 5th, 115.1°; minimum on the grass on the 30th, 20.2°; mean temperature of the air at 9 A.M., 45.1°; mean temperature of soil 1 foot deep, 47.6°. Warmest day, the 17th; coldest day, the 30th. Nights below 32° in shade, two; on grass, eleven. Total duration of sunshine in the month, sixty-eight hours, or 21 per cent of possible duration; we had ten sunless days. Total rainfall in month, 5.32 in.; maximum fall in twenty-four hours on the 23rd, 1.67 in. Rain fell on twenty-four days. Average velocity of wind, 11.4 miles per hour; exceeded 400 miles on four days, fell short of 100 on three days. Very wet, cold, and dull. In ten years we have only had two months with a larger rainfall—viz., December, 1876, and October, 1880. October, 1880, had also a lower mean temperature, and 1881 was nearly as cold; but in no previous years have we had such low day temperatures. Sunshine less than in any of the last four years.

— THE *Society of Arts Journal* records that the LARGEST VINE IN THE WORLD is one growing at Oys (Portugal), which has been in bearing since 1802. Its maximum yield was in 1864, in which year it produced a sufficient quantity of Grapes to make 750 litres (165 gals.) of wine; in 1874, 665 litres (146½ gals.); and in 1884, only 360 litres (79½ gals.). It covers an area of 494 square metres (5315 square feet), and the stem at the base measures 2 metres in circumference.

— EXTENSIVE TREE PLANTING IN MEXICO is now being undertaken by the Government, and contract has been made with Mr. Oscar A. Droege to plant 2,000,000 trees in the valley of Mexico within four years. The respective numbers are—80,000 Ash, 35,000 Willows, 120,000 Poplars, 60,000 Eucalyptus Trees, 60,000 *Troncos japones*, 60,000 Mountain Cypress Cedars, 60,000 Acacias, and 120,000 of miscellaneous varieties. The trees are to be in plantations of from 50,000 to 100,000 each.

— AN American paper has apparently become very philosophical, and puts forward the following remarkable observation:—"A life devoted to the extermination of cockroaches is nobler spent than a life devoted to the gathering of Orchids." This will perhaps prove an alarming discovery to some similarly thoughtful readers, but we do not anticipate that many will be induced thereby to undertake the "nobler" employment.

WHITE GEM CELERY.

WHETHER the season has been too dry for the growth of Celery in gardens generally I do not know, but certain it is very little has been written concerning it this season so far as I have seen. The object of this note is to call attention to the above excellent variety, sent out, I believe, by Messrs. Sutton in the spring of last year. It is, as its name implies, a gem amongst white varieties, and should be grown in gardens, large and small alike, where early Celery is desirable. Seed was sown about the middle of March on a gentle hotbed, the plants brought on in the usual manner, and planted out at the end of May and beginning of June. The weather at the time being hot and dry, water was given morning and evening for a few days, until the plants were re-established in their new quarters. A mulching of short grass from the mowing machine was applied as planting was completed, and was replenished as often as necessary during the summer. A quantity of grass was also dug in the trenches to serve as manure. Water was given every ten days or fortnight, and then not the quantity usually considered necessary, as the mulching prevented excessive evaporation, and maintained a more equable moisture than would have been the case had no mulching been applied. The usual practice of earthing early and often was not adopted, nothing being done in that way until about a month before it was "fit to dig."

This might seem almost impossible to many readers, but not when I state that our trenches were deep and the plants so compact and dwarf that the upper leaves covered the trench, thereby producing semi-darkness to the lower part of the plants, causing them to blanch naturally. I

have never noticed this natural blanching so much as I have this year, and I attribute the cause to deep planting and excellent habit of the variety, other sorts growing by the side of the White Gem showing no tendency to blanch under the same conditions. Notwithstanding the unfavourable season, not one plant has "bolted" or failed in any way, and we commenced digging the best Celery the 1st of October, my employer says he has ever tasted, while in other gardens near the crop has been a partial failure, and in one instance a total one. Nothing could induce it to make any growth whatever. It would be interesting to know how the Celery crop has been in other gardens. It may be added no trace of Celery fly has been seen this year with us.—B., *Hants*.

"THINKER'S" NOTES.

USEFUL POTATOES.—Your critical correspondent "Thinker," I am afraid, does not always examine the articles to which he refers so closely as he might, otherwise he would see what was meant in some of them which he affects not to understand. While I have no objection whatever to his reference to my article, I "think," if he will allow me to make use of that word, it was apparent that my object in writing on page 331 was to learn something about the usefulness of the newer varieties of Potatoes and not to tell, what most persons know, which of the old ones are good. I have, however, not the slightest objection to name a "short list of varieties" that afford a supply of satisfactory produce all the year round. They are—1, the true old Ashleaf for sheltered positions; 2, Myatt's Prolific closely following in open quarters; 3, Sutton's Early Regent; 4, the Scotch, Regent; 5, Magnum Bonum. If your correspondent, or anyone else, can improve on this list, or can substitute any better varieties for any of those named, I shall be glad to know what they are and will try them, if I have not already done so and found them wanting. Sutton's Early Regent is not very old. It was recommended to me by a writer in the *Journal* and has proved a valuable acquisition. It follows closely after Myatt's, and is of first-rate quality in the rather light soil in which it is grown.—A COUNTRY GARDENER.

CANKER IN FRUIT TREES.—As our friend the "Thinker" is unearthened, which we are glad to see, and requires something to think about, may I suggest that he give us his opinion on the cause of canker in fruit trees? I have thought about it and written about it until I am tired, although I have a reply to "Entomologist," which I withhold for the present.—J. HIAM.

TRINITY COLLEGE BOTANIC GARDENS.—In common with all your readers and correspondents, whatever my engagements, I read the graphic notes of "Thinker," and I can reciprocate his kindly reference to me (page 375) by saying, "with pleasure" and profit. I can only regret "he as yet has no idea how extensive Trinity College Gardens are," but we must try and tempt him to remedy that and see Ireland, if not sooner, next year. As to "instalments" of my note—the one he refers to, which tried vainly to imitate him in brevity—it is, I think, the fourth of the kind sent to the *Journal* at different times, when I could run up to Dublin and enjoy the great treat of a walk round with Mr. Burbidge.—W. J. MURPHY, *Clonmel*.

SHOWING LATE GRAPES.—Notwithstanding my obscurity, as portrayed by "Thinker," I notice that a couple of paragraphs is sufficient at any time to make your correspondent pen about a dozen in reply, and it is an old saying and a true one, that a long answer to a short question is a sure sign of a bad case. "Thinker" does not, however, attempt to reply in this case, but resorts to his usual practice of throwing up dust to confuse spectators while he is effecting his retreat. In fox-hunting parlance I must, however, "keep his nose to the fence," and make him either jump or turn tail. According to his own showing, the whole or main object of showing Grapes, or anything else, is to bring gate money to the organisers of the show, whoever they may be, and that being so he tells us that late varieties of Grapes must be sacrificed to that end. Sporting matches of various kinds are usually promoted on similar grounds, and one does not see why fruit and flower shows should not go with these. I must deprive "Thinker" too of the shelter of secretaries of horticultural societies, because none of these has ever at least avowed such principles of action as those professed, more particularly as the question is one of showing fruits out of season. Like "Thinker," I claim that I am not a disappointed exhibitor. From a pecuniary point of view I can employ my time to better purpose than showing, but it would appear from what he "could tell," to use his own words, that he has had a good deal to do with disappointed exhibitors, who protested and threatened actions, &c. As to Mr. Knight and his contemporaries not knowing more about shows than did old Mother Hubbard, I believe it, if the gate-money plea gives a just conception of their view he takes of them; but though men may die principles last, and those principles applied to "Thinker's" objects and purposes of exhibitions show them in a very unfavourable light, that he seems now inclined to share even in these days.

I observe that he accuses me of "accusing a body of men of being engaged in a low calling," and I wish to state, in order to put myself right with your readers, that I have done nothing of the kind, nor had I any intention of doing so. At all events, I did not malign any body of men nor mean to do so, but simply accused "Thinker" of putting horticulture on a "low ground," and that I adhere to. Neither did I apprehend "Thinker's" remarks as "a narration of circumstances" as he puts it, but for what they profess to be—viz., his own "thoughts on current

topics," and I am surprised he should seek to repudiate them or put them forward as the thoughts of other people when they are criticised adversely.

Exhibitors are not responsible for the schedules of prizes of fruit shows, and "Thinker" does not seem to grasp the fact that the temptations put in the way of exhibitors, who must either conform to the schedule or stay at home, is one of the main evils complained of. As to what I have myself done in the way of exhibiting late Grapes, I am ready to give "Thinker" an answer on that point when he can show me what it has to do with his "thought" that "the whole question turns on the purpose for which the objects are staged" and that that "purpose is to bring gate money."—NON-BELIEVER.

AUTUMN APPLES.

DESSERT VARIETIES.—The first of these may be said to begin with Early Harvest, Early Margaret, and Juneating. The latter is the earliest of all Apples, and is closely followed by Early Margaret, which is our favourite early Apple. It bears freely in the case of both old and young trees, and besides being of good appearance is of very good quality. Mr. Gladstone is said in the catalogues to ripen in July, but we can only speak of it as an August Apple, and a very good one. It is large, handsome, very prolific, and excellent in quality; it merits planting largely as an early sort. Market growers, as well as private cultivators, would find it profitable. Irish Peach is another fine August Apple, too well known to need any special recommendation from me. Red Astrachan is a good variety which hardly ever fails to bear a crop. Devonshire Quarrenden and Duchess of Oldenburg are early August varieties too, but not specially high in quality so far as my experience goes. Kerry Pippin is a free bearer, small and crisp, and deserving more patronage than it generally receives. It is a useful October Apple, and will be found good in November or later.

King of the Pippins, although classed as an early variety, is not ready until November, and will remain good until March. It is a splendid Apple in every way. The yellow Ingestre is a distinct and good September and October, although it is not quite so highly flavoured as some of the others. Of new dessert Apples Bunyard's Lady Sudeley is a real acquisition. It ripens about the middle of August, is very handsome, large in size, excellent in flavour, and a great bearer.

CULINARY VARIETIES.—Early kitchen Apples are well represented by several very good varieties; the best known of these is the old Keswick Codlin. In my opinion it is still the most valuable of all. It is a free grower and great bearer in all quarters. The fruits are of good size, and when good perfect models of what a culinary Apple ought to be. It should be included amongst all orders for kitchen Apples, no matter how small the number may be. Lord Suffield is another of the same class, so far as quality goes. It is a free bearer of handsome larger fruits, but I do not find it succeed so well on gravelly soil as the Keswick. For exhibition in August and September it is unique.

It bears very freely in a small state, and I have seen trees not more than a yard in height requiring propping up in autumn to prevent the weight of the immense fruits breaking the branches. Mr. Gladstone may be included amongst the kitchen Apples. It is one of those which serve two purposes. Worcester Pearmain is a free-bearing variety with firm, finely formed, highly coloured fruit. The Hawthornden is one of the surest and best of bearers of capital fruit which may be used in August or until December. Wormsley Pippin is good for the kitchen or dessert. Stirling Castle is one of the earliest, medium in size, and a heavy bearer. Golden Noble is another which should find a place in all collections of any extent. It is ready in September, and not over until December. York-shire Beauty is a free bearer, and does remarkably well in the orchard. It is an August and September variety, and finishes my list of good early Apples. Later ones will be referred to in a future issue.—A KITCHEN GARDENER.

ROSE W. F. BENNETT.

VISITORS to the principal Rose shows have seen and admired boxfuls of the rich purplish crimson blooms and expanding buds of this floriferous Rose. But there are numbers of persons who delight in Roses who cannot attend exhibitions of them, and there are also many who do not think it necessary that a Rose must be of sufficient size for including in stands of prize blooms to entitle it to be considered as meritorious. W. F. Bennett is not now referred to as an exhibition Rose, though it may be occasionally staged, but as valuable home decorative variety—a Rose for the million for supplying rich and beautifully formed half-expanded buds for cutting in profusion. This, when well grown, it will do, not only in summer but in winter in light moderately heated houses. It may be referred to as a perpetual-flowering Hybrid Tea Rose, and will form an admirable companion to the favourite white Niphetos, which in form it somewhat resembles. It is not unlikely that W. F. Bennett will become widely popular and be extensively cultivated for supplying the markets with flowers, and that, after all, is one of the best tests of the merits of a Rose. Messrs. William Paul & Son of Waltham Cross obligingly enable us to publish a fair representation of the Rose in question, which was honoured with a first-class certificate by the Floral Committee of the Royal Horticultural Society two years ago. The stock was purchased by

Mr. Chas. F. Evans of Philadelphia, and Messrs. W. Paul & Son are appointed agents for the sale of plants of both W. S. Bennett and Her Majesty in this country. The Rose now figured was the result of a cross between President and Xavier Olibo by Mr. Henry Bennett of Shepperton.

SEASONABLE NOTES ON FLORISTS' FLOWERS AND SPRING BULBS.

AURICULAS.—I have just now removed my frames into their winter quarters facing the south. With me it is much easier to get a sunny than a shady position, and I have to be more particular about their

leaves have been taken off, and where necessary the surface of the pots has been stirred. I now and then detect a little of the woolly aphis, and when I can I remove it, although, as I have said, not so afraid of it as I used to be; still, I am sure it bodes no good to the plant, and ought, therefore, to be removed.

CARNATIONS AND PICOTEES.—The rains which we have had since the beds of these were planted out has enabled them, no doubt, to root well, and all that they will require now is careful weeding and staking where the plants are at all long.

GLADIOLUS.—I have never been so late in harvesting these corms as this year. The wet weather came on just as they were dying off, and the ground has become so saturated that it is difficult to get them properly.



Fig. 62.—ROSE W. F. BENNETT.

summer position than their winter one. I have placed the frames in a good open position. The chief point I have to guard against is wind, for more than once when the frames have been left open they have come to grief. In looking through my frames I do not find more or as much autumn blooming as in ordinary years. I believe that the autumn has not been a growing one; I find, at any rate, that our farmers are all complaining that their autumn-sown seeds, such as Mustard and Rape, have not made much progress, and I have been surprised in the garden to find how late Chrysanthemums and other autumn-flowering plants are, while Belladonna Lilies have not yet pushed their way through the ground. Before placing the Auriculas in their quarters the dead

As a result of this I find fresh roots beginning to grow, a matter I should gladly have dispensed with; otherwise, the corms are "lifting" with me remarkably well, and my losses are fewer than usual. I have now some decent blooms, and they have thus for three months and a half given me much enjoyment.

DAHLIAS.—There has been in our locality as yet but little frost to injure these, although we have had very cold winds; they will, however, soon succumb, and must be taken up and stored away in a dry place. I hardly fancy the plan mentioned in last week's Journal will find much favour, but that the old plan of storing them away in a dry place free from frost will still be resorted to.

SPRING BULBS.—There surely ought now to be no difficulty in providing any garden with a good supply of these. When one sees the amounts of our great leading firms, the incessant sales at our auction rooms, and the temptations held out by growers in Holland to get them direct, they ought surely to be found everywhere. There are two ways in which they may be grown—one, leaving them in the ground always; the other, taking them up and storing them, and planting them in the autumn. It will be seen in the following notes that I adopt both of these plans.

CROCUSES.—I think the best way to grow these is as a border to the herbaceous beds. You may have clumps here and there of them, but they look gayest and best, in my opinion, as a bright border in spring. I leave mine in the ground for a few years without taking up at all, and have the edges of the border planted with the white *Campanula pumila*. This makes a green bed for them, through which they readily push themselves, and when they have done blooming and the foliage is tolerably yellow they are all cut off close, and the space occupied by them in spring is quite gay in the summer with the *Campanula*.

HYACINTHS.—Here also I have no planting in the autumn, or at least very little. My plan, as I have stated, is to plant out each year those I have grown in pots and then to leave them; by this means I have all over my garden clumps of them, which give fine blooms. When they have to be planted it should be done at once, as I see some I have just had from Messrs. Cutbush & Son are emitting roots, showing that it is quite time for them to be in the ground. They can now be had in various colours, guaranteed to bloom at the same time; so if a simultaneous bloom is wanted these are the best to obtain. I, however, prefer them to come on in succession, although the named varieties are of course more expensive than those which are to be obtained in colours. I do not think that the *Hyacinths* will refuse to do well in any light garden soil.

TULIPS.—The early-flowering varieties of these, as they are called in contradistinction to the florist varieties, make a very showy appearance in the garden. I have a large bed which I always use for them, manuring it well in the autumn before they are planted, and they grow and flower well. After they have done flowering they are taken up and dried, and the bed is planted with *Marvel of Peru*, which blooms until very late in the year, and scents the whole place of an evening. The following varieties are showy—*Bird of Paradise*, yellow; *Chrysolora*, large pure yellow; *Etna*, crimson; *Rose Luisante*, bright rose; *Vermillon Brillant*, rich vermilion; *Couleur de Cardinal*, famed scarlet; *Kaiserskroon*, yellow striped with red; *Proserpine*, rich rose; *Rose Gris de Lin*, delicate rose; *Globe de Rigaut*, purple, white streak; *Wouwerman*, rich claret; *Yellow Prince*, rich yellow. I do not grow the double Tulips, as I think them inelegant and quite unworthy of a place alongside the single ones; others think differently, and the same treatment is available for both.

DAFFODILS.—The rage for these has become so general that there is no need to insist upon their desirability for the garden in spring, the great difficulty being amongst the very large number of varieties, or so-called varieties, to select those which are most suitable. They are amongst the easiest grown of all bulbs, and the only question with me about lifting them is they so soon begin to occupy too large a space, but there are a few that are sure to be favourites with everybody. The beautiful little *Hoop Petticoat*, with its citron-coloured variety; the grand *Emperor and Empress*, the much-talked-of *Sir Watkin*, and the chaste *Poeticus* ought to find a place in every garden; but with regard to others, the best way, I fancy, is to put oneself into the hands of one of those nurserymen who have given special attention to the matter, and obtain from them according to the extent of the garden what they would consider the best; once established they give very little further trouble.

SCILLA SIBERICA.—This beautiful blue-flowering spring bulb has been so largely propagated of late years that it has become a much cheaper article than it used to be, and for a few shillings a good quantity may be obtained. Planted in clumps or used as a border it is equally effective, and easily accommodates itself to most garden soils. Its worst enemy I find to be slugs, which are in the habit of eating off the young flower bulbs. This I find especially to be the case with those planted on the rocky, the slugs always finding good shelter under the stones. I have been but little troubled with them this season.

CHIONODOXA LUCILLE.—This charming blue-flowering bulb is now much reduced in price, as, indeed, it ought to be. There is no bulb which seeds more freely than it does, while it also increases rapidly. I planted a good many some years ago in clumps in the border fronting my greenhouse, and these have now greatly increased in size. I have noticed each year the self-sown seedlings all round the clumps, and I believe that these flower the following year, while the older ones have increased in strength so much that good spikes of bloom, carrying eight and nine flowers on the spike. It puzzles me very much that some people should try to disparage it by comparing it with *Scilla siberica*. With the exception that both flowers are blue there is no point of comparison between them. The *Scilla* is of a metallic steel blue, the *Chionodoxa* cerulean with white centre. I will not say that both have equal merits, but both are indispensable. I have found *Chionodoxa* later in its period of blooming than *Scilla*. It, too, is easily cultivated; in any good garden soil that will grow bulbs at all it is sure to do well. It does not require deep planting.

SNOWDROPS.—These universal favourites are too well known to need anything to be said in their commendation. They used to be considered, as their name implies, the earliest of all our spring flowers; but that must be conceded now to the *Cyclamen*, whose pretty flowers of white and crimson I have found to be far ahead in this point of the *Snowdrop*. Any

who have not already obtained it ought to grow the *Asia Minor* one—*Galanthus Elwesii*, which for size and beauty is far ahead of our old favourite, the common *Snowdrop*. I do not think there is much difference in point of earliness, and it is also very free in seeding, so that I have found it in my border springing up in all sorts of places; and I do not think, when once it is established, much thought will be given to the older variety. It is very constant, for I have never found the least variation in any of the seedlings.

There are several other spring bulbs which are worthy of attention; but they belong rather to the rock garden, such as *Iris iberica*, *Anemone apennina*, and *A. stellata fulgens*, but those which I have enumerated are bulbs for every garden, and those who have not already obtained them should lose no time in doing so. Let me just say that I have a good many of those mentioned in a border facing my greenhouse. Here are *Daffodils*, *Snowdrops*, some *Crocuses*, and *Chionodoxa*, and when these have all died down the ground is sown over with *Mignonette*, and a fragrant bed is in full vigour all the summer months and late into the autumn, thus avoiding the unsightly appearance of bare beds for long together.—D., Deal.

EXHIBITING GRAPES.

"J. W., *The Elms*," in his note on exhibiting Grapes might have gone a little farther, and told us what he would have to meet his case. Now-a-days most exhibitors are working gardeners, though of course there are a few exceptions; but I suppose most of the Grapes exhibited are sold. Perhaps providing a class for single-handed gardeners or where a man and boy are kept would have been more to his idea. I have sometimes thought if classes were provided for two or more bunches of Grapes to be cut either from a given Vine or number of Vines in a certain space it might answer. A single-handed gardener, to my knowledge, has frequently a better opportunity for growing Grapes than the head gardener in large establishments; and "J. W.," must take courage and try his skill at one of the forthcoming shows, and then he will perhaps see for himself that he has as good a chance as the men he speaks of. At one time I thought market growers should exhibit in classes alone, but what is the difference between them and the noblemen who dispose of their produce in the same market? Personally, if I mean to show, no thought or fear of duke or lord, or any man in fact, would deter me from doing so, even if I knew they would defeat me. It would be a very poor show indeed if only just sufficient were staged to obtain the prizes offered. I like to compare side by side the good, bad, or indifferent points, and see what is to be learnt from it. Success in exhibiting is not only a question of £ s. d., but also of instruction. A stranger at a show of course feels somewhat lost at first, but my experience is that he has no need to be strange long at such places, for even in staging, a brother gardener, while doing his best to excel, will always hold out the right hand of fellowship.

I have known men to be very successful at very large exhibitions in good competition, when their stock of Vines was limited to a single house. It is not the size of the establishment, but rather the man that puts his mark on the Grape-growing. Legitimately encourage Grape-exhibiting by all means; to do this the fewer restrictions the better.

Now a word to employers of Grape exhibitors. In my younger days I was told that exhibiting meant so much loss in weight of crop, &c., which is quite a fallacy, for I can honestly say that a good moderate crop will produce better Grapes than a light crop. The latter will be very disappointing when show time comes. A word also to the grower. Do not oppose the wish of your employer. Of course it is the best you want for the exhibition table, and unless you all sail together keep the Grapes at home.—STEPHEN CASTLE, *West Lynn*.

MAIDEN TREES OF PEACHES AND NECTARINES

I CANNOT lay claim to any long experience with the system of planting maidens in preference to the trained trees which not long since were invariably employed whenever old trees had to be supplanted by young ones, or when totally new sites had to be furnished. These trained trees, it must be conceded, were very frequently grown into fine specimens, many of which existed for a long period, and, as a rule, they were much more perfectly formed than are the trees cultivated by the present generation of gardeners. Very few, if any growers, nowadays, expend much time in the attempt to secure a perfect outline, and which after the years occupied in its maturation, may be completely marred by the loss of one or more main branches in one season. It is now felt to be much too slow and unprofitable, and the aim is, as it should be, to furnish the walls or trellises, as the case may be, as expeditiously and cheaply as possible; tree worship in its old form thus taking a much more practical shape, to the advantage of all concerned. Probably perfectly formed trees are as much admired now as they ever were, but we judge by results rather than appearances.

One great result of the improved system of pruning and training is the rapidity with which a house may be furnished with fruitful trees, and which trees, owing to the more intelligent methods adopted, are undoubtedly much less liable to gumming and consequent loss of important limbs and branches. In a

great many cases the trained trees supplied by nurserymen have been irreparably injured before they have left their hands; not, however, from any carelessness on their part, but simply owing to the faulty practice adopted. The wounds caused by the severe pruning may have healed, but the dead wood covered by the new bark will in time make its pernicious effect felt, and the tree gradually, but surely, decays. Even if this be an exaggerated evil, the fact remains that in these frequently hard-pruned trees there are branches that have failed to keep pace with some of the rest, and these in time become "hide-bound," or refuse to swell proportionately with the younger growth beyond, and this again results in a collapse. Those who wish to avoid these dangers will do well to purchase maidens—that is, young trees that have never been cut back, and start with these in preference to those that have been hard cut back two or three times, and which are known as trained trees. Not only are they very much cheaper to start with, but they can be got into full bearing almost as quickly as the trained trees. I say almost, as I do not go so far as some may be inclined to do, for the simple reason that the rapid extension system may also be equally as well adopted with the trained trees, but I prefer the maidens all the same.

No difficulty will be experienced in procuring maidens by those who require them, as the nurserymen would rather sell a tree at 1s. 6d. that would have to be grown two or three seasons longer, requiring to be pruned, trained, and replanted each season, and then only realise 5s. Maidens can be procured readily enough, even of the newer sorts, and which cannot be supplied as trained trees, but it is not the extra strong trees that are wanted, as nurserymen seem to imagine, but medium-sized, well-ripened ones, and which should be stipulated for. The former will have branched considerably, and as these laterals are not fit to lay in, the chances are, a considerable, perhaps the best, portion of the stem will be blind, whereas the medium-sized trees will not have pushed many of the lower buds, and these will be available for next season's break. Further, these strongly grown maidens are apt to produce a few very gross shoots, and these require more skill in their regulation than many beginners would bestow on them. Mr. Taylor, when at Longleat, used to insist upon having these moderately strong well-ripened trees, even if he paid more for them, and since I have taken to planting maidens, I have good opportunities of learning why they are so much the best.

There are two methods of treating these maidens, one of which may be termed scientific, and the other the unscientific; and the difference is, by the former a tree may be trained to almost, or quite as handsome proportions, as by the old restrictive system, while by the other a less handsome tree will be secured, but this will perhaps have the healthiest stem, and may live all the longer in consequence. I may be wrong in the latter surmise, but appearances in the case of our trees point that way. What I term the scientific system has been well advocated by Mr. Simpson of Wortley, who in his work on Improved Training recommends that the maidens be cut down when first planted, say to within 4 inches of the union of the bud with the stock, two only of the shoots resulting, one on each side being retained. These shoots, carefully laid in obliquely, will, during the same season, form numerous laterals, but only two of these are laid in, both on the upper side, one near the base, the other one from near the middle of the shoot, the remainder being pinched beyond the second leaf and kept closely stopped during the summer. In this manner a healthy tree will have perfected six well-placed, and, if the other conditions are favourable, well-ripened main branches. Then if these branches, or the ripened portion of them, are laid in to their full length, any number of well-placed shoots can be trained from them, those not required, including all with a foreright tendency, being either rubbed off or kept closely pinched back. As Mr. Simpson states, and which I can fully corroborate, "a comparatively large tree" under this intelligent treatment can be secured in two years, and which will, in many cases, perfect a crop of fruit the following season. It is not always, however, quite such an easy matter to form a well-balanced head as I appear to suggest, so much depending upon circumstances. Given a healthy maiden to start with, and a good open position, either in a house or against a sunny outside wall, in which to plant them, and there need be no great difficulty; but when the maidens have to be planted among well-established trees, or if they are merely stuck into an odd corner with little or no preparation made for them, the case is very different, and the progress the trees make will be very slow indeed.

What promises to be the best trees on the place were bought as maidens and not cut back beyond trimming off the lateral growth and shortening the leader to within about 18 inches of its base, this preserved length of ripened growth eventually

becoming the main stem of the tree, whereas in the case of the cut-backs it is divided into two main branches, and which are not always so well balanced as we would wish them. I find that where the slightly shortened maidens broke evenly and healthily, as many as seven shoots were laid in, and these are now the main branches of the tree. At pruning and training time most of these branches were laid in to their full length, and from each, as many young shoots were subsequently trained as were required to form the tree and cover the space. Those grown under glass from the first made the least sappy growth, and gave a few fruits the season following planting, while during the second season the best perfected about three dozen of fine fruit. A tree of Alexandra Noblesse planted early in 1882, at the end of 1884 fully occupied a space of 12 feet square, and during this summer perfected seven dozen of fine fruit. I am aware that this is a poor achievement in comparison with what others have done in a less time, too, but then our maidens had to be grown in forcing houses among old trees, and were at a decided disadvantage, especially at the outset.

Even with the unscientific system which I have tried to explain, the beginner will have to use some judgment, especially in the regulation of the branches, or a "one-sided" tree may be the consequence. Some of the branches are apt to assume the lead—grow much too strongly in fact—this resulting in the harmful weakening of the remainder. If these gross shoots are allowed to have their own way for one season, they will always retain it, or if, when too late, are cut hard back, the next breaks will be still more gross, and the tree be spoilt. If any of the very sappy shoots that are produced cannot well be completely removed, they must be checked, so as to divert the flow of sap to those branches most requiring it. Mr. Simpson recommends "pinching the points during the growing season of those that are taking the lead too much till the others overtake them," while another experienced grower removes a considerable number of leaves from those shoots tending to grossness, this effectually checking them, and both plans are good. When the trees are altogether too vigorous to be fruitful—and it is astonishing how very strongly some of them will grow—they must be lifted and root-pruned in order to give the necessary check. This is more necessary in the northern counties than with us in the more favoured south, and I am informed that in some districts what I consider medium-sized well-ripened growth, would be termed coarse, and would not be fruitful in the counties of Durham, Cumberland, Westmoreland, and other moist localities. In our case, most of our maidens intended eventually for the houses are prepared for one or two seasons on the open walls, and the check given to them when transplanted is all that is required to make them fruitful. Once in full bearing, these freely grown and but slightly pruned trees give every evidence of long remaining in a healthy profitable state, very different in fact, in our case, to trained trees bought at about the same time. In a very short time they will have stems quite as large as have those trees that are four times as old, and which, do what we will to prevent, are frequently losing some of the best branches. The latter are being gradually replaced by healthy young trees originally bought in as maidens, and the change will certainly be to the benefit of all concerned.—W. IGGULDEN.

THE WOODS IN AUTUMN.

I FEEL I owe something to the Journal, and have owed this for a long time. Many people have also asked me why I never write to the Journal now, and some friends have expressed a wish that I should write once more to you on the subject of our woods. I am afraid I can write nothing new, but your readers perhaps will forgive me if this paper is dull and uninteresting, and give me credit for at least good intentions.

We are now in mid-autumn, so far as the calendar is concerned, but so far as Nature is consulted there are here in this western county but few signs of it. The moisture in our air is so great that the leaves on the trees seem to retain their freshness much longer than those nearer town. We certainly are much later in coming into full bloom, but we make up for it in autumn.

Will you take a walk with me through the great wood which surround our church? I have recently made a grand ride, which traverses one side of it from end to end. The wood is in the form of a huge horseshoe, and a more lovely one I do not know. There is a farmhouse at each end of it, and the walk connects the two. The ride is made right through the middle, and rises and falls with the nature of the ground, and all along it most lovely views open out. The Oaks are the great feature, not grand giant Oaks like we find in Warwickshire, but moderate-sized ones, but oh! so beautiful. Many of the branches of this one have been injured by the storms, and hang half drooping, half erect. Here you can see but faint signs of decay, still the leaves are green here and there, like on the locks of a man who has passed the prime of life. Signs of winter appear, a few leaves are tinged with yellow, and a deeper russet colours the topmost branches and those that face the sun; but the general tint is green, though

of a sober dark hue. Here let us notice the wonderful contrast the Ash affords. Its leaves have the bright glaucous green tint which they have at the height of summer. No tints are to be seen here, and my experience leads me to believe that the Ash leaves change less than any others.

As we walk along we see, however, most glorious coloured leaves hung with the blackest of fruit. The common Blackberry now is almost as deep coloured as the Virginia Creeper. It is a most lovely object, though the fruit, luscious as it looks, is almost worthless. There is an old saying that the Blackberries are never worth eating after Michaelmas Day. As all these sayings refer to the old reckoning on old Christmas and old Michaelmas, we must add on twelve days to our calendar, and so old Michaelmas means the 11th of October. After my work was over on old Michaelmas Day, which was a Sunday this year, I went through our wood with members of my family better able to judge on such matters, and they all agreed that the Blackberries were flavourless and sour, but the leaves are now most lovely. Soon we came to the Mountain Ash, already bearing scarlet berries. Even the Holly is now covered with red berries, reminding one of the old saying, that when the Holly has many berries we are sure to have a hard winter, but this I have disproved for many years. But what a walk it is! and how quiet and peaceful Nature is this afternoon! As we left our house the wind seemed high and felt cold, but here it is quite still. No branch moves, scarcely a leaf flutters. Nature's work is done, calm decay awaits her. Already signs show that this has commenced, but meanwhile she rests: a hush is over the woods, the birds are quiet, no sound of music steals through the Oaks. Now and then a wood pigeon the shyest bird I know, breaks out from its roosting tree with a loud noise, but only flies to another part of the wood, and no small birds are to be seen.

Rabbits, however are here scuttling about as they are disturbed by our footsteps, but they make not the slightest noise. All speaks of peace and repose. But soon as we near the end of our walk we hear the music of the little brook that rises in our wood. And here all along the walk are the glorious Ferns, the common bracken. Ah! no mistake about the season here, the bracken fronds are quite brown and almost dead. Nothing shows the close of summer more plainly than the common bracken. And, alas! something else shows it in a very unmistakeable way; it is not yet six, and already the shades of evening are gathering fast. The dew is rising, the air is damp, the sun has set, and we conclude our walk in the lovely twilight.—MONKTON WYLD.

NOTES ON THE PLANT STOVE.

THE dull time of year is now rapidly advancing, when great care will have to be exercised in the plant stove. No more potting should be done then is absolutely necessary. Alocasias cannot be increased too much, as nearly all are well worth growing. Alocasia Thibautiana makes a fine plant for exhibition, but it gets rather tall. In such cases get some sphagnum moss and tie it neatly round the stem, so as to encourage it to throw out roots. Syringing may be carried on at present, but on dull days it will be better to do so only in the morning. The sponge will be needed more than the syringe now. Alocasias and Anthuriums should be sponged about every three weeks. Three or four of the best foliage Anthuriums are *A. crystallinum*, *A. Browni*, *A. Veitchi*, and *A. Warocqueanum*.

Achimenes and Gloxinias must be stored away in a warm dry place until the time for starting them into growth again. *Asparagus plumosus nanus* is very apt to get infested with a very small white scale, but syringing with petroleum and water will soon destroy it. *Caladium argyrites* is one of the best plants for decoration either for the plant stove or for table decoration, and where there is a stock of bulbs they can be kept growing all the year round. A good companion for *C. argyrites* is *C. minus erubescens*.

Calanthe vestita is now pushing up its flower spikes; a few of them should be placed in more heat so as to force them into flower earlier. A good plan (where there is a lot of Maidenhair Fern grown) is to place one pseudo-bulb in a 48-sized pot, so that when they are in flower the pot can be put underneath the Fern with the flower spike drooping over it; this has a very pleasing effect.

Crotons may still be kept well syringed twice a day, and about once a fortnight with a mixture of petroleum and water. If so treated there need be no fear of thrips, nor yet of the small scale which infests Crotons when they are not doing well. *Curculigo recurvata variegata* will be useful during the winter; it will grow well in either stove or intermediate house; it is increased by suckers. *Sponge Dracænas*, chiefly on account of water getting into the axil of the leaf, which will soon cause them to decay off. *Dieffenbachia* and *Ixoras* are much infested with insects, the former being subject to green fly and the latter to both fly and thrips. It is better not to fumigate if there are any Orchids in the same house, as tobacco smoke is very injurious to the foliage of some Orchids. *Fitonias*, *Panicum variegatum*, *Peperomia*, *Phyllotænum Lindeni*, *Sonerila*, and *Tradescantia* should be increased as much as possible, for if only in small pots almost any variegation looks pleasing in the winter. Also any small suckers of *Pandanus* taken off now and inserted in the propagating frame will make good plants by next summer.—A WORKER.

IN THE VALLEY OF THE WILBERFORCE.

UNDER the above title Mr. F. N. Adams sends us an article describing a botanical visit recently paid to that district of New Zealand in company with Messrs. Brown and Arnold, and from this we take the following

extracts. The article appears in *extenso* in the *New Zealand Country Journal* for September.

"We made an early start next morning, passed the swamp fed by Lake Georgina, which lies in the hollow between Mt. Barker and a hill on the right, Craigieburn range in the distance. The river Rytton comes next, some 100 feet below; travelling downhill being a welcome change from the previous uphill work. This river draining the spurs of the Craigieburn range was very low, but in spring it would be hard to cross even on horseback. To the left was the carriage road range, hiding the 'gloomy Lake of Coleridge,' but we caught an occasional glimpse of the water through the spurs. Swampens were numerous in the boggy ground, and we saw Paradise ducks on Lake Selfe, which is about three-quarters of a mile long by one and a half wide. The lake has a grand natural background—the snow-covered peak of Mt. Gargarus in the distance; in front, tussock-clad hills with a fringe of bush, principally *Fagus*, *Veronica*, *Olearia*, *Cassinia*, bare rocks and jagged peaks jutting up here and there. When we arrived at the Harper it was in slight flood, one branch being 2 feet deep. Stayed at Fisher's wharf all night in company with Mr. King, who had helped us across the Harper. The weather looked threatening next morning, and we crossed the first branch of the Wilberforce in the teeth of a nor-wester. The road on the island is very rough travelling over stones and tussock; posts mark the route to the Government hut, where we made a short halt for refreshment. After leaving the hut we had a few miles of shingle, then the main branch of the Wilberforce and several small streams to negotiate before we could reach the flat at the mouth of the Moa river. This flat is a patch of good fertile land. Here were collected the large seed capsules of *Mimulus radicans*, and the purple berries of *Pratia macrodon*; patches of *Celmisia spectabilis* covering the road. Crossing the Moa river, which runs very swiftly, we took the newly formed road through the bush up to the camp, which we heard was six miles up the river at the junction of the N. Creek. As we passed through the zones of Beech, Celery Pine, and Pitch Pine, we saw the smoke of a fire ahead, which proved to be the camp of the roadmen. About two miles farther on we saw the light of the Moa Creek camp, and crossing the Moa again on a tree thrown across it we soon found ourselves among tents, whares, &c.

"Mr. Landers welcomed us with the true hospitality which the dwellers in tents have always given to the stranger, and the cook put before us a substantial meal, which came to the famished botanists like manna in the wilderness. Slept like tops in comfortable camp beds, and next day we met with Mr. Slater, a prospector, who knew the country. He took us over the Moa river, and showed us the habitats of *Gleichenia Cunninghami* and *Dracophyllum Traversii*. This *Eupacrid* grows 30 feet high, towering above the other parts of the bush, its long branches extending horizontally, bearing a tuft of leaves at the extremity, from which rises the bloom like a Pine Apple. It is certainly the most remarkable tree of the Alpine flora. Many young specimens were collected; those about 2 feet high are very handsome, with filiform leaves drooping like a *Dracæna*. There is another variety, *D. longifolia*, but its leaves are smaller and more imbricated. The tree was met with up to the snow, so that its hardy character cannot be doubted. The prevailing timber tree on Moa is *Libocedrus Bidwilli*, the Incense Cedar, the Kawaka of the Maoris. The tree attains to 30 or 40 feet in height, its conical top and dark green foliage being visible above the surrounding bush. The bark, which peels off easily in spring, is utilised by the miners in various ways. Like all Cedars, the wood is dark red and splits readily into slabs, but as the centre of most of the trees is hollow, and the wood very soft, it is not of much value as timber. It is singular that the wood of the other variety, *Libocedrus Doniana*, which grows in the North Island, is hard and valuable. The Ribbonwood, *Plagianthus betulinus*, is easily distinguished from the surrounding forest at this season by its golden leaves: the tree is deciduous, and its leaves had been touched by frost.

"On our return to the North Creek we separated; my companions taking different routes, but I had definite objects in view, and in company with Mr. Slater went in search of *Ranunculus Godleyanus*. Mr. Landers told us that the yellow Buttercup grew at a considerable elevation up the North Creek, so we made a start in that direction. Following that creek, which flows into the Moa river a few chains above the camp, on either side were spurs of the Cascade range covered with forest up to the snow-line; at intervals were small waterfalls pouring over precipices among the large boulders which had been rolled down the creek. *Ranunculus Lyalli* was plentiful on the banks, *Veronicas* lined the margins of the bush, while fine specimens of *Angelica gingidium* occurred some 2 feet across. The miners called it Aniseed, because the leaves and seed have a similar flavour. Horses are very fond of this aromatic herb and eat it greedily. Crossed the North Creek on a temporary bridge which led to the reef, on the slopes of the mountain; it is situated 1600 feet above the creek, and can only be worked in fine weather; in winter the claim would be covered with snow. Leaving the track we followed the bed of the North Creek, climbed very big boulders, and crossed the creek several times. When not in flood this creek is about the size of the Avon, but when there is a fresh it is a mountain torrent, tumbling over boulders and washing everything before it. *Dracophyllums* grew on the slopes in abundance, their peculiar heads standing up clear of the bush. Passing No. 2 creek we saw Mountain Lilies growing under the side of boulders and burnt scrub, whilst others grew on the vertical faces of rocks, the roots wedging themselves into the crevices. *Oursia macrocarpa* grew in patches 2 or 3 feet across—its bold dark green foliage, purple underneath, and large trusses of white flowers rendering it one of the finest of Alpine herbaceous plants. We found the best patches growing in peaty soil with water trickling among their roots, on the sides of watercourses. The other variety, *O. macrophylla*, we found growing in similar situations but the leaves and blooms are smaller. Some fine plants of *Aciphylla Monroi*, 8 inches high, were noted, evidently the male variety. The scenery, up the creek baffles description; ahead there is Mt. Mystery, to the left Mt. Williams with its ragged-looking peaks sticking out of the snow, and on the right mountains covered with forest, the creek between. We had some hard climbing to reach No. 5 creek, where the rare *Aciphylla* with red midribs and spines was met with. Half a dozen specimens were collected. A large *Aciphylla* with dark green leaves grew among the boulders. *Carmichaelia odorata* was apparently very local, as it was only met with once in No. 5 creek; it was out of bloom, but the miners said it

scented the air in the summer. Straggling plants of *Elie Weiss*, *Helichrysum grandiceps*, now appeared, showing that we were not far off the yellow Mountain Lily. Scrambling over some loose boulders we caught sight of what appeared to be *Ranunculus Godleyanus*, about 300 feet above. Everything was frozen, and plant-collecting at 5000 feet is not very nice work, hands and feet being so benumbed with cold as to be almost useless. *Celmisia coriacea*, the Cotton Plant, grew in abundance at this elevation, its silvery foliage and graceful habit making it a very pretty plant. Of *C. petiolata* we saw a few plants growing in boggy ground. In shady places, *Ranunculus Lyalli* was in full flower, and on one plant there must have been fifty expanded blooms. Several smaller varieties of *Ranunculus* grew among the stones. We at length reached *R. Godleyanus*, named after Mr. Godley, the pioneer of Canterbury. It has dark green foliage with shining yellow flowers borne on flower-stalks like *R. Lyalli*. With a prospector's pick we dug the plants out of the shingle slide, composed of broken slate, water continually running at their roots from the melting of the snow above. As the plants were covered with snow and ice it was difficult to get them out even with the help of the pick. Some very fine specimens of this rare plant were collected, but as the sun was going down and it was freezing hard we decided to commence the descent. We had several miles of very rough country between us and the camp, which required daylight to travel over in safety. The prospect of spending the night in that Alpine region without tent or food *à la* Mr. Green and his guides at Mt. Cook, was not pleasant, so we came down at top speed. In No. 5 creek we saw the large white flowers of *Veronica macrantha*, also a new *Gentian* with white flowers and pale green leaves in the shape of a rosette. Both seed and plants were collected. On the way to camp a variegated sport on a plant of *Senecio Bidwilli* was secured for grafting. Arrived at camp at 7 p.m., heavily loaded with plants and about twenty varieties of seeds which were collected during the day."

(To be continued.)

MARDEN PARK, CATERHAM.

THIS is Sir William Clayton's Surrey seat, but is at present rented to W. L. Greenwell, Esq. It is pleasantly situated some seventeen miles to the south-east of London, and nearly three miles from the little village of Caterham Valley. The old house was burnt to the ground some six years ago, so the present house is a modern erection built in the Elizabethan style, and is within a mile of Marden Park station on the London, Brighton, and South Coast Railway. The Park covers an area of 160 acres, and is entered by two neat porters' lodges, one on the east and another on the west side of the house, which cannot be seen from any points until the visitor is close upon it. The position of the house seems low, but I was informed that the front doorsteps and the top of St. Paul's Cathedral were on a level. The immediate surroundings of the house—some four acres in extent—are beautifully laid out with clumps of choice shrubs and Conifers, the margins of which are kept gay with a miscellaneous collection of herbaceous and bedding plants. Most of the trees throughout the Park are of great antiquity; very notably were some clumps of Yews, Limes, Beeches, and Chestnuts. Of the two latter I question much if there are finer individual specimens in England.

After admiring these gigantic trees we proceeded to the gardens by the principal walk, which is conducted through "Cedar Lawn," deriving its name from three grand old Cedars, said to be more than 200 years old. The garden is situated at the foot of a hill in a sheltered position, beautifully embosomed in the wood and sloping to the south. It is surrounded by a good brick wall 10 feet high, containing an area of four acres within the wall and a portion of the ground without. The walls are fairly covered with Peach, Plum, Pear, Cherry, and Fig trees. The latter ripens its fruit well on a south wall. The kitchen garden is divided into several quarters by 8-feet walks with Box edgings, and fruit trees are planted along the sides of the main walks, and in many places they have met and form a perfect bower, the trees affording more of a shade from the sun than they do in the way of filling the fruit room. Several younger trees having recently been lifted and replanted on slightly raised mounds of fresh loam were carrying fine crops of excellent fruit. Conspicuous amongst the Apples were Warner's King and Quarrenden. The above varieties seldom fail to bear well at Marden.

Small fruits are well represented by a selection of the leading varieties. Raspberries were planted in rows 6 feet apart and trained to a wire trellis. The canes were extra strong, ripened as brown as a Hazel, and cannot fail to produce a heavy crop next year. The culinary department was well stocked with excellent vegetables; particularly fine was Asparagus and Celery. Violets are also grown extensively at Marden. Mr. Clingen informed me that he was rarely without Violets, and he attributes his success to annually layering or pegging down two, three, or more runners from each plant and allowing them plenty of room. The old and woody crowns by this system are cut out annually, and fine blooms are obtained from the young plants.

The fruit and plant houses are built on a steep slope at the north of the garden; though they are old they are in fair repair. On entering them from the west No. 1, a lean-to vinery 40 feet long by 16 feet wide, with borders both outside and in. The varieties grown are Black Hamburgh, Buckland Sweetwater, and Foster's White Seedling. The Vines in this house have only been planted four years, and the fruit was all cut at the time of my visit, but the fine foliage and well-ripened wood with plump buds indicated excellent crops. We next entered a three-quarter span-roofed conservatory 60 feet long by 20 feet wide. This house contained many fine specimens plants, amongst which were some fine Orange trees 16 feet high, and in most luxuriant health. A fine *Seafortia elegans*, Palm, and some grand Azaleas. Four plants of *A. The Bride*, 6 feet high and nearly as much through, were in the best of health and bristling with buds. Tuberous Begonias were also very fine, especially

Princess of Wales, Princess Beatrice, Empress of India, and Albert Crousse. Specimen Fuchsias were also well represented by many of the leading varieties. The roof and pillars were covered with *Tacsonia Van Volxemi*, *Plumbago capensis*, *Rhynchospermum jasminoides*, and *Fuchsia Mrs. Gaddick Ditton*, a variety well adapted for covering pillars. The gardener's house and young men's rooms, fruit and storehouses, are built at the back of the range. Like the hothouses they are old, but nevertheless they are commodious and convenient.

We passed along 100 yards or more to the east and enter a cool fernery, 24 feet long by 10 feet wide. Most of the Ferns are planted in receptacles made purposely for them. Next to this is a span-roofed plant stove 40 feet long by 12 feet wide, with a sunk passage up the centre. This house contained a choice collection of fine plants. The following have been most creditably managed by Mr. Clingen:—*Davallia Mooreana*, 6 feet through, and two grand plants of *Adiantum concinnum latum* and *A. gracillimum*, *Epiphyllum truncatum* 3 feet through, and some fine specimen plants of *Croton angustifolius*, *Bougainvillea glabra*, and *Asparagus plumosus nanus*. Besides these were a good assortment of Palms, *Dracenas*, *Dendrobiums*, *Cypripediums*, *Oncidiums*, *Laelias*, *Calanthes*, &c. The roof was covered with a fine plant of *Stephanotis floribunda* growing in a 15-inch pot, which was flowering profusely.

We next entered the early Peach house 36 feet long by 12 feet wide, three trees being planted in front on turnover trellis, with three standards on the back wall. The varieties grown are Royal George, Bellegarde, Barrington, Noblesse, and Elruge Nectarine, all of which were in the best of health, and was informed that they seldom or ever fail to bear heavy crops. There was also a very fine crop of Tomatoes growing in 10-inch pots in this house. The late vinery comes next. It is 30 feet long by 12 feet wide, with borders outside and in. The varieties grown in this house are Muscat of Alexandria, Gros Colman, Black Alicante, and Black Lady Downe's. The two latter varieties were all that could be desired in size of bunch, berries, and general finish; seldom have we seen finer Lady Downe's. Gros Colman was also remarkable for size of bunch and berry. Some fine Caladiums were in this house 4 and 5 feet through. We next enter a Peach case 70 feet long, with a division in the centre. This case was filled with fan-trained trees, which were carrying a fine crop of small but highly coloured fruits.

In the nursery ground were many useful frames and pits. Melons and Cucumbers are well done on beds of fermenting material. The former were nearly over at the time of my visit, but Cardiff Castle Cucumber was bearing freely, and as a frame variety Mr. Clingen looks upon it as a real cut-and-come-again sort. The most of the frames were filled with a good collection of useful plants for winter bloom, which were in the best condition possible. To the east of the garden is a fine old orchard in grass, well stocked with standard fruit trees, most of which were carrying heavy crops. The whole place is conducted with skill and ability, reflecting much credit on Mr. Clingen, who has during the last seven years made great improvements in the gardens with a very limited share of assistance. —A. SMITH.

CHRYSANTHEMUM SHOWS.

SURREY CHRYSANTHEMUM SOCIETY.—NOVEMBER 2ND AND 3RD.

THE second annual Show of this Society was held in the Public Hall, Rye Lane, Peckham, on Monday and Tuesday last, being the first on the long list of exhibitions for the present month. The date being fixed so early it was scarcely expected that a very satisfactory display would be obtained, but the result was an agreeable surprise. There was not a large number of entries, but those who did exhibit had some blooms and plants of considerable merit, the former being especially interesting, as no dressing was permitted. The groups were also good, Mr. G. Stevens of Putney winning the prize of the Show (a silver cup, value five guineas) with a superb collection of plants most effectively arranged, and comprising a suitable proportion of both incurved and Japanese varieties. Some handsome blooms of Elaine and Mademoiselle Leroix were very conspicuous, as were also those of the bronze yellow free-flowering Japanese variety Mrs. Stevens, of which numerous plants were employed in the group. Mr. Stevens also gained the first prize with twenty-four incurved blooms, distinct varieties, none of which had been dressed, and very few could have been improved by any such artificial treatment. Mr. T. Sadler, gardener to C. Lambert, Esq., Oak Hill Place, Streatham, was a very successful exhibitor, carrying off five first prizes, besides several seconds. His twelve incurved varieties included some beautiful blooms of Prince Alfred, Golden Emperor, Queen of England, Prince of Wales, and Mrs. Dixon, while his twelve Japanese were all extremely handsome, comprising the following:—*M. Astorg*, a magnificent bloom; *Margot*, *Mdlle. Leroix*, *Mad. C. Audiguier*, *Thunberg*, *Rubrum striatum*, *Elaine*, *Curiosity*, *Peter the Great*, *Mons. Tarin*, *Soleil Levant*, and *Bouquet Fait*. Mr. Sadler also had six *Anemones* of good size (a fine group of plants), and six trained specimens, all of which were very creditable to his skill as a grower. It may be remembered that the wonderful bloom of Elaine shown a week or two ago at South Kensington came from the same garden. Some of the best of the other exhibits came from Mr. Haynes, gardener to Jno. Chandler, Esq., The Terrace, Champion Hill; and Mr. Howe, gardener to Mrs. Fletcher Bennett, Tulse Hill House. The Committee and Secretary, Mr. R. R. Priestley, have every reason to be satisfied with the success of their second exhibition.

EALING.—NOVEMBER 3RD AND 4TH.

THE usual annual autumn Show of the Ealing and District Horticultural Society was opened at the Lyric Hall, Broadway, on Tuesday and Wednesday last, and proved, both as regards the number and quality of the exhibits, highly satisfactory. The specimen Chrysanthemum plants were the weakest portion of the display, as the date had evidently been too early for the growers to get them into the best condition, but the cut blooms were remarkably good in several cases. The groups were arranged near the walls

and the blooms occupied tables in the centre of the hall, a graceful group of miscellaneous plants from Mr. Roberts, Gunnersbury Park Gardens, occupying a prominent position at one end of the building. A room was also devoted to the Apples, vegetables, and Potatoes, in which classes there was keen competition. Several miscellaneous exhibits, especially the Apples and Chrysanthemums from Messrs. C. Lee & Son, Hammersmith, the Carnations from Messrs. Hooper & Co., the Cyclamens and bouquets of Chrysanthemums from Mr. H. B. Smith, Ealing, and the wonderfully fine Chrysanthemum blooms from Mr. Harman, gardener to F. C. Capps, Esq., Crown Point, Ealing, also contributed much interest to the Show.

In the classes, all of which are confined to the district, the cut blooms were, as already remarked, extremely fine for so early a Show. Mr. J. Beesley, gardener to A. Fraser, Esq., Esthonia House, Ealing, had the best twelve incurved varieties. Capital samples of the following:—Empress of India, Golden Empress, Queen of England, Lord Alcester, Lord Wolseley, Emily Dale, Mrs. Shipman, Prince Alfred, Mr. Bunn, Refulgence, Jeanne d'Arc, and Baron Beust. The finest stand of twelve Japanese came from Mr. H. Davis, gardener to H. G. Lake, Esq., Fairlawn House, Chiswick, who had splendid blooms of Jeanne Delaux, Source d'Or, Margot, Thunberg, Mdle. Lacroix, Comte de Germiny, Madame C. Audiguier, Hiver Fleuri, Madame B. Rendatler, Madame Moulise, and Elaine. Another successful competitor in these classes was Mr. Collyer, gardener to Mrs. Morrell, The Elms, Uxbridge Road, who also showed well in other classes, being first with six good Pompons. Mr. C. Long, gardener to E. B. Ridges, Esq., Orchard Dene, Montpelier Road, was first with nine fine incurved blooms, gaining the National Society's medal; the same exhibitor also had premier honours for six Japanese varieties, being good specimen blooms. Mr. C. Smith, gardener to Thomas Nye, Esq., Oakville, Castle Hill, took the lead with twelve bunches of Pompons, M. Astie, Bob, Mdle. Marthe, and Madame Montels being remarkably fine. The best single bloom Japanese was Madame C. Audiguier, and the best incurved Lord Alcester, both from Mr. Beesley.

In the Grape class, Mr. Hudson, Gunnersbury House Gardens, was first with three capital bunches of Muscat of Alexandria, Aluwick Seedling, and Alicante, all well coloured. Mr. Hudson was also first with dessert and culinary Apples in a strong competition, his samples of Golden Noble being unusually fine. Messrs. Sutton's prizes for four dishes of Potatoes brought eleven competitors; Mr. John Farndon, 2, Vaughan Terrace, Southfields, securing the chief award, followed by Messrs. Wright, Dyer, and Chadwick. In the cooked Potato class Reading Hero was placed first and Schoolmaster second.

Certificates were awarded to Mr. Harman for Chrysanthemums La Purété and Fabian de Mediana; and to Messrs. Hooper & Co., Covent Garden, for Carnation Chevalier, a yellow ground variety streaked with red.

LAMBETH.—NOVEMBER 3RD AND 4TH.

In consequence of a considerable increase in the number of exhibits this amateur Society had last year to remove their Show to the Hawkstone Hall, Westminster Bridge Road, and in the same building this season's Exhibition was held. Though the competition was not quite so brisk in most of the classes as in the preceding year, yet the quality of the blooms and plants staged was fully equal to the best shows the Society has had in recent years. The competitors are residents within a radius of a mile and a half from the "Elephant and Castle," and the fact that the majority of the exhibits are grown under adverse circumstances and in the leisure time of the exhibitors—none being professional gardeners—renders their productions still more praiseworthy. The lateness of the season had, however, prevented several from exhibiting, but there was sufficient to give the hall a bright and cheerful appearance. An especial feature was the class for a group of Chrysanthemums to occupy a space of 80 square feet, and the four collections staged formed an important part of the general display, all being effectively arranged, and the first-prize group from Mr. H. Ellis comprised some well-grown plants bearing substantial blooms of good incurved and Japanese varieties. Messrs. J. Hole, W. Clark, and A. Ball followed in that class with bright groups. Mr. W. L. Tracey had some of the best-trained plants, and was first with six standards, six standard Pompons, and six Pompons, in capital condition and freely flowered. The standard Pompons were particularly good, the Golden, Lilac, White, and Bronze Cedo Nullis, with Sanguineum, being remarkably neat examples. Mr. T. F. Davison also was first with three standards similarly creditable.

The cut blooms were in several instances finer than we have seen them at this Show. Mr. C. J. Fill was very successful, securing the principal awards for twelve and six Japanese and six Japanese one variety (Mons. Tarin), the blooms in each stand being fresh and of good substance. The most notable were Mr. John Laing, Roseum superbum, Japon Fleuri, Cry Kang, Le Chinois, Mons. Tarin, and Fernand Ferral. Messrs. Child and Tracey followed in two of these classes. Mr. J. J. Hillier scored similar successes with twelve incurved, twelve Japanese, twelve large Anemones, and twelve Anemone Pompons. In another class for twelve incurved Mr. A. Ball was first, and Mr. W. Clark took a similar position for twelve large Anemones, Mr. H. Ellis leading with twelve bunches of Anemone Pompons, extremely fine, bright, and handsome. Reflexed varieties were also well represented by several growers. The awards included two silver cups, a silver teapot, a handsome album, and other useful and artistic prizes, which are more valued than money prizes would be. The arrangement of the exhibits, and the extremely neat accurate labelling is very creditable to the energetic Hon. Secretary, Mr. G. S. Addison, who has worked enthusiastically to improve the Society and its exhibitions.

BRIXTON.—NOVEMBER 4TH AND 5TH.

No more meritorious exhibitions have been seen at Brixton than the one briefly to be noticed as arranged under the experienced supervision of Mr. W. Hall, the Secretary. Though the date was early and the season late, most of the blooms were fully developed and the plants good. As the judging was only completed an hour or two before our going to press only a mere outline of the Show can be given, with the names of the chief prizetakers in the more important classes.

CUT BLOOMS.—The display of these was excellent, probably the best that has been provided at Brixton, and the competition extremely close. In the principal class of twenty-four incurved blooms, Mr. J. Holmes, gardener to G. M. Storey, Esq., Balham, secured the first position by a shave, Mr. J. C.

Salter, gardener to J. Southgate, Esq., being second. In judging the blooms, six points being taken as the standard, these two collections had an equal total, but the casting vote for freshness and evenness turned the scale. The finest bloom in these stands, and in the Show, was Mr. Salter's Golden Empress, 17 inches in circumference and nearly 5 inches high. Mr. Holmes had Princess of Wales, Queen of England, and John Salter in first rate condition, and the rest good. The third prize went to Mr. J. T. Salter, gardener to Mark Sheppard, Esq., Roupell Park. Mr. Holmes was also first in the class for twelve blooms, and Mr. Southgate a close second, with some larger but generally looser examples, this exhibitor being first in the class for six; Mr. Sadler, gardener to C. Lambert, Esq., second, and Mr. E. Cherry, gardener to Mrs. Gabriel, Streatham, third, the competition being good throughout. Mr. J. T. Salter took the lead with twelve large Anemones, very good; followed by Mr. Fulbrook, gardener to B. Baker, Esq., and Mr. Swain, gardener to E. Jones, Esq., Clapham Park. For twelve reflexed flowers, Messrs. J. Sadler; W. Howe, gardener to H. Tate, Esq.; and Mr. W. Livermore, gardener to F. Webb, Esq., were placed in the order named; the last-named exhibitors being alone in the class for twelve Anemone Pompons, staging beautiful examples. In the class for exhibitors of incurved blooms who had not previously won a prize, the honours fell to Messrs. W. Howe, H. Guyett, and A. W. Moorecock, for creditable stands.

Japanese varieties were splendidly staged, the chief winner in the class for twenty-four blooms being Mr. Pell, gardener to A. Margetson, Esq., followed closely by Messrs. C. J. Salter and T. Mursell, gardener to Mrs. Burton. The varieties cannot be enumerated, but one in the stand of Mr. J. T. Salter should not pass unnoticed. It has been certificated under the name of Thomas Todman, and was raised by Mr. Mahood. It has twisting thread-like florets of an "old gold" colour, distinct and bright. The prizes for twelve Japanese fell respectively to Messrs. T. Sadler, T. Mursell, and W. Howe.

PLANTS.—Mr. E. Cherry was first in the classes both for six and three plants with admirably finished examples with fine blooms, followed by Mr. W. Clarke. The best dwarf Pompons were staged by Mr. Weston, 3 feet across, and Mr. Cherry, who also had the best pyramids, followed by Mr. Livermore. The best standards were shown by Mr. Clarke.

AUTUMN SHOWS.

EXHIBITORS of Chrysanthemums will soon be actively engaged in preparing for the numerous shows announced for the present season, and the following list of fixtures may be useful as a reminder. Secretaries of Societies not mentioned will oblige by forwarding their schedules.

November	5th and 6th.—Richmond, Havant, and Highgate.
"	9th and 10th.—Stoke Newington.
"	10th.—Southend and Putney.
"	10th and 11th.—Brighton and Kingston.
"	11th.—Basingstoke.
"	11th and 12th.—National Chrysanthemum Society and Croydon.
"	12th and 13th.—Lindfield and Portsmouth.
"	13th and 14th.—Huddersfield.
"	14th.—Ramsbottom.

BANKSIAN ROSES.

THIS valuable class of climbing Roses is not so much grown as their merits deserve. They are most free blooming when rightly treated as regards pruning and situation or aspect, which are the principal considerations on which success in blooming them depends. They are usually regarded as shy bloomers, and so they are when pruned as ordinary Roses and placed in a situation where the exposure is not good enough. They will only succeed well out of doors in mild localities, where they may enjoy the fullest amount of sunlight. A full south aspect is the best; but in very warm localities they will do very well on a wall having a south-west aspect; south-east is less favourable. A light warm soil well drained is the most favourable to them. In a heavy soil, except they be protected by glass during autumn and winter, they ripen so badly that they often are injured; and even if they escape that they rarely flower well owing to the over-gross condition of their young growth. In localities in which they may not be grown successfully in the open air they must be accommodated with a position in a cool greenhouse or conservatory. They are quite worthy of such a position in any locality. They bloom so early that they are apt to be spoiled by the weather when they are fully exposed to it without any protection in localities where the spring climate is unfavourable.

There are four forms of Banksian Roses in cultivation. The oldest and best known is the white Banksian, which was introduced about eighty years ago from China. The flowers are small, very double, produced in large clusters, deliciously fragrant, with a considerable smack of the odour of the Sweet Violet. The yellow Banksian was introduced about twenty years later, and is similar to the white variety in every respect, except the colour of the flowers. Besides these there are the "Jaune Serin," with large, very bright yellow flowers, and the "Jaune Vif," also yellow, but somewhat smaller than the last named, which have originated in French gardens since the introduction of the species, and are well worthy of culture where there is room for them, as they are valuable climbing Roses. Then there is "Fortuniana," a form with large white flowers and peculiarly sweet, introduced from China about thirty-five years ago.

These Roses are usually reared in pots in nurseries for sale, and may consequently be planted out at any season of the year, but the best time is spring. The plants then have time to establish themselves before winter, and are, as it were, acclimatised before cold weather sets in. But if they are to be planted under glass it may be done at any time from January to December, according to convenience. As before said, a light warm soil is best for them, but the principal consideration is the drainage, which should be thorough, and the more so the heavier the soil is. The plants

will require no pruning except what is requisite to put them in proper form, and conduce to the filling of the space allotted to them as quickly as possible. The tendency to shoot away with strong vigorous shoots from the tops of the current season's growth, which they all have, must be restrained by cutting back such shoots; otherwise they will rob those at the base of the plant and leave it bare. When they have filled their allotted space the strong shoots must all be cut back annually, the weaker only being left, for it is on these that the flowers are produced. If the plants are very vigorous, and the crop of young shoots very numerous, it may be necessary to thin out the very weakest and the worst ripened, but this is rarely necessary, as when the plants begin flowering they lose some of their excessive vigour and produce a lesser quantity of young growth.

These Roses bloom in May or June, according to the locality in which they are grown, and they bloom on the shoots formed the previous season. They must, therefore, not be pruned till after their flowering season is over; but as soon as that is over no time is to be lost in dealing with them. The best way to prune them after they have filled the space allotted to them is to first tie in a moderate number of young shoots, so as to regularly furnish each tree at all points with the same character of branches, and then take the hedge shears and trim the remainder hard in. The main point is to note the period at which this should be done. Many that we have known attempt the culture of these Roses have pruned them as they would any of the summer-flowering Roses, thus pruning away the flowering shoots, and have condemned them as shy bloomers. If the pruning is deferred till after the flowering is over, and if all the other conditions are what they should be, there will be no cause to complain of the shyness of these Roses, but good grounds to marvel at their profusion. It will, however, be found necessary perhaps twice or thrice during the summer to look over the plants and cut back the gross shoots which may make way and threaten to impoverish the weaker-flowering shoots of next year; they should be cut back as soon as their character is determinable which will be easily done when they have attained a length of about 2 feet. It will then be seen whether they are to stop or run on; if the latter, cut them back.—(*North British Agriculturist*.)



HARDY FRUIT GARDEN.

THE lists of fruit given last month were selected with care, and a large proportion of the sorts enumerated will be found to answer in most gardens. But a real lover of fruit requires something more than a bare list; he wants ideas of which are the very best, such as he may regard as indispensable, and with which he may form the nucleus of an ever-increasing selection. He certainly has our warmest sympathy, and gladly will we help him. A Moorpark Apricot, a Brown Turkey Fig, an Orleans Plum, a Jargonelle Pear, a Ribston Pippin Apple, a Mayduke Cherry, a Grosse Mignonne Peach, a Pitmaston Orange Nectarine, a Warrington Gooseberry, and Keen's Seedling Strawberry. What garden can be without all of them? They are well-trying favourites of sterling merit, and the very mention of them brings to mind many a famous old fruit garden—aye, and many a favourite tree too. Let us make some additions to them. Of Apricots Kaisha and Orange, both excellent early varieties, affording a bountiful supply of fruit for preserving as Apricot marmalade. No doubt Brown Turkey is the most hardy and prolific Fig we have, but for a few dishes of really fine fruit we must plant a tree or two of Brunswick, taking especial care to afford them a warm sheltered corner of a wall or building facing south-west. Green Gage Plum is, of course, indispensable; so, too, are Purple Gage, McLaughlin's Gage, Transparent Gage, Bryanston Gage, Reine Claude de Bavay, Coe's Golden Drop, and Blue Impératrice. Of Pears we may name a few which prove good in most gardens, but it must not be forgotten what an uncertain fruit this is, none being more susceptible of the influence of soil and climate; and although the Pear Congress will doubtless do much good, yet we can hardly venture to consider its decisions as final, for many Pears are fruits of a season, being quite delicious one year and only suitable for stewing in another. Even Jargonelle must be watched closely, as the fruit becomes over-ripe and spoils so quickly. Williams' Bon Chrétien is certainly a safe sort to plant, and we may recommend that king of autumn Pears, Fandante d'Automne, with Comte de Lamy, Fondante de Charneau, Doyenné du Comice, Knight's Monarch, Seckle, Dana's Hovey, Jewess, Winter Nelis, Huyshe's Victoria, and Glou Morceau, as being a few of our very best Pears. But if you only have space for some single cordons, plant as many as you can 18 inches apart, and try the sorts we name and as many more as you can find space for. Nothing in fruit culture is more interesting than a collection of cordon Pears. Apples may be said to be badly represented by Ribston Pippin, because of the tendency of the tree to fail from canker. Well, by all means plant Cox's Orange Pippin; we have had a rich reward for planting it extensively, but we have also a few trees of Ribston Pippin, and of other really choice dessert sorts we have Kerry Pippin (so valuable in September), the high-coloured Worcester Pearman, King of the Pippins, Margil (so valuable for the freedom with which fruit is produced upon small trees), Pine Golden Pippin, Pine

Apple Russet, Golden Russet, Cornish Gilliflower, Reinette Van Mons. Melon Apple, Fearn's Pippin, Red Astrachan, and Hubbard's Pearmain. There are two Cherries which we consider indispensable for cooking and preserving—Belle Magnifique and Morello, and for dessert in addition to Mayduke space should be found for Governor Wood, Bigarreau, and Black Tartarian. Of Peaches Early Beatrice is 20 per cent. better against an open wall than when grown under glass, the fruit being of higher colour, and it is really rich in flavour. It is so much in demand that there should at least be two trees of it. Barrington and Walburton Admirable must also be had for our supply of late fruit, and for intermediate sorts Dr. Hogg, Rivers' Early York, and Belle Bauce. If, however, you can only afford space for one tree, let it by all means be a Grosse Mignonne. The best late Nectarine we have is Pine Apple, with richly flavoured yellow flesh quite equal to Pitmaston Orange. Downton and Balgowan are grands Nectarines, and Rivers' White affords some pretty dishes of fruit.

FRUIT FORCING.

VINES.—*Early-forced Vines in Pots.*—Where thin-skinned Grapes are required in April, they taking precedence of Lady Downe's and other late varieties, the house intended for their culture will now be ready for their reception, if indeed they are not already in position. The pots should be placed on stands or pedestals which will not give way under their weight or interfere with turning the fermenting materials used for supplying bottom heat, than which nothing answers better than bricks placed to the required height without mortar. Where weight and quality of crop are first considerations some turf should be packed against the pedestal, and the holes in the pots enlarged, bringing the turf up above these so as to be within easy reach of the roots, which will speedily follow the stimulating food with which the Vines are fed. For supplying bottom heat Oak leaves are the best, as they supply heat and moisture through the early stages of growth and rich stimulating food from their decay at the finish, when the fruit requires all the support that can be given to it. Care should be taken that the heat about the pots does not exceed 70° to 75°. The canes should be allowed to fall in a horizontal position over the fermenting material until they have broken, and be syringed two or more times a day, but sufficiently early for the last time each day to allow of the canes becoming fairly dry before nightfall. If the Vines have not been shortened to the proper length and dressed with styptic they must not be shortened now, as bleeding would weaken them, and it is easy to dishud when they start. Black Hamburgh, Royal Ascot, White Frontignan, and Foster's Seedling are excellent kinds for early forcing in pots, to which may be added Madresfield Court, which requires liberal feeding until the berries show signs of changing colour, when a gradual diminution, combined with a dry atmosphere, is necessary to prevent cracking.

Earliest-forced Planted-out Vines.—The houses containing Vines from which ripe Grapes are expected early in May should be closed by the middle of this month, or if the Vines are young and vigorous and not subjected to early forcing before, close the house at once, as they do not break so quickly as old ones that have been forced for a number of years. With a view of economising fire heat, and to produce a humid atmosphere, a good hed or ridge of fermenting material, consisting of two parts leaves and one of stable litter, may be placed upon the horder and turned over at short intervals, additions being made as the heat declines. In the cases of old rods they may be tied up to the wires as soon as they are dressed, but young canes ought to be suspended in a horizontal position over the fermenting materials, where they can be well syringed with tepid water slightly warmer than the house, but it is well to allow them to become dry at least once in the twenty-four hours or at night. Keep the temperature at 50° to 55° at night, and 65° on fine days, the temperature by artificial means in the day being 55° until the Vines begin to move. If the border is not in a thoroughly moist condition it must receive repeated supplies of tepid water or liquid manure if the Vines are weak, so as to thoroughly moisten it through.

Mids-on Houses.—Those that still contain a few bunches of Black Hamburgh and other thin-skinned Grapes may now be cleared, as the fruit will keep fresh in a cool dry room, and the Vines will derive great benefit from free exposure to the weather so long as it continues dry and mild. When thoroughly at rest Vines will not be injured by a little frost, but a sudden chill should be guarded against by drawing up the roof-lights, or closing the houses when the nights are likely to be wet and frosty. The Grapes should be cut with all the wood that can be spared for insertion into bottles of water, which should be soft, and a piece of charcoal placed in each, removing the old foliage, but do not shorten the wood that has been allowed to extend beyond the bunch.

Succession Houses.—Push on the pruning as soon as the Vines become clear of foliage, also the cleansing, painting, and lime-washing, carefully washing the Vines with soap and water prior to dressing with an approved insecticide. Presuming the Vines have been fairly free of insects, the old-fashioned practice of peeling, scraping, and painting with a pigment of clay, soot, sulphur, and other nastiness, which is more calculated to protect the larvæ than destroy it, is better to wash twice and preserve the beauty of the bark, which is of incalculable value in holding moisture from the syringe and aids the flow of the sap when they are starting in growth when excited by genial moisture and warmth.

Late Hamburghs.—The atmosphere in which bunches of these are hanging cannot be kept too dry. A steady temperature of 50°, with a little warmth in the pipes and liberal ventilation on dry days, will snit them during the fall of the leaf, when, unless the house is well adapted for keeping them, the bunches may be cut, bottled, and placed in the late houses.

Late Houses.—If late Grapes have not finished well, nothing will be gained by pushing the fires after the wood is ripe, neither will a high temperature prevent them from shrivelling when the leaves fall. Where this defect is the consequence of over-cropping, relief should be given the Vines by cutting a portion of the bunches at the earliest convenience; but where it can be traced to imperfect drainage or bad borders, no time should be lost in getting out the old soil and laying the roots in new compost over rectified drainage. Highly finished Muscats hanging on Vines that have lost their leaves are liable to be tinged by exposure to bright sunshine, which, though weak in November, disfigures them to some extent, especially when grown for market. To guard against this, which is only needed in case of houses with large panes of glass, a single thickness of pilchard nets drawn over the roof will be a sufficient shading. If not already done late Vine borders should have some covering placed over them that will throw off rain and snow. The inside borders will be getting dry at the surface, and should be covered with some dry fern or straw neatly spread over them, which will prevent the border cracking and its giving off dust, besides improving their appearance. Give daily attention to the removal of ripe foliage as it parts from the Vines, keeping cool, dry, clear of plants requiring water, and thoroughly clean.

PLANT HOUSES.

Lily of the Valley.—Plants that have been prepared in pots for early forcing as directed in spring have ripened their foliage and have been resting for some time. The two or three slight frosts that we have had lately have been beneficial for these, as they will start better and more quickly into growth when introduced into heat. This may be done without delay. Plunge the pots in cocoa-nut fibre refuse or sawdust some inches beneath the surface where a uniform bottom heat of 80° to 85° can be maintained. If the top heat can be kept at 65° to 70° it will be ample. When the plants have commenced growth they should be placed nearer the surface, so that the flower spikes and foliage can grow through and thus gradually expose themselves to light. The flowers and foliage of this lovely Lily are often crippled by lifting them from the plunging material and exposing them directly to full light. Plants that have been growing in the open ground on purpose for lifting may now be taken up and sorted. Reserve the best crowns for potting or placing in pans and boxes according to requirements. The smaller ones can be planted again on the same ground after manuring it well to be ready for lifting again in two years. Under this system it is necessary to make a plantation annually, and then a portion is ready for lifting every year.

Obtain imported clumps now and place them in 5 and 6-inch pots, arranging them outside until they have been exposed to sharp frost, when they may be placed in a cold frame. Single crowns (imported) are now largely used for early forcing, and should be placed in boxes and pans at once if the flowers are required early. These may be potted, but we usually lay them in leaf soil. The boxes must not be too large, for they come forward more evenly in small than large ones. If these are placed into heat directly they will not start freely into growth. Those stood outside for two or three weeks and sent to rest by frost will come into flower before those introduced as soon as imported.

Spiraea japonica.—These may now be lifted, selecting those only with large plump crowns that are certain to flower, and place them in 5 and 6-inch pots. The portions with small crowns can be laid in a heap with a little soil or ashes over them until a convenient time for planting. The plants reserved for this purpose should be cut into suitable sizes, so that they will go into the pots named after a season's growth. They should be planted on ground liberally enriched with manure and fully exposed to light and air, which is essential to the development of strong flowering crowns in one season. Moderate-sized crowns are much better for planting for next year than larger ones that may probably flower. The smaller ones develop into a flowering size, while those that flower naturally divide into a number of smaller and weaker crowns, requiring two years before they become of a flowering size. By planting the pieces with small crowns a stock of flowering plants are annually raised, and those that have been forced can, when they have done flowering, be conveyed to the rubbish heap.

Dielytra spectabilis.—These also must be lifted and potted as advised for Spiraeas. Small or weak crowns should be planted again for another year in rich soil. If sufficient stock cannot be obtained from these a few good-sized plants should always be kept on hand, to be lifted and divided for this purpose. Some of the plants that are forced are good for this purpose if planted out in the shrubbery and other borders for a year or two to thoroughly recruit themselves. All those forced can be planted out afterwards, if not they can go to the rubbish heap. Those planted for another year should have a sheltered position, where they will be protected from spring frosts, for they start early into growth and are very liable to suffer. The crowns should also be protected from severe frosts by scattering over them a little litter or half-decayed manure. These may be placed in a frame or any cool place after potting.

Solomon's Seal (*Convallaria polygonatum*).—Lift the largest crowns for potting in various sized pots according to requirements. These plants, with their arching stem of leaves and flowers, are very useful for ornamental arrangements in the conservatory or elsewhere. The small crowns should be planted for lifting next autumn, the same as advised for Spiraeas and Dielytras.

Lilium longiflorum and Harrisi.—Obtain bulbs of these and pot them at once if they are wanted in flower early in the season. Place single bulbs in 4-inch pots in a compost of loam three parts, the other part being composed of leaf mould and manure; to this may be added

a good dash of coarse sand. Cover the bulbs with soil when potting them. After potting stand them in a cold frame and cover with about 1 inch of cocoa-nut fibre refuse. They can remain in this condition until they grow through the plunging material. When wanted early place the pots containing the bulbs where a greenhouse temperature can be maintained, but cover in the same way.

Other Plants for Forcing.—Azalea pontica, with the Ghent and Mollis varieties as well as Hybrid Rhododendrons, should now be lifted for forcing. Pot them in good loam, and afterwards they need not be taken indoors, but can be plunged outside until they are wanted. As fruit houses are cleaned these are placed in them in batches ready for starting with the various houses, to be eventually drafted from the forcing house. The steady heat of these structures start the plants slowly, and they come forward rapidly when introduced into the closer and warmer atmosphere of the forcing house.

THE FLOWER GARDEN AND PLEASURE GROUND.

Tuberous-rooted Plants.—In some positions Dahlias and various other tender bedding plants are still flowering freely, and in this case it is not necessary to interfere with them, but where they have been rendered unsightly by the frosts they may well be lifted and stored. Dahlias to have their stems cut down to about 9 inches of the roots, and after they have been lifted or dried, the stems being downward while this is being accomplished, to be stored in a cool dry outhouse, potting shed, or cellar. The labels bearing either the name or description of each variety to be securely fastened to each, this preventing much confusion at propagating time. Now that there are such a great variety of singles it is unwise to preserve any but the very best sorts. Cannas to be lifted and treated similarly to the Dahlias, with the exception that the soil should not be so freely cleared from the roots. Salvia patens when lifted to be stored thickly in a box of fairly moist soil, and these may be wintered with the Dahlias. Verbena venosa forms long fleshy roots, and as many of these as possible should be lifted and packed thickly in boxes of good soil and wintered in a cold frame, house, or pit. It is by means of short lengths of these fleshy roots that the stock can be most readily increased next spring. Tuberous-rooted Begonias are now largely planted in the flower garden, and they fully deserve to become even more popular. Those that are damaged by frosts may now be lifted and stored thickly in boxes of slightly moist soil, and this will preserve them in a plump state during the winter and early spring months. This less fire heat this class of plants receive after they have formed good tubers the better. They should be wintered in a dry frame, pit, outhouse, or in a greenhouse, where no drip will reach them. These and all the foregoing will require to be carefully protected from severe frosts, but must not be coddled, or otherwise they are apt to start into growth prematurely, and be considerably weakened thereby.

Spring-flowering Plants.—Many of these are much smaller than usual, this being especially the case where the seed was sown rather late, and unless they are planted more thickly than heretofore the ultimate effect will be weakened. Transplanting at this time of year should be done as much as possible during dry weather, as this admits of its being done cleanly and well. It is of great importance that each plant be lifted with good balls of soil and roots, and be firmly fixed when replanted. They will also require to be firmed after severe frosts, as these loosen them considerably and greatly interfere with the free rooting and flowering habits of the plants. All are great exhausters of the ground, and as they make but poor progress on poor soil it may be advisable in some cases to dig in a quantity of decayed manure or leaf soil. Mixed borders especially usually stand in most need of manure, and unless it is given either now or in the spring without stint the occupants cannot reasonably be expected to grow healthily. All the various kinds of bulbs that require to be planted at the present time will produce finer spikes and heads of blooms when the ground is properly manured and otherwise well prepared for their reception. For this class of spring-flowering plants or bulbs well-decayed manure should be used, this being well mixed with the soil in preference to merely turning it in to a great depth. The Narcissus, Daffodils, Snowdrops, and Tulips ought always to be planted early, the two former especially so, while Hyacinths may be planted now or a month later, according as to whether an early or late display is required. All are most effective when grouped or planted in lines of one colour in preference to haphazard mixtures. The bulbs should be disposed about 2 inches below the surface, and choice sorts may well be surrounded with good gritty compost.

Selections of Roses.—The time has arrived for ordering and planting Roses, or they may be purchased and carefully laid in where they can be protected during severe frosts, planting being deferred till the spring. Roses planted at the present time frequently form a few fresh roots before the winter, and break more strongly in the spring in consequence; but then they are not so easily protected during severe weather, and those laid-in Roses start surprisingly well after they are planted, providing the delicate young fibres they form to a surprising extent are not injured during the act of transplanting them. If the Roses, whether dwarfs or standards, are received in bundles, these must be separated and laid in thinly, and not in heaps as we have seen them. We may again escape very severe frosts, but it is always best to prepare for them. Rough straw litter thrown over those laid in will save them, and a heavy mulching of the same material will also benefit those planted out. Land that has long been occupied with Roses is scarcely suitable for new plantations, but if this cannot be avoided it should be trenched, unless the subsoil prevents this, and some good fresh compost should be placed about the roots. The following Hybrid Perpetuals are worthy of culture:

in most districts, and succeed either on tall or dwarf stocks:—Alfred Colomb, Bessie Johnson, Camille Bernardin, Captain Christy, Comtesse d'Oxford, Duke of Edinburgh, Dupuy Jamain, Edouard Morren, Etienne Levet, François Michelin, Général Jacqueminot, Horace Vernet, John Hopper, Jules Margottin, La France, Lord Clyde, Louis Van Houtte, Madame Charles Crapelet, Madame Clemence Joigneaux, Madame la Baronne de Rothschild, Madame Victor Verdier, Mdle. Marie Rady, Marguerite de St. Amand, Marie Baumann, Madame Gabriel Luizet, Princess Mary of Cambridge, Madame Prosper Laugier, Marquise de Castellane, Maurice Bernardin, Sénateur Vaisse, Star of Waltham, and Victor Verdier. Tea-scented and Noisette Roses as a rule are best grown on dwarf stocks, but in mild districts they may last for several years on tall Briar. The following are good:—Catherine Mermet, Souvenir d'un Ami, Devoniensis, Maréchal Niel, Madame Lambard, Madame Bravy, Souvenir de Paul Neyron, Celine Forestier, Adam, Madame Berard, Madame Falcot, Amazone, Sunset, Gloire de Dijon, Caroline Kuster, Anna Ollivier, Madame Hippolyte Jamain, Perle des Jardins, Rubens, Jean Ducher, Grace Darling, Comtesse de Nadaillac, Marie Van Houtte, Souvenir d'Elise, and Etoile de Lyon. The following Bourbon Roses are also worthy of culture:—Acidalie, Bouquet de Flore, Comtesse de Barbantanne, Souvenir de la Malmaison, Sir J. Paxton, Baron Gonella, and Malmaison Rouge.

THE BEE-KEEPER.

NOTES ON BEES.

SMOKER.

"BASIL" appears to have a difficulty in keeping his smoker alight, "going out when it is set down." To avert this, keep it on end, and be careful that it does not get clogged up. Cleaning its internal parts frequently is necessary, so that it may work satisfactorily—but the less smoke the better for bees and honey.

GLASS IN SUPERS.

I never was favourable to glass in supers or hives to any extent, and I have still a growing dislike to its employment, particularly in hives. Wherever glass is employed in supers, it is there the bees are longest in sealing, often so tardy that the super is discoloured before it is sealed opposite the glass. So I prefer either very small panes, as is in the Stewarton hive, which serve as good indicators when the super is finished; or none at all, then a slight tapping with the finger over the super will indicate to the experienced bee-keeper, by the sound, whether it is filled or not. Or looking between the bars from the top gives some knowledge. Many bee-keepers have holes in their supers stopped with corks, which answers the purpose well.

THE TEMPERATURE OF OCTOBER.

With the exception of snatches of bright sunshine, October has, like its two predecessors, been very low, three and four nights in succession registering 9° and 10° of frost, and on one 14°; in fact, there were few nights but what frost was registered. I do not know whether this early and wintry weather augurs a mild or severe winter later, but past experience proves that, as a rule, there are seldom two winters, and that when one occurs in October there is no winter after. Be that as it may, the past month has been trying enough and puzzled bee-keepers much how to get their driven bees fed for the winter, this having been delayed a month beyond the usual time in consequence of the lateness of the Heather. A number of bee-keepers who were there found a difficulty in getting their bees to feed at all after having tried different top feeders, including the bottle. In the absence of the frame feeders I advised the common tin fountain for under feeding; in every case the bees took to it at once, thus negating the opinion of some that top-feeding is the surest and most natural. Much could be said on this subject, but it is needless to dwell on it; the bees themselves give the best lessons, and, no matter what may be said to the contrary, they give ample proof that they prefer the frame feeder or the fountain underneath to all others, at a time when we ought to know it is not only too late but too cold to feed in October. Hundreds of hives have been ruined by late feeding, following the advice

given in the *British Bee Journal* to feed in October for years in succession.

It is one of the most amusing things in the world to read bee literature, including trade catalogues. In the one nearly all the inventions for apiculture is concentrated to one individual, while in the other contradictory remarks provoke and perplex the reader. I know that many so-called inventions of the present day were in use long ago; that much that is written on that and kindred subjects have other purposes to serve than instructing bee-keepers who are supposed to be less well informed than themselves, but who may be in reality far behind. I need not say more on this at present, but I trust the hint will not be lost. We are all desirous of information, but it can only be rightly appreciated when given in a straightforward and uninterested manner. Appropriating others'

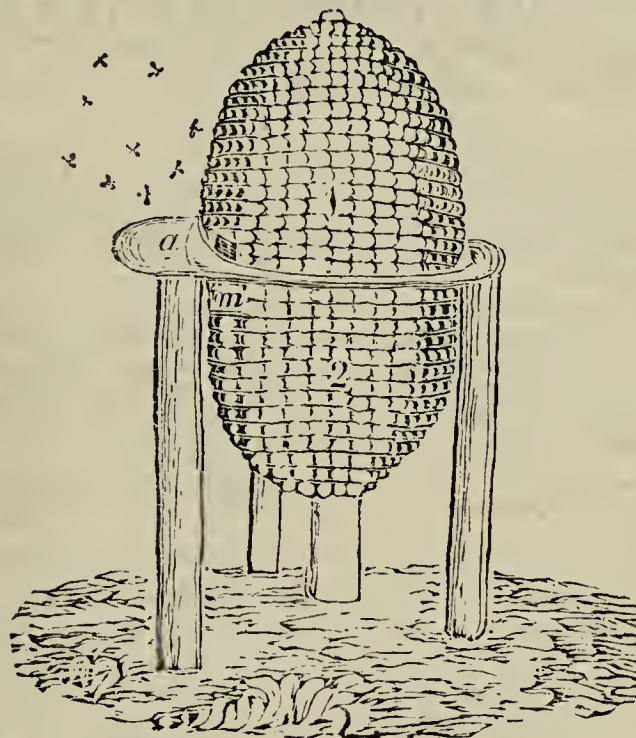


FIG. 63.

ideas is as mean as it is contemptible. I may yet have a battle to fight to rectify some of these mistakes, as I had in the "battle of the hives," which is now decided I am on the winning side.

Notwithstanding the opinions of the different systems of apiculture, it must be ceded, generally speaking, that since bees were cultivated it has been the aim of bee-keepers throughout the world to obtain honeycomb pure and uncontaminated from brood or other concomitants of the hive. The Stewarton hive is perfect in this respect in all its simplicity; yet, notwithstanding this, I confess many modern hives are as far from this as are the poles asunder. This brings me now to a point of importance, and on which I am backed up with proof positive that I am right in my argument, by the very individuals I hint at having so much to say against their neighbour manufacturers' hives in being so badly fitted for bee receptacles and for honey-producing.

One of the contrivances for obtaining honey in white comb is the "reversible frame." New in the mode of application, but not in principle; commendable in certain cases, but a system which should not be encouraged generally, because, as your excellent correspondent "Felix" would say, can be accomplished an easier way. The woodcut shows a plan which appeared about a quarter of a century since in a Dumfries paper, and, although the text is wanting, my conclusions are that it is a plan for obtaining white comb by inverting the full hive underneath an empty one to be filled, and as the Dumfries bee-keepers only began to leave off their primitive styles of bee-keeping after the first visit of the Caledonian Apiarian Society to Dumfries in 1879, and as the plan has been tried in other places confirms my opinion.

But, should this meet the eye of anyone who has seen the article referred to, the information will, I am sure, interest more than—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

John Carter, Hollycroft and Willow Bank Nurseries, Keighley.—*Catalogue of Forest, Fruit, and Ornamental Trees and Shrubs.*

Charles Van Geert, Antwerp.—*Select List of Ornamental Trees and Shrubs.*

T. Laxton, Bedford.—*Lists of Novelties.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Dessert Apples (F. J.).—We know of no Apple bearing the name of Phœbe, it must either be a local variety or there has been some mistake in labelling.

Garden Labels (W. K.).—Your notes, or at least those written on one side of the paper, were published on page 380 last week. We are obliged by your supplementary letter, which is too late for insertion this week.

The Silver Tree (W. A.).—The plant of which you sent a leaf is a member of the natural order Proteaceæ, and is known to botanists as *Leucadendron argenteum*. It is a native of the Cape of Good Hope, where it is known to the Dutch colonists as Witteboom, or Silver Tree, a name which it owes to the silvery appearance of the leaves. The plant is in cultivation, and may be seen at Kew and in a few other establishments where large collections of old and curious plants are grown. It was introduced towards the close of the seventeenth century, so that it is by no means a novelty. Leaves are imported for decorative purposes with the Cape Everlasting Flowers, and may be frequently seen in Covent Garden Market. A figure of the plant was published in the "Botanical Register" in 1826, but it does not show the peculiar whiteness of the foliage.

Tenant's Greenhouse (A. D.).—If you do not embed the bricks in mortar nor rest the sill in mortar on them, nor secure any part of the house to the landlord's building with nails, your house will be a tenant's fixture, and you can remove it and the bricks at any time. We do not know whether any Building Acts apply in your district. Where these are in operation a rather heavy fine can be imposed on anyone who erects a greenhouse without giving notice to the surveyor, whose duty it is to sanction the plans, and he can claim a fee for his usually unwelcome "assistance." Our small manual on greenhouse plants is reprinting.

Exhibiting Chrysanthemums (E. T.).—Annie Salter, Alma, Christine, and King of Crimson are reflexed varieties, the blooms opening out more or less flat, and the florets turning back rather than otherwise. If you exhibit such varieties in the class you mention you will be disqualified, or ought to be. Incurved flowers are those in which the florets turn upwards and meet in the centre of the bloom, curving inwards like the fingers of your half-closed hand. Those alone are eligible for staging with Japanese blooms in the class indicated. The name of the shrub of which you have sent a spray is *Cotonaster microphylla*.

Chrysanthemums for Grouping (Hall).—Everything depends on the wording of the schedule in respect of the class in which you desire to exhibit. We have many times seen Chrysanthemums effectively associated with stove and greenhouse plants in groups arranged for effect at autumn shows; in fact, such mixed groups are invited in the schedules of some shows, while in others Chrysanthemums are excluded. The arrangement of the plants is purely a question of taste on the part of the exhibitor. The ground is marked out, and competitors have to occupy the space the most effectively.

Table Plants for Exhibition (Idem).—A great deal more depends on the freshness and condition of plants than on any particular kinds for securing prizes. *Cocos Weddelliana*, *Geonoma gracilis*, *Aralia Veitchii*, *A. elegantissima*, *Reidia glaucescens*, *Croton interruptus aureus*, and slender-leaved *Dracaenas* are suitable for the purpose in question.

Eriobotrya japonica (Medicus).—This, commonly called the Loquat, grows very well planted out and trained to south walls in the south of England, but except in very favourable situations needs the protection of glass. We figured fruit of it in 1881 grown in Lady Parker's conservatory at Richmond, Surrey. The tree was then 9 or 10 feet high, in a pot about

14 inches in diameter, and it bore a dozen bunches of eight or ten fruits each at the ends of the branches, where the long rich dark green leaves were clustered as they usually are in specimens of moderate size. The tree had been previously in a stove, where it flowered late in the autumn, and having received careful attention a crop of fruits was set which gradually advanced to about the size of Apricots, and became fully ripe towards the end of March, then assuming a fine orange tint. They were not only larger than many we have seen, but possessed a much richer flavour than any we have previously tasted. As they each contained a single seed, it is probable the variety is that referred to by Fortune as the one most highly valued by the natives of China and Japan. There is a great difference in the quality of the varieties, some being comparatively worthless; and wherever this or any other foreign fruit is intended to be grown, a point of great importance which is frequently overlooked is the selection of the variety. The great defect in most of the fruits of the Loquat which are occasionally seen in the metropolitan markets is their insipidity or even unpleasant flavour, due probably to their having been gathered in an unripe condition. The first record we have of a tree producing fruits in England occurs in the third volume of the Horticultural Society's Transactions, published in 1822. A letter is there printed from Lord Bagot of Blythfield, Staffordshire, which was read before the Society in 1819, and recounts the fruiting of a tree in one of his lordship's houses. Fruits were produced during several years, generally of very fine quality and extremely numerous, as many as twenty-one having been borne on one branch. The method adopted was to place the trees out of doors during the summer, removing them to a warm tan bed in September. The flowers generally expanded in December, and the fruit was ripe by April. But on one exceptional occasion the flowers appeared in early summer. From that time until the present there have been few records of the production of fruit under glass. Loudon mentions one or two instances, and others have been noticed at wide intervals, but it is still an event of considerable interest. There are scarcely any well-authenticated instances of trees maturing fruit out of doors in England, though in the south of France, Malta, and neighbouring regions it is produced in great freedom.

Judging Chrysanthemums (A New Censor).—Generally speaking as was once suggested by Mr. Bardney, the rules published in the "Rosarians' Year Book" for the guidance of judges may be taken as the foundation for judging Chrysanthemums. *Definition of Blooms.*—1, A good Chrysanthemum must have form, size, brightness, substance, and be at the time of judging in the most perfect phase of its possible beauty. 2, A Bad Chrysanthemum.—All blooms shall be considered bad that have faulty shape, confusion of petals, removal of lower petals, faded colour, and which are oversized to the extent of coarseness, or undersized so as to render them puny, according to the character of each variety. 3, Form shall imply petals abundant and of good substance, regularly and gracefully disposed within a circular symmetrical outline. 4, Brightness shall include freshness of colour, brilliancy, and purity. *Judging.*—1, Judging shall be by points. Three points shall be given for the best blooms, two for mediums, one for those not so good but not bad enough to cut out, and an extra point for a very superior bloom. 2, One point shall be taken off from the box for every case of decided badness. 3, Where stands are equal in respect of blooms judges shall proceed to consider the general evenness, variety, arrangement, and setting up, the boxes being placed side by side and in the same light for that purpose. Those rules form a good base, but Chrysanthemum judges must be familiar with the standard character of the several varieties, and estimate their merits accordingly—that is to say, a bloom of Cherub, for instance, may deserve as many points as one of Empress of India, or more, if the former, though larger, be not good of its kind, while the latter, though decidedly smaller, is first-rate. They have to take into consideration size with symmetry and solidity, length and breadth of petal, also freshness and colour. The mere circumference of a flower is in itself not at all a reliable test, as loose flat examples may girth much more than others of twice their depth and firmness, yet these latter would be the more meritorious. We consider that six points should be the standard for a perfect bloom, one in which a fault cannot be found, as the slightly differing gradations in merit can scarcely be expressed when only three points are allowed as a maximum. We hope you have an experienced judge as a colleague.

Spiræa japonica in Pots (S. P. F.).—The following is the practice of a first-rate grower of these plants:—Pot the clumps as soon as they are received into 5 and 6 inch pots, according to the size of the roots. One large crock may be placed at the base of the pots, but for those required for late flowering this is not important. They do not need very much soil to grow them to perfection, provided the crowns are strong and have been well ripened, for upon this depends whether they flower well or badly. Any good fertile soil will do for them; but we prefer, where obtainable, good fibry loam, to which has been added one-seventh of decayed manure. In potting leave plenty of room for water, for an abundant supply will be needed when the plants are in active growth. After potting you may stand the pots outside until the approach of severe weather, when they will need the protection of a cold house or frame. This is not really necessary with those required for late or spring flowering, for they will be safe if the pots are plunged in coal ashes and the surface covered about 2 inches deep, so as to protect the pots from the action of the weather. Spireas are perfectly hardy, so that a very little protection to preserve the pots will keep the crowns in perfect condition. With the exception of a few required very late we prefer giving them protection under glass, for they start naturally into growth early in the spring, and thus render the work of forcing comparatively easy. These plants are easily forced into bloom in a temperature of 60° to 65°, which will be necessary early in the season; later a lower temperature will suffice. It is a good plan to bring them forward after the first batch or two under slightly cooler conditions, so that they will not become drawn up weakly. After the plants have started into growth they should be given a circulation of air daily when favourable. When growth has fairly commenced the plants should be arranged as close to the glass as possible to keep them dwarf and sturdy. Before they come into full flower gradually inure them to cooler treatment to harden both the flowers and foliage, by which means they will be preserved in good condition for nearly double the length of time than if fully developed in strong heat. If wanted

very early in flower plunge in brisk bottom heat and cover the crowns with an inch of cocoa-nut fibre or any other similar material until they start freely, when they may be grown without bottom heat. Plants started early—say at the present time—cannot be expected to do so well as those that are started later and brought forward under more natural conditions. *Spiræas* should never be dry at their roots, and when they have once developed a quantity of foliage and are showing their flowers stimulants in a weak state may be given freely. They must be kept free from insects by syringing, fumigation being injurious. When in full growth it is scarcely possible to give them too much water.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*J. P.*).—The Peach is undoubtedly Salway. (*R. H. R.*).—1, Baron Ward; 2, French Codlin; 3, Dumelow's Seedling. (*J. H. Neale*).—1, London Pippin; 2, Ribston Pippin; 3, Golden Noble; 4, Bedfordshire Foundling. (*A. S.*).—Apples—1, Greenup's Pippin; 3, Cellini; 5, Golden Winter Pearmain. Pears—1, Winter Nelis; 2, Summer Bergamot; 3, Marie Louise. (*F. T. Drummond*).—Apple—Winter Colman. Pears—1, Suzette de Bayay; 2, Passe Colmar; 3, Beurré Diel; 4, Ne Plus Meuris. (*A. Wilson*).—7, Beauty of Kent; 8, Minchall Crab; 9, Ord's Apple; 10, Pomeroy; 11, London Pippin; 12, Yorkshire Greening. (*G. M.*).—Grosse Calebasse. (*J. Jefferies and Son*).—5, Nonesuch; 6, Probably Golden Noble, very small; 7, Norfolk Colman; 8, Gloucestershire Costard. (*W. E.*).—1, Ribston Pippin; 2, Cox's Pomona; 3, Kentish Fillbasket; 4, Syke House Russet; 5, Beurré Hardy; 6, Passe Colmar. (*J. E. F.*).—1, Royal Russet; 2, Yellow Ingestrie; 3, Glou Morceau; 4, Beurré Diel; 5, Urbaniste; 6, Comte de Lamy. (*G. B.*).—13, Beurré Diel; 14, Marie Louise; 15, Beurré Rance; 16, Swan's Egg; 17, Josephine de Malines; 18, Beurré Superfin. (*H. Rowley*).—1, Hawthornden; 2, Winter Greening; 3, Cockle's Pippin; 6, Minchall Crab; 7, Dumelow's Seedling; 10, Golden Reinette. We only undertake to name six. (*A. D. Preston*).—1, Hollandbury; 2, Catshead; 4, Holland Pippin; 5, Bess Pool.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. M.*).—1, *Dendrobium chrysotoxum*; 2, *Zygopetalum intermedium*. (*W. R.*).—The large Aster is *Aster puniceus*, the small one *Aster Novibelgii* var. *lævigatus*; the *Fuchsia* is *F. conica*; the others we do not recognise. (*T. M. E.*).—The flat leaf-like plant is *Coccoloba platyclada*, the other is *Cacalia articulata*. (*T. Baigent*).—The slips sent are not in condition for anyone to name with accuracy, and all we can say is—No. 1 is a *Chorozema*; 2 and 3, unrecognisable; 4, an *Acacia*; 5, a *Statice*; 6, an *Epacris*. (*John Cameron*).—1, *Cupressus virginiana*; 2, *Cupressus torulosa*; 3, *Thunja occidentalis*; 4, *Cedrus Libani*; 5, *Quercus Ilex*; 6, *Eriobotrya japonica*. You will find the information you require in our reply to "Medicus."

COVENT GARDEN MARKET.—NOVEMBER 4TH.

THERE is no alteration from last week.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0 to 3 6		Oranges	100 8 0 to 12 0	
" Canadian ..	barre 10 0 15 0		Peaches	per doz. 2 0 8 0	
Cobs, Kent ..	per 100 lbs. 24 0 27 6		Pears, kitchen ..	dozen 0 6 1 0	
Figs	dozen 0 8 0 9		" dessert	dozen 0 4 1 6	
Grapes	lb. 0 6 2 0		Pine Apples English ..	lb. 2 0 4 0	
Lemons	case 15 0 21 0		Plums	1/2 sieve 1 3 2 0	
Melons	each 1 0 1 6		St. Michael Pines ..	each 3 0 7 6	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen 1 0 to 2 0		Lettuce	dozen 1 0 to 1 6	
Asparagus ..	bundle 0 0 0 0		Mushrooms	punnet 0 6 1 0	
Beans, Kidney ..	lb. 0 3 0 0		Mustard and Cress ..	punnet 0 2 0 0	
Beet, Red	dozen 1 0 2 0		Onions	bunch 0 3 0 0	
Broccoli	bundle 0 9 1 0		Parsley	dozen bunches 2 0 3 0	
Brussels Sprouts ..	1/2 sieve 0 0 0 0		Parsnips	dozen 1 0 2 0	
Cabbage	dozen 0 0 1 0		Potatoes	cwt. 4 0 5 0	
Capsicums	100 1 6 2 0		" Kidney	cwt. 4 0 5 0	
Carrots	bunch 0 3 0 4		Rhubarb	bundle 0 4 0 0	
Cauliflowers ..	dozen 2 0 3 0		Salsify	bundle 1 0 0 0	
Celery	bundle 1 6 2 0		Scorzonera	bundle 1 6 0 0	
Coleworts	dcz. bunches 2 0 4 0		Seakale	per basket 0 0 0 0	
Cucumbers	each 0 3 0 6		Shallots	lb. 0 3 0 9	
Endive	dozen 1 0 2 0		Spinach	bushel 2 0 4 0	
Heros	bunch 0 2 0 0		Tomatoes	lb. 0 4 0 0	
Leeks	bunch 0 3 0 4		Turnips	bunch 0 4 0 0	

sustained, and that the cream may be abundant and rich, and the butter of a delicate flavour. No doubt cows of a particular breed exercise much influence in these matters, but the milk of every cow will be spoilt—at any rate for butter-making, if an impure, unwholesome diet is suffered to taint the milk, as it does invariably. A system of chaffing and mixed food is good for them, but the racks should be kept well supplied with the best meadow hay three times daily, and not twice only—morning and night, as is so frequently done. Long fasting is bad for all animals, and we have repeatedly seen cows that were fed only twice daily eating litter saturated with filth, which must affect the flavour or both milk and butter.

It must not be forgotten that dairy cows upon the home farm are not kept solely for milk, as are the cows of many tenant farmers, and therefore the winter diet, of which pulped Turnips, brewers' grains, Swedes, and Oat straw form the chief ingredients, will not answer for them, such a dietary being intended solely for the promotion of a full yield of milk, little if any attention being given to quality. In the home farm herd quality must be kept well to the fore; we must have rich cream and butter of high colour and delicate flavour. To this important end the careful selection or breeding of cows must be combined with judicious feeding. The best meadow hay is the chief article of winter diet to be used both for chaffing and unchaffed in the racks. Use no inferior hay in any manner for them, and do not allow dealers in cattle spice to induce you to suppose that musty hay can be made equal to really good hay by a dressing of the spice which they are so eager to sell. No doubt the spice makes inferior food palatable, but it cannot make it proportionately nourishing. Bran is always given to the cows at milking time. They eat it greedily and derive much benefit from it. Long ago we tried to do without bran, but the deterioration both in quantity and quality of the milk was so great that we quickly resumed the regular use of it. Bran is not used while there is a full bite of grass, but is given early in autumn, and its use is continued until the cows are turned out upon the pastures in spring. Our readers must not forget how frequently we have asked them not to turn out the cows in winter, and not to do so in spring till the grass is strong upon the pastures, and is growing so freely as to insure them of food for rumination in from one to two hours after milking. We never turn them out in winter or spring till mild weather insures a continuance of growth, and the full allowance of dry food is given till then. With the bran we are now giving sliced Carrots at the time of milking, or twice daily. The quantity of bran is from one to two gallons, and the same of Carrots to each cow, according to size and condition, which also affects the use of chaff. For example, to a delicate Jersey a full allowance of bran, Carrots, and a few crushed Oats may be given, while to a big shorthorn or crossbred cow a mixture of bran, Carrots, and chaff will suffice. It is well to be particular about having the Oats crushed and seeing that a given quantity only is used. One of the best cowmen we ever had could not be made to see the importance of crushing Oats till we showed him how frequently uncrushed Oats passed through the cows' stomachs undigested.

So far as is possible the calving of cows for the dairy of the home farm is so managed that at least one cow calves in each month of winter and spring in order to impart freshness to milk and butter. Dear-bought experience has repeatedly shown how important this is, for if there is no calving till spring the cows become "stale," and the butter becomes pale in colour and of bad flavour. Calving in winter and early spring happens while the cows are having what may fairly be termed a dry food diet, and it is precisely while they are so fed that there is much risk of milk fever. To insure safety from this so frequently fatal disease crushed linseed is used for a week or two before and after calving, a gallon being given in the morning and the same quantity at night, care being taken to soak it for twelve hours before use. This



WINTER DIET.

To dairy cows we assign the first place in our dietary, because dairy produce is affected by it in both quantity and quality. Sweet, wholesome, nourishing food, and plenty of it, must be given them in order that a full flow of milk may be

keeps the bowels open and renders the cows quite safe; but there must be a steady use of it morning and night, and no fitful careless practice, giving the linseed or not, as we may happen to think of it. In summer and early autumn, when the cows have plenty of grass, the blood is pure, and no linseed need be used.

We have not mentioned Mangolds among articles of winter diet, and must call attention to them as being of special value from the beginning of the new year onwards for the next four or five months. Failing a supply of Carrots they may be used from the present time, provided the roots are pulped, mixed with chaff, and left in a vat till slight fermentation has begun. Cabbage, too, now and onwards, is good if used in moderation. We by no means approve of extremes in this matter, and only use enough of such food to impart a wholesome degree of freshness and variety to the dietary without running the risk of spoiling the flavour of the milk. Silage was used successfully last winter, but we must own that the weather was so favourable for haymaking this summer that we have double our usual number of hayricks, but the silo is empty.

(To be continued.)

WORK ON THE HOME FARM.

The old sheep, principally crones, taken from the breeding flocks that were folded upon a second growth of Clover have thriven so well that we are sending weekly batches of them to market as fat sheep, and so far the prices realised are remunerative. We are now passing two flocks of such sheep over some rough pastures in folds, giving them 2 lbs. per head of crushed Waterloo cake, with a plentiful mixture of chaffed hay and barley straw. This plan answers admirably, the whole of the grass being eaten off closely and the pastures left in admirable order for a new growth. The most abundant plant in these pastures is the free-growing and nutritious Cocksfoot (*Dactylis glomerata*), of which we may rely upon a free, strong, early growth in spring, and as there are many loose stones upon it an early opportunity will be taken to have them picked off. Acorns are so plentiful again this year that a large quantity will be picked up and stored for winter use among the sheep. Glad are we to say that the Mangolds are at length cleared from the fields and the heaps made secure for winter. Heavy rain has somewhat hindered this work, as it has Wheat-sowing too. We are, however, so nicely forward with our ploughing and sowing, that a few fine days will enable us to get through with it. Drains are being put into wet land upon three of our farms where the land is both wet and poor. We quite agree with "W. M." that a hard substance put upon the drain pipes insures speedy and continuous action, and we are also entirely at one with him as to the value and importance of burning heavy soil for such a purpose, as well as for mixing as a mechanical agent in the soil. Apart from the question of burning for drainage, we have long advocated the paring and burning of foul land, applying the ashes so obtained as a dressing of manure for the next crop with highly profitable results. To those of our readers who intend having draining done this winter we strongly recommend deep rather than shallow drains, because we have not only to relieve the soil promptly of superfluous water from the surface, but also to prevent the ascent of water by capillary attraction from the subsoil to the surface. It is this latter reason for deep drains that is so frequently overlooked, and yet we know how quickly and persistently water rises and spreads in the soil, and how soil so water-logged remains chilled and inert, and no matter how freely we apply manure to it, the growth of crops in it are slow and the yield unsatisfactory. First of all let us be very careful in coming to a decision as to the necessity for drains, and then let our method of doing the work be as thorough and efficient as possible.

DRAINING.—"W. M.'s" remarks are admirable in theory, and if he can tell us how to burn clay into ballast at a shilling a yard I, for one, should adopt his advice in practice. I have tried in vain to get brick-makers about here to take a contract for burning clay (it is good red brick clay) into ballast at a reasonable price. They say it cannot be done. Coal here is about 10s. a ton.—C. W. D.

BALLAST BURNING.

BALLAST burning, its value to agriculture, and the method of conducting it, are subjects practically unknown to the farmer or land-owner, and yet with the abundance of coal we have in this country there is no reason why everybody interested in the improvement of the land should not look to a ballast heap as a source of profit, as certainly as he contemplates the familiar muck-heap.

The art of ballast-burning is exceedingly simple, depending for its success on the fact that all earthy matter is combustible, and that an apparently inert mass of damp clay contains elements which under proper conditions will burn, the result being that tenacious clay is converted into an insoluble, hard, and porous substance, whilst various earthy alkalies, more or less present in all clays, are separated from the clay during the process of burning, rendered soluble, and therefore able to perform immediately their function of stimulating plants with which

they may be brought in contact. We shall also see that there are many incidental uses for ballast upon a farm.

First, as to the method of burning. The implements required are a stout iron rake about 10 feet long and three-quarters of an inch thick, it should at least have three teeth; also a poker of the same length and thickness. A considerable quantity of the clay to be burnt is heaped up round a circular space, in which a fire is lit. At least 2 cwt. of rubbly coal should be employed to start this fire, and when the coal is well alight it should be covered to a depth of 3 inches with clay chopped into lumps about half the size of an ordinary brick. On the outside of the heap a dusting of small coal must be thrown; sufficient small coal to make the heap look thoroughly grimy is ample, for an excess of coal is a disadvantage. At the expiration of about twelve hours this heap will be burnt through, and it will be ready to pull down as soon as no smoke can be seen proceeding from it. When it is so ready a man with a shovel goes carefully round the base of the heap, throwing on one side the unburnt clay at the bottom of it; he then takes the heap down on to the base he has thus cleared, sprinkles the whole with small coal, then again puts on a coating of clay about as thick as before, finally dusting the heap again with small coal. This process goes on daily until the heap has attained considerable dimensions, say until there are 4 or 5 yards of clay burnt. When this is the case the layer of clay put on may be made thicker, until when there are some 20 yards of clay burnt the layer daily added may be at least a foot thick.

A few precautions must be observed. First, the wind must not be allowed to blow fiercely and continuously upon any particular part of the burning clay. This is easily prevented by shooting the clay as dug in a circle round the fire, and putting on the top of this circle hurdles wattled with straw. Second, when the fire is raked down every morning or evening coal must be put on the bottom of the burning heap more plentifully than on the top. Thirdly, the heap must be kept as perpendicular as possible, or there will be waste of fuel. The poker is used to regulate the angle of inclination of the heap before it is raked down, and also to ascertain if by any mischance the clay is burning irregularly.

When about 50 cubic yards of clay have been burnt it will no longer be possible to maintain the top of the burning heap in a conical shape; it must be made flat in the centre, rising gradually to the outer rim like the crater of a volcano.

Where limestone occurs in proximity to the place of burning, 1 yard of that stone may be thrown on to the fire to every 6 yards of clay. Quicklime will thus be produced without any expense other than that of the stone. In raking down daily a burning heap containing limestone, care must be taken not to rake down that stone. It must be allowed to remain as high up in the fire as possible.

I have already pointed out the great utility of ballast for drainage purposes, and of the fine stuff that is found in the heap as a manure for Potatoes. Ballast is also most valuable for road and path-making as a foundation on which to put harder material. It is also invaluable for building cottages; a mixture of six parts ballast, one part sand, one part cement or good hydraulic lime, well wetted and turned over three or four times, forms an exceedingly hard concrete. Any intelligent carpenter can fix boards between which this concrete may be filled, and when set the boards are removed, leaving a solid, inexpensive, and imperishable wall. I need scarcely say that a silo built of such walls, rendered with a mixture of good lime and sand, would be absolutely air-tight.

Small coal is the best fuel for burning ballast, but cinders, coke breeze, sawdust, may all be used with perfect success.—W. M.

OUR LETTER BOX.

Bromus giganteus (T. S.).—This forage plant will not usually produce like Italian Rye Grass when the imported seed is sown in the autumn and early spring months; and as summer forage we prefer Giant Sainfoin or Lucerne, both for quantity and feeding value, the latter especially when a quick succession is required as green fodder for dairy cows. There is, however, always the question of soil to be considered, and we therefore recommend a trial of these four sorts to ascertain which is the best.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
1885. October.	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	25 29.679	41.0	38.8	W.	46.5	52.7	36.3	82.8	29.9	0.176
Monday	26 29.124	52.3	51.7	S.W.	45.8	52.2	40.4	86.9	30.8	0.670
Tuesday	27 29.315	46.7	42.6	N.W.	40.9	52.3	45.2	90.0	40.2	—
Wednesday ..	28 29.512	42.3	39.0	S.W.	45.6	49.2	37.2	82.4	31.0	0.010
Thursday	29 29.780	44.5	41.4	N.	45.0	51.4	40.1	83.1	34.7	—
Friday	30 30.038	36.2	35.9	N.	44.6	45.1	33.8	51.2	2.1	0.512
Saturday	31 29.379	44.5	41.3	E.	44.5	54.2	35.7	74.7	32.6	0.287
	29.547	43.9	42.0		45.6	52.0	38.4	78.7	32.3	1.955

REMARKS.

25th.—Fine throughout.
26th.—Rather wild, alternate heavy rain and bright sunshine; fine evening.
27th.—Fine and bright.
28th.—Fine but cool; drizzly evening.
29th.—Fair.
30th.—Fog in morning; cloudy afternoon; damp evening.
31st.—Heavy rain from 2 A.M. Rain at intervals all day, with gale in evening.
The heavy rain of Saturday has made this a wet week, though there was much bright weather in it, therefore the range of temperature was rather large for the season.
—G. J. SYMONS.



COMING EVENTS

12	TH	Lindfield, Walton, Portsmouth, Teddington, Staines, and Tunbridge Wells
13	F	Reading, Huddersfield, Canterbury, Cheshunt, and Exeter.
14	S	Ramsbottom.
15	SUN	TWENTY-FOURTH SUNDAY AFTER TRINITY.
16	M	
17	TU	Lincoln, East Grinstead, Yeovil, Devizes, Manchester, and Winchester.
18	W	Northampton, Bristol, Earton, and Birmingham.

PROPOSED INTERNATIONAL HORTICULTURAL EXHIBITION.

A LARGE meeting of representative horticulturists was held in the Music Room at South Kensington on Tuesday last, on the invitation of the Council of the Royal Horticultural Society, to take into consideration the proposal to hold a Great International Horticultural Exhibition in 1887.

The chair was taken by Sir Trevor Lawrence, Bart., M.P., President of the Society, supported by Members of the Council. Among those present we remarked H. J. Elwes, Esq.; W. Sowerby, Esq.; Bruce Findlay, Esq.; A. H. Smee, Esq.; W. B. Kellock, Esq.; Dr. Masters; Shirley Hibberd, Esq.; Messrs. O'Brien, W. Paul, John Fraser, George Paul, Harrison of Leicester, Pearson of Chilwell, Bunyard of Maidstone, Rivers of Sawbridgeworth, Cheal of Crawley, B. S. Williams, H. Williams, Woodbridge, &c.

After some introductory remarks by the President, setting forth the desirability of promoting a Great International Exhibition in 1887, he called on Dr. Masters, who had moved the adjournment of the last meeting to move the first resolution, which was as follows:—

"That in view of the great and increasing importance of Horticulture, and in order to preserve the high reputation in which British Horticulture is held by other nations, it is desirable to hold at no distant date an International Show and Congress of Horticulture in the widest sense of that term; and that the year 1887 being the jubilee year of Her Most Gracious Majesty the Queen, would be the most fitting time for such an undertaking."

This was seconded by Mr. Watts of Wiltshire and carried unanimously. The second resolution was proposed by Mr. Shirley Hibberd—

"That should Her Majesty's Commissioners of 1851 be prepared to afford adequate facilities, such a Show and Congress would be most advantageously held on some part of the Commissioners' grounds at South Kensington, provided that any use which the Commissioners propose to make of the rest of the grounds during the year 1887 be found to be in harmony with the character of the projected Show and Congress."

This was also carried unanimously. The third resolution was—

"That this Meeting requests the President and Council of the Royal Horticultural Society to take measures to ascertain the views of the Commissioners of 1851 on the matter, and assures the President and Council that should the proposals of the Commissioners be of such a nature as to afford reasonable hope that the Show and Congress may be carried out in a manner worthy of British horticulture, no effort shall be wanting on the part of those present to secure the success of the undertaking."

Proposed by Mr. Wm. Paul, seconded by Mr. A. H. Smee, and carried unanimously.

The fourth resolution, moved by Mr. Harrison of Leicester, and seconded by Mr. Cheal of Crawley, was as follows:—

"That this Meeting do now adjourn till such time as it shall be summoned by the President and Council of the Royal Horticultural Society, in order that the results of the negotiations with the Commissioners of 1851 may be laid before it."

This was also carried unanimously.

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A much more enthusiastic feeling seemed to prevail at this meeting than at the previous one, from the fact that the Exhibition is likely to be incorporated with whatever project is intended to be carried out under the auspices of the Royal Commissioners in celebration of Her Majesty's jubilee in 1887. We shall have some remarks to make on this subject next week.

GOOD PEARS.

Good Pears, and especially late varieties, are quite as much appreciated on the dessert table as Peaches or even Grapes are, but in many gardens late Pears do not receive the attention they deserve. In many cases the trees that supply fruit of these are old decrepit examples, and the fruit they produce is small in size, cracked, or otherwise miserable in appearance, and it cannot be expected under such circumstances that the flavour will be good. If gardeners would only bestow half as much attention on late Pears as was formerly spent on Peaches when they were grown more extensively on open walls than they are at the present time, we should not hear so many complaints against certain varieties as we are now in the habit of hearing.

Many varieties of Pears are often and truly described by gardeners and others as being of the first quality for dessert; and the same varieties are often as much disparaged by others. Judging by the Pears exhibited at the Pear Congress, and the numerous errors in nomenclature, it is quite evident that many varieties that are described as being first-class in quality at different times in the horticultural press, and then by others quite as much disparaged, cannot always be true to the name they are described under, for if they were true we should not have so much difference of opinion on certain varieties as we now have. For instance, in one collection I noticed that small and second-rate October Pear Eyewood named as Josephine de Malines, which, as any gardener knows who has the true variety, is one of the most delicious late Pears we have. In this very collection there were thirteen or fourteen dishes untrue to name out of twenty-four varieties; and in other collections we noticed third-rate Pears with the names of first-class varieties.

Soil and climate, we are aware, have a great influence on Pears, but it is quite certain that soil and climate alone will not always insure Pears becoming first-class in size and quality, as good and poor samples were sent to Chiswick from the same district, so it is quite evident that soil and climate, however good, will not produce first-class fruit without cultural attention. Many persons who visited the Conference with the intention of getting a list of the "best," were no doubt puzzled which to select, and that is not to be wondered at, for size and appearance in Pears is no criterion of quality, as it is more often the other way.

Having a fair knowledge of most of the good and useful Pears in cultivation, a list is appended of varieties that I have found first-class in flavour and fit to put on any dessert table; and, this being a good Pear year, I will invite others to send lists, so that we may discuss the merits or demerits of any variety; and if there is any doubt over the name of any variety under discussion, those who send lists can also send a fruit to the Editor, who would, I feel sure, endeavour to give its correct name. The following I consider good varieties:—Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Madame Treyve, Beurré Superfin, Louise Bonne of Jersey, Fondante d'Automne, Beurré Hardy, Comte de Lamy, Gansel's Bergamot, Thompson's, Marie Louise, Conseiller de la Cour, Glou Moreau, Pitmaston Duchess, Doyenné du Comice, Durondeau, Marie Louise d'Uccle, Emile d'Heyst, Beurre Diel, Beurré d'Anjou, Beurré d'Aremberg, Winter Nelis, Beurré de Jonghe, Josephine de Malines, Marie Benoist, Knight's Monarch, Passe Crassane, Bergamotte d'Esperen, Nouvelle Fulvie, Olivier des Serres, Easter Beurré, and Beurré Rance. The two latter varieties do not come good every season, but they are well worth growing. Easter Beurré,

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although a late Pear, we have found to succeed better in the open than when grown against a south or west wall, but in the north no doubt it requires the benefit of a wall. What do others say on this Pear?—A. YOUNG.

VENNS' EARLY DWARF CABBAGE.

VARIETIES of early Cabbages, like some other things, are no doubt too numerous. However, when such a meritorious Cabbage as the above comes in our way we are bound not only to recognise it but to record the fact. After having grown it for three seasons I am persuaded that it has no superior. Among the many varieties we have grown this is the earliest, the dwarfiest, and the hardiest, and so true is the stock that every plant is the very counterpart of its fellow. Another pre-eminent quality is it will not prematurely run to seed. Mr. Venns has frequently sown seed of it in March and allowed the plants to stand in the seed bed all summer, planting them out in the autumn, and not one of them has ever "bolted." It is of a most distinct character, and is easily known among other varieties.

In the autumn of 1883 I had the pleasure of sending some plants of it to Mr. Muir, Margam, who has great experience with vegetables new and old, and in the *Journal of Horticulture*, May 29th, 1884, Mr. Muir writes of it thus:—"It is the most compact-growing, earliest, and best of all our spring Cabbages this season. Not one of the plants bolted, and every one formed a massive head of fine quality. It is very distinct, and is certainly meritorious enough to be distributed as new."

I feel sure it will become one of the most popular of early Cabbages. To growers for market it will be quite a boon, as it attains to a fine size, turns in quickly, and has a taking appearance. This variety is in the possession of Mr. P. Venns, gardener to T. Tate, Esq., Allernburn House, Alnwick, by whom it has been selected and saved with the greatest of care for several years. I am so highly pleased with it that I have advised Mr. Venns to distribute it, and seed will shortly be offered in the advertising pages of the *Journal of Horticulture*.

I may add that I have not the slightest interest in the distribution of this variety, my only object in writing being to see a sterling article put into the hands of the public; and as vegetable-growing has been quite a fancy here for many years I am not without experience in judging on this matter.—JOSEPH OLIVER, *Eslington Park Gardens, Alnwick*.

ANNUAL MEETING OF THE YORKSHIRE ASSOCIATION OF HORTICULTURISTS.

ADDRESS BY THE REV F. D. HORNER.

[At the last annual meeting of the above Association, held at the rooms of the Paxton Society, Wakefield, the Rev. F. D. Horner delivered an interesting address upon the general objects of the Association, and this was supplemented by a lecture on the Auricula. We have been favoured with the MSS. of both these, and as they are of far more than local interest we present them to our readers.]

(Continued from page 398.)

THE earliest known florist varieties whose names have survived are a green edge and a white edge that were alive in 1757. Their names, Rule Arbitrator and Hortense, do not convey much meaning to us now. We only gather that, thus early, the grand class distinctions of edge were by that time attained and marked; but richness, decision, and purity, not common even now, were presumably far less developed than in the green, grey, and white-edged flowers. To look back through five and twenty years is to come to early days in the florist life of most of us, and all the great flowers in the three edges which we had then inherited were but three or four in each class. In green edges, always accounted first, by rarity, difficulty, and power, were Leigh's Col. Taylor, Booth's Freedom, Page's Champion, and say Litton's Imperator. In the greys, Old Ringleader (Kenyon), Lancashire Hero (Lancashire), and Geo. Lightbody, then a seedling of Mr. Richard Headly's only just about to come into circulation. In white edges, Taylor's Glory, Heap's Smiling Beauty, Ashworth's Regular.

The selfs of the period had the beauty and softness of colouring that these flowers seldom lack, and Campbell's Pizarro

was the coming champion, but none of them was perfect. Selfs are always largely produced by seed from the edged varieties, and it was supposed from this, that in trying for edged ones, selfs would abundantly come by the way and be prizes thrown in for nothing. It was by no means so. They are not to be thus lightly won. As a matter of fact I have never, to my knowledge, raised a first-rate self from edged parentage. All my best have been from carefully crossed seed of self parents. I do not say it has never been, or may never be, that a green edged flower may give a good seedling self, but an edged flower does not seem to know what a good self ought to be, judging from the many wild guesses and attempts over which it wastes such quantities of its seedlings.

In speaking of the properties of the florist Auricula, I will mention at the same time the faults and difficulties that have stood in the way. Some have of late years been overcome, notably that of the central notch in the petal of the self. The perfectly smooth round petal is a great point of beauty, and no self now not "rose-leaved" will hold any place as a first-class flower.

The pip or disc of the flower should be circular and flat. This is the best form for displaying the peculiar beauties of the Auricula. A conception of it in a diagram may, without doubt, look stiff and artificial enough; but it is not so in Nature, where every touch of softness and fulness, and every display of feature is added on those lines of beauty that man can imagine, but to which he cannot give the gentleness and touch of life. Immediacy of size in an Auricula is no magnitude of grace. No flower that I know suffers so much loss of beauty and refinement for being overgrown, or constitutionally big, as the Auricula. If ever a bloom is as large as a crown piece it is irremediably coarse. The size of a half-crown is too much, and that of a florin looks quite enough. At a shilling it begins to look small, and sixpence is too little. The number of pips that a plant will carry and finish well depends upon its vigour. A self will always carry more than an edged variety. The plant is often more vigorous, and the footstalks on the stem often longer and more yielding.

Eleven or twelve good pips are quite enough for a self to carry well, while less than seven will look a small truss. Seven good ones on an edged variety are much more for it than the like number on a self. Five upon an edged variety begin to look a small truss. Nine good pips will form a very handsome one. Any more that are left in will perhaps either overlap others or show inequality of size and weakness in one or more important points.

On an Auricula truss every pip has a wonderful individuality, and this must be preserved by not suffering it to be crumpled and blurred by overcrowding.

A very important feature of each flower is its tube, which should be circular and golden, well enriched with its coronet of proud gold-dusted anthers around its mouth. Faults of tube are pale green colours instead of gold or fading tones of yellow, as also a serrated edge and too great width and an irregularity of outline.

Next upon the flower's face lies a circle of white meal—technically the paste. This should be circular, dense, sharply cut, smooth, and snowy white. Its faults are thinness, narrowness, and waviness of outline. A bad paste and poor tube are both of them grave faults, visible through any brilliance of other properties. The golden tube and brilliant paste ought to be points in every flower. They are constant properties common to all the classes, and should be strong in all.

The next circle of colouring outside the paste is the ground or body. Colour, a velvety black, violet, chocolate, or maroon, or a tint difficult to describe.

It is a very beautiful feature and intense contrast to the paste. It should be perfectly free of any speck of meal, a velvet band, and solid on its inner edge near the paste. On its outer edge it flashes with pencillings of heavier or lighter style towards the edge of the flower; but these pencillings should in no part reach the petal rim. Faults of body are numerous. It may be too narrow, and look scratchy—too broad, and dash into the edge. Its colour may change as the flower ages, and the velvet may die off upon it prematurely. Meal may be scattered over it and make it impure.

The edge itself is a most beautiful and coveted feature in the Auricula. It is the outermost ring of colouring, and is a circle of pure green, or pearly grey, or snowy white, according to the total absence or varying depth of meal upon it. It is a difficult property, in the green and white classes especially, and its faults are not being pure from dots of meal, or from a tendency in some white edges to lose its whiteness for a damaging tint of yellow. Sometimes it is not broad enough, and less often too broad.

All the zones of colour on a pip should be well balanced. That is the idea of the proportion they should occupy on the flower. The eye can quickly tell if one zone or another trespass beyond its limits or fall short of them.

The full culture of this fascinating flower might be tedious to enter into here where so many of my hearers will not be Auricula growers.

I will therefore confine my remarks on this head within, I hope, convenient bounds.

The plant is perfectly hardy against cold, and all the protection we give it is either to keep off wet at unseasonable times, or to prevent its delicately constituted flowers from being ruined by weather, wind, and insects, such as bees.

It rests in winter and in summer, and grows most actively when the days are lengthening and shortening.

As to situation, I grow it in a south aspect from October to May, and in a northern one from May to October.

As a plant requiring but a small pot it is of course easily handled. Three-inch to 4½-inch pots will grow all in a collection.

Do not be dismayed at anything you may have heard about composts. There still lives in history the story of one who tried Auriculas in so many curious composts that the neighbours complained of the nuisance his raw materials were.

Someone suggested that he might keep a few geese—that would be profitable both for table and garden uses, goose droppings being one of the less noisome ingredients for Auricula composts. However one morning the geese got out into the garden and among the Auriculas. There was soon not one of them left, and so instead of being a means to an end they were the end of his means!

I have found very simple natural composts grow Auriculas well. I have never used a richer than equal parts of turfy loam, leaf mould, and sand (rough), or stiff loam, old hotbed, and sand; often kitchen garden soil, leaf mould, and sand.

I think the plants like firm potting, and certainly abundant drainage and charcoal in the soil if it be extra heavy. I always repot my plants "early"—i.e., just after the bloom, and in summer keep them cool and moist; in winter airy and comparatively dry. But they must have no coddling or be left to pine for fresh air. The staple enemy they have in the way of insects is green fly, and we are never at peace with him.

Offsets I take off, as they can be removed with any heel to them. Those only thus fit after October I preferably leave till the spring start in February. They need not be rooted at the time of separation. Seed I have sown any time between ripening and the following spring. It is very irregular in coming up, and I have young plants still appearing in a pan that will have been sown three years ago next spring.

If there is a plant that will thrive under difficulties of town life the Auricula is one, though of course, like all others, it prefers the country light and air.

I fear I have undertaken to say more than time permits me to say thoroughly. I am conscious of having grown rather sketchy in this paper, but I had rather disappoint you with too little than weary you with too much.

The one fault could be remedied if need were; the other not.

POTATOES.

"COUNTRY GARDENER'S" exceedingly pertinent remarks in the leader of 15th October point to the desirability of information as to the various properties of these noted prizetakers which year by year come before the public with their dainty proportions, but which, as he remarks, are doing so little for the public weal. Productiveness with quality are, he says, the essentials for the national food supply. To these qualifications I would add another too much overlooked—viz., relative exhaustion of the soil, and to this the weight of marketable tubers to be derived from a like number of picked shaws grown in proximity. The mere production of huge show Potatoes is of little importance if uneatable.

Unsuccessful as a contributor to the Chiswick experimental efforts, I have been led to consider the properties of my seedlings relatively to the field sorts most in vogue around in this the cradle of the famed Champions, the coast of Forfarshire.

In 1878 seeds were gathered from my own garden and the fields around, the parentage being Regents, Victorias, Dalmahoy, Champions, and many garden sorts. In 1879 the produce indicated the usual endless varieties of habit of growth, &c. About fifty varieties commenced with have been weeded down year by year to a dozen sorts. Finding, however, in Early Sandringham all I desire for an earliest crop, only three of the numerous kidneys are retained, and for several years the others have grown into field cultivation alongside Champions, Reading Heroes, Dalmahoy, and Magnums.

This district exports extensively to London and the southern ports,

especially in spring and early summer; hence, good keeping sorts fitted for use from March to June are of importance. In my selection the qualifications sought are full croppers (by weight), good boiling and keeping, moderate haulms, not unduly exhausting and clean lifting. All boil equally as well as the above standard sorts, but some of them possess the superior flavour of early days (1830 to 1840) long before disease was heard of. I am able only to give a tabulated statement of the past two years' produce relatively to that of the standard sorts. It points to the peculiarity of this hard dry summer in its sparser productiveness, and is otherwise instructive in that some sorts have been more affected by it than others.

Five picked shaws of each kind in 1884 and 1885 weighed as follows (field culture):—

	Magnums	Dalmahoy	Reading Heroes	Champions
1884	9 lbs			10½ lbs
1885	7½ lbs	7½ lbs	7½ lbs	8½ lbs

Seedlings (cultivated since 1879).

No.	15	18	20	23	27	28	34	37	39
1884	8½ lbs	9 lbs	9½ lbs	10 lbs	9 lbs	8 lbs	7 lbs	9 lbs	12 lbs
1885	7 lbs	7½ lbs	10½ lbs	9½ lbs	8½ lbs	7 lbs	8 lbs	9½ lbs	8½ lbs

The appearance of Magnums and Heroes was all that could be desired, while yet the weights were disappointing, and it may be found their displacement is excessive relatively to other sorts. Champions for the past two years have produced an over-proportion of small sizes, while the haulms of these three standard sorts are very heavy and hence exhausting. This property is avoided in the above seedlings; several of them are almost evergreen, being still green at this date (30th October), and yet they boil well. Potatoes of sorts are like Strawberries of sorts, they have their preference of habitat.—R. B., *Inchbrayock, Montrose.*

THE PRIMULAS.

(Continued from page 397.)

P. ELATIOR, Jacq., the Oxlip.—Accepting this plant in the restricted sense it is comparatively rarely seen in gardens at present, although it is pretty common in copses and meadows in Cambridge, Suffolk, Essex, &c. It may be best described as intermediate between the common Primrose and the Cowslip or Paigle, and hybrids between the two latter species much resemble and are not always readily distinguished from typical *P. elatior*, which is also by many considered a hybrid, and in a broad sense one of the many links between the two species. The chief differences between *P. elatior* and *P. vulgaris* are the former's less inflated calyx, shorter stalks, and inodorous flowers, and from *P. veris* in the colour of its flowers, &c. It has been much confused, and the names by which it has at various times been known would almost fill a page. The following are a few of the principal:—*P. carpathica, Fuss.*; *P. Fluggeana, Lehm.*; *P. montana, Opinz.*; *P. Pallasii, Lehm.*; *P. intricata var. carpathica, Fuss.*; *P. Perreiniana, Flugge*; *P. alpestris, Schur.*; *P. inodora, Hoffm.*; *P. laterifolia, Goup.*, &c. It flowers in April and May, and may be readily established on slopes on the rockery, where its pretty drooping flowers are exceedingly pretty.

P. FARINOSA, L.—The Bird's-eye Primrose is a native of our island, though not by any means plentiful unless in one or two localities, the other stations being local. It has been long cultivated in English gardens, but with varying success; indeed in growing and flowering it well depends chiefly on the care and attention bestowed upon it. It is by no means a strongly constituted plant, and it requires to be watched through the winter, as it is liable to damp in low places. A perennial in nature, it will be found advisable in some localities to treat it as a biennial, that being the course adopted with great success in the case of the Scotch variety, *P. scotica, Hook.* To get seeds, however, is often another trouble, for even this tiny plant is not free from the ravages of a disease. It attacks the seed vessels, which on being collected will be found full of a smut caused by a fungus called *Urocystis primulicola*. When such is found to be the case the plants should be at once destroyed, for though there is no record of the disease attacking other Primulas there is always a danger while such a scourge is in the neighbourhood of the others, and the safest means is to burn the affected plants.

P. farinosa I have found to do best in a bog in rich peaty soil, keeping up the supply by means of seedlings, never depending much on the plants flowering a second year, although we have no doubt in favourable localities they will continue flowering for some years. It grows from 4 to 9 inches in height, carrying a head of pretty rosy purple yellow-eyed flowers, the tints varying much on the different plants. The leaves are obovate spatulate, crenated at the margins, glabrous, and covered with a white or sulphur-coloured meal. It flowers in June and July, and is found in bogs and meadows in Carnarvon, north of England, and Peebles, ascending to 1800 feet. *P. farinosa var. scotica, Hook.*, though quoted a

a species in the "British Flora." I am inclined to consider no more than a variety of *P. farinosa* (of geographical significance). It is a dwarfer plant than the type, deep blue purple flowers, and other minor differences. It flowers June and September, being confined in its distribution in this country to the north of Scotland. Syme states that *P. scotica* is not dimorphic, single plants seeding freely, also that it has three flowering seasons.

P. FARINOSA VAR. *WAREI*, *Stein*.—I place this here to save confusion, though stated by Stein to be a cross between *farinosa* and *scotica*, which is fully borne out on seeing the plant in flower. Stein states that he received this plant in 1876 from Mr. T. S. Ware of Tottenham as *P. scotica*. He considers it the best and easiest of the three to grow, every seed germinating. In the Breslau Botanical Society's herbarium there are two plants from Holland unlabelled, which he thinks to be *Warei*, and in Haage & Schmidt's catalogue for 1882 it is mentioned as *P. muroana* or *norvegica*, which he supposes to be a mutilation of *Warei*. I am inclined, however, to believe that *Munroana* is intended, as the plants we received under *muroana* turned out *P. involucrata*. The leaves of *Warei* are not unlike *farinosa*, unless in the absence of meal, the flower stalk short like *scotica*, as also is the shape of the flower, the colour being between them. It flowered with us in July of the present year. *Stricta*, *Horn.*, is another variety differing little from *P. farinosa*. The following are synonyms or slight forms: *P. oratensis*, *Gusmus*; *speciosa*, *Gus.*; *stricta*, *Gus.*; *denudata*, *Gus.*; *frondosa*, *Janka*; *Hornemanniana*, *Lehm.*, &c.

P. FEDTSCHENKOI, *Regel*.—A new Turkestanian species lately introduced by Dr. Regel of St. Petersburg, somewhat resembling some of the forms of *P. cortusoides*, and equal in beauty to his handsome *P. Kaufmanniana*, also lately introduced under the name of *Kaufmannia Sewerzowii*. It seems to thrive best in a peaty soil in a shady not over-moist situation. We have not seen fresh flowers yet; but in the "Gartenflora" it is said to be equal in beauty to any from the European Alps, and likely to become one of our favourite garden plants. The flowers are of a deep violet-purple colour arranged in whorls one above the other, as in *P. japonica*. It grows about 6 inches or more high; leaves oblong obovate, almost sessile, and hardly crenated. It is figured in the first volume of the "Flora of Turkestan."

P. FLORKEANA, *Schrad.*—This is figured in *Lehm.* "Monograph Prim.", 8, tab. 81, and also in *Reichenbach's "Flora Germanica"* (from which the drawing, fig. 64, has been prepared), where it is described by Schott. It is an extremely interesting hybrid between *P. superglutinosa* × *minima*, *Kern.*, but is described as having the foliage of *minima* and the flowers of *glutinosa*, and evidently varies a little under cultivation, as our plant has much larger leaves than *minima* that in all but the serratures resemble those of the other. It is an easy plant to grow, indeed one of the easiest of this class, bearing much sunshine, and flourishing well even in exposed places, which, by the way, should always be chosen for this plant. The soil should be composed of rough granite, sand, or small pieces of stone, with equal parts of peat and finely sifted leaf soil. The leaves are cuneate, tongue-shaped, dentate or sharply serrated, and about an inch in length. Scape a couple of



Fig. 64.—*Primula florkeana*
(*Reichenbach's Flora Germanica*)

inches high, bearing several deep lilac or almost violet flowers, surrounded by a foliaceous involucre. It grows with its parents on the Swiss and Tyrolean granite Alps at about 7000 feet. Syn., *P. minima* var. *hybrida*, *Reh.*; *P. hybrida*, *Gusmus*; *P. intermedia* *Tratt.* It is easily raised from seed.

P. FLORIBUNDA, *Wall.*—A comparatively new species, having been introduced to cultivation only two years from the Royal Botanic Gardens, Edinburgh, the home for Indian alpine. It is a near ally of the Arabian *P. verticillata*, *Forsk.*, and included along with it in the section *Sphondylia* by Duby in De Candolle's "Prodromus." Although of recent introduction it is now by no means rare, as it ripens seed with the greatest freedom, which germinate readily either when gathered or in the spring; and by this means, saving and sowing from the plants that have been subjected to the hardest treatment, it may yet be possible to get *Primula floribunda* sufficiently hardy to withstand our severest winters. From what we have already seen of it the varying propensity seems to be great—almost double, semi-double, and different-sized and coloured flowers, all the result of a single sowing. My experience is not, however, sufficient to warrant their constancy. The seed, sown as

soon as ripe in the autumn, quickly germinates, and the plants undisturbed may be kept in a cool frame during winter, when they will be found ready for planting out in spring. Treated in this way and planted in the rockery they flower all through the summer, and in pots make fine plants for greenhouse decoration, enhanced by their almost incessant flowering. If planted on a dry well-sheltered spot on the rockery they may survive a mild winter, but a severe one will serve them as it does *P. verticillata* and *P. Boveana*. It grows from 4 to 8 inches high, bearing from two to six or more whorls of about a dozen flowers, golden yellow, over half an inch in diameter, and very ornamental. The flowers are on short stalks surrounded by short ovate leafy bracts. The leaves when fully grown are about 6 inches long, oval-shaped, pointed, coarsely toothed, and having reticulated veins. They are covered with a thick glandular pubescence. Native of the Himalayas, from 2500 to 6500 feet, from Kumaon to Kashmir; also in Simla, where it grows at 2700 feet on rocks and near springs of water. Syn., *P. obovata*, *Wall.*; *Androsace obovata*, *Wall.*, *MSS.*—D.

(To be continued.)

FRUIT AND PLANT HOUSES.

(Continued from page 334.)

ASPECT is also important in relation to light and heat in the construction of houses for the cultivation of fruit or plants. If the house be a lean-to it will have the most light and heat when the sun is in a direct line with it at noon, or when the aspect is due south, and this holds good whatever be the angle of elevation. If the angle be 45°, then the sun will be vertical and the house derive the most benefit from the solar rays when the fruit of, for instance, Vines, Peaches, Figs, &c., subjected to early forcing is advanced for ripening. This accounts for houses with a sharp pitch, and lean-to's against a south wall being most eligible for the early forcing of those fruits, a matter, I think, too often disregarded in the erection of structures of this kind at the present time. There is nothing, however, without its disadvantages, for if we gain a certain benefit in early summer we have to contend against the solar influence when the plants need rest. The vertical sun (I mean vertical, or at right angles to the glass) causes what all cultivators are careful to avoid—viz., over-ripening of the wood and buds, as this is almost certain to result in premature development of growth and prove fatal to next year's prospects. This is guarded against by having houses employed for early forcing with moveable roof lights, and to which I shall have occasion to refer again presently.

The advantage of the lean-to with a sharp pitch against a wall with a south aspect is considerable, the chief of which is a maximum of light. Another is that the north side, being of brick or other material, does not rapidly conduct heat from the interior, and an elevated and steady temperature is maintained most economically. It follows that if a lean-to with a sharp pitch, or say 45°, is good for early forcing it will also be most suitable for houses in which fruit is to be ripened in late summer, as we get in September precisely the same conditions as we do in April. For this reason I consider houses with a sharp pitch most suitable for late or unheated fruit houses. But we have to contend against the sun in the spring bringing on the trees or blossoms too quickly, and I only know one means of preventing this—viz., by moveable roofs, so as to prevent a too early development of the blossoms.

Then if we want our fruit crops ripe in summer, the aspect being the same or south, we are content with an angle of 30°, which I think the lowest elevation that ought to be used as a safeguard against drip and to carry off rain, as we then have plenty of light and heat, the difficulty being rather to guard against its scorching rays when the foliage is tender, and in autumn from taking the colour out of the Grapes to be kept, whilst our crops ripen. It does not matter much if we have the roof with an angle of 35° when we wish the fruit ripened from June to the middle of September, but I do not think the angle for general crops ought to exceed that elevation, as our present system of little wood and large panes of glass modifies our ideas of angles considerably.

An east aspect is bad, and a west one little better for a lean-to house, as the rays of light are for the most part reflected, and we not only have less light, but as less light is less heat we have the deficiency of the latter to make up artificially, consequently houses on those aspects are not so economical as those with south aspects. If the temperature of a house with a south aspect is influenced by the angle of the glass so also is that of a house with an east, west, and north aspect; if flat, the east and west, also north, are hottest at mid-summer—i.e., less rays are reflected; therefore, if we construct houses for coolness the angle should be such that most rays are reflected when the sun is most powerful. North houses ought, therefore, to have a rather sharp pitch, alike to throw off wet and prevent drip as to throw off the sun's rays, and so answer as retarding

houses or suitable for the successful treatment of plants injuriously affected by a hot and dry climate, as, for instance, cool Orchids and the Himalayan Rhododendrons or Ferns.

Aspect also considerably affects span-roofs both as regards their light and heat. If the span or the ends of the house run east and west, then we get half the surface with a south aspect, through which the sun's rays pass as in a lean-to with a similar angle and aspect, whilst the other half is facing the north, and the rays of light and heat are for the most part reflected. Thus we have the south side making the most of the sun's rays, whilst the north is cooling or wasting it, and the deficiency of sun heat has to be made up by artificial means; in fact, the economising of heat being the object, we lose fully one-third more of the sun's heat by having a span running east and west than would be the case were the same space covered with a lean-to facing due south. If we reverse the position and have the ends of the span north and south, then we secure sun heat during the best part of the day. The sun's rays are nearly as powerful at 9 A.M. as at noon, and there is no diminution of the sun's influence until after 3 P.M. By a span we avoid the scorching noon-day rays and secure a greater uniformity of light and heat; nevertheless, we lose much more light and heat than if we had the house of one uniform slope to the south, and in consequence more fire heat is necessary for the span-roof house than for the lean-to. I am fully aware that we do not employ more heating surface for a span than a lean-to, but we must bear in mind that, although the superficial area of glass required to cover a certain area with a span-roof is precisely the same as when the roof is a lean-to, the angle being identical, yet the height of the span-roof is only half that of the lean-to, and the space is lessened in the span proportionately. It takes less artificial heat for a lean-to than a span, the latter being less influenced by solar heat, which can only act upon one side at once. Although we lose heat in span-roofs, the roof being lower or more uniform than in the lean-to, they are very suitable for plants, as light being admitted on both sides equality of growth is more easily maintained, and there is also a further advantage in the span-roof—viz., the heat does not accumulate so much in the upper part as would be the case were one slope continued so as to form a lean-to. This latter consideration appears the only advantage sought in unequal span-roofed houses, and I take it as a decided one, especially over the lean-to, in preventing the accumulation of heat at the upper part, and when they have the longest slope to the south they are more economical as regards fuel than an equal span in the same position, owing to there being less glass or cooling surface exposed to the north; hence I consider them very suitable for fruit houses against south walls.

The aspect of ridge-and-furrow roofs is exactly the same relatively as those of span-roofs, and they are employed mainly in covering a large area to diminish the height of the roof, for were the area covered by one span or a single slope the height of the ridge of the span or the back wall must be considerable and ill-suited to the growth of dwarf or even moderate-sized plants. In regard to light and heat, there is a great difference between the ridge-and-furrow and one with a single slope, for though there is the same surface of glass, both being placed at the same angle, yet when the sun's rays are perpendicular to one side of the ridge few of them have any effect on the other side; whereas, in a roof with a single slope the whole of the surface is exposed to the sun, and twice the quantity of its light and heat is transmitted into the interior. The ridge-and-furrow, therefore, is heated as much by the sun as a span-roof, but very much less than by a slope, uniform to any aspect. I therefore dismiss the span and ridge-and-furrow with the observation that they are most suitable for plants where less intensity of solar heat is required, and where uniformity in growth is desired from an equal diffusion of light, also for fruits not wanted ripe until midsummer.

It only remains to consider the aspect of curvilinear roofs, which are similar to those of spans in general principles. If the ends are east and west only one side is having the sun's rays transmitted into it whilst the other is giving it off, and if the ends are north and south the same observations apply as to the span. But in a curvilinear roof we have the glass placed at such an angle that more light and heat is admitted, as the angle is more suited to the sun's elevation at different and all times of the day; hence, curved roofs admit more light than those which are straight. It must, however, be borne in mind that curved lines, if they admit more light and heat, transmit heat more rapidly from the interior, as the radiation is greater from the larger surface of glass than in straight-roofed houses. The angle of a curvilinear roof is, if I may use the expression, ought to be that of 45°—viz., the height of the back wall or to the ridge of a span should be that of the width, cutting off one-third from the width, so as to cut off the upper or flat part of the roof; so that if the house is wanted 24 feet wide and a span, the arc is described from 18 feet, and the width drawn in to 12 feet, half the width of the span, and we then get rid of the flat part of the roof, which is too flat on the full

curve to carry off the rain and drip. Such a house as a lean-to of half the width would be admirable for the forcing of fruits, and the span for a like purpose with the ends north and south when the fruit is required to ripen after midsummer, whilst for growing specimen plants, which ought to have light to their base, there is none better.—G. ABBEY.

ON LIFTING ROSES.

I AM of opinion that Roses are often allowed to remain too long in the same position, and am equally satisfied that even when the same spot is devoted year after year to their cultivation much advantage is to be derived from careful lifting and replanting, especially in cold ungenial districts, where the soil is naturally poor. Last autumn I determined to lift a bed of border Carnations and plant Roses in their place. The Roses I selected for the purpose had been growing in a bed for two years, which I determined to appropriate to the Carnations. After lifting the Carnations I had the bed well dug and enriched with manure and fresh soil. I then dug up the Roses carefully, shortened the longer roots, and replanted them without a moment's delay, with the result that every plant has done well, blooming better than those which were not lifted, and producing sturdier, shorter growth.

The lifting gives a slight check, which is, I am satisfied, beneficial to the health of the plants, and affords an opportunity for renovating the beds with fresh materials. It has also other advantages: it insures the better ripening of the wood, gives a longer period of rest, and retards the starting of growth in spring in an appreciable and beneficial degree. Every rosarian will recognise these advantages on consideration of their likely effects on his Rose trees.

Roses left too long in one place, especially when the soil is properly enriched with manure every year, are apt to grow too vigorously and to get overcrowded with non-productive shoots. My experience certainly is that the blooms on such long-standing trees, though more numerous than on newly planted trees, are distinctly inferior to them in size and finish. My advice is to replant some of the beds annually, and never to allow the trees to remain without lifting for more than two years. The roots will then be kept closer at home, and masses of fibre will be produced instead of long whip-like roots straggling all over the bed. I should perhaps add that I am writing about dwarf Roses (not standards), and particularly about Roses on their own roots. Perhaps I should add I am writing from a cold exposed situation, soil light, in the midland counties.—B. W. E.

NOTES ON CHRYSANTHEMUMS.

THIS has not been one of the best seasons for the well-doing of this autumn favourite, at all events here in Co. Meath. In the first instance we had frost far into the month of June, which injured the points; in fact they did very little from the middle of May until cut down or stopped about the middle of June. From this time they began to do well until the first week in September, when a continuation of strong winds from the west threatened to finish them. Through this I lost Mr. Brunlees, Refulgence, Beethoven of incurved, and Madame C. Audiguier, which I consider one of the very best of the Japanese varieties, at least of its colour it has no equal. Beside others I shall miss these varieties; however I have a very good supply left, looking very promising, the Queens especially, besides Prince Alfred, Lord Wolseley, Mr. Bunn, White Beverley, Lady Hardinge, Mrs. W. Shipman, White Glohe, Jardin des Plantes, Princess Beatrice, and John Salter. Of Japanese, Hiver Fleuri, M. Delaux, Madame Bertie Rendatler, Colibri, Red Dragon, Chinaman, Thunberg, Comte de Germiny, Rosa Bonheur, Dr. Macary, Baronne de Prailly, and Comtesse de Beauregarde amongst others are very promising.

Your able correspondent Mr. Orchard has some remarks respecting earwigs (page 561), but I consider the best guard against this pest is to give the plants a good shake, which will bring them to the ground, when they may be easily captured. This should be repeated every evening at sunset. When housing be sure that every decayed leaf, or any that may be mildewed, be removed. The decayed foliage when dry makes a comfortable home for the earwig.

Another pest I consider as bad, or worse, is the cricket. I have seen flowers destroyed in one night by this. A very good trap is to get some white arsenic, say half an ounce in powder, also a quarter of a pound of lard; mix the arsenic thoroughly with an old knife. When mixed wash some pieces of slate or broken pots, and spread some of the mixture on them, placing them in or near their habitation will soon destroy them; a little sugar is sometimes mixed with it.

Judging Chrysanthemums at some of the shows is no easy task, especially in the cut-flower classes, where there is strong competition. Dahlin is the only exhibition within my reach, and unless better than last it will not be of much account, neither was the judging deserving of praise. When we see reflexed flowers on a board of twenty-four incurved flowers, and this obtaining first prize, also Japanese flowers bearing the name of Large Anemone flowers, I consider it is time there was an alteration.—J. PITHERS.

THOUGHTS ON CURRENT TOPICS.

JUDGING from two or three pages of matter in the Journal last week the Chrysanthemum fever appears to be nearly at its height. There is not much wonder at the enthusiasm which is displayed in Chrysanthemum

mums. Gardens and conservatories would be gloomy now without them; numbers of persons with even small gardens and conveniences can grow them; they flourish in town and country, and no flowers answer to the whip better than these do—that is, show more strikingly the effects of good culture. Left to themselves, or imperfectly grown, they are bright yet small, flat and rough, but with attentive care and under skilful management the incurved varieties become marvels of symmetry, Japanese great mop-like masses of brilliancy, and the Anemones trim pincushion-like rosettes that artificial flower makers vainly try to imitate. The wonderful development of the Chrysanthemum and its great and rapidly spreading popularity is directly traceable to the competition that has been incited by the offering of good prizes at various and increasingly numerous shows. Not that one-hundredth part of the persons who grow plants better than before do so with the view of exhibiting them or their flowers in public; but they have seen what successful exhibitors have accomplished, and become animated with a desire to approach or equal them in the excellence of their work as cultivators. To succeed with many is a sufficient reward, and the determination to excel is in every way admirable. The autumn shows have incontestably resulted in marvellous improvement in this department of horticulture, and they are with few exceptions almost entirely supported by gate money. The promoters of these shows and the managers who make them so imposing as to bring in thousands of visitors with their shillings and pence, are scarcely engaged in an ignoble work. I, for one, applaud them for their endeavours, and regret I cannot more effectually aid them in the arrangements of such great floral feasts as will compel the multitude to come in.

IN reading the accounts of shows, public and private, with descriptions of new varieties one matter puzzles me—namely, the principle on which certificates are granted. It seems to me no light matter to grant such a high mark of honour to new varieties, because these are thereby enhanced in price on account of the great demand that follows for those that receive this official stamp of merit. Certificated flowers should, it seems to me, be undeniably distinct and possess decided superiority in some way, otherwise disappointment will ensue, mistrust be engendered, and a revulsion of feeling against new plants sooner or later created. Over and over again it is stated that a variety that was certificated last year—*La Purété*—is the same as one previously in cultivation—*Mdlle. Lacroix*. A mistake appears to have been made, and many growers seem to know it, yet, strange to say, *La Purété* is recorded as again certificated this season at Ealing. That circumstance appears to require explanation. Is the Ealing-honoured variety the same as *Mdlle. Lacroix*? and, if so, why was the error of last year officially confirmed last week? Perhaps some experts can answer this question. Enthusiasm is all very well, but unless governed by prudence and tempered by caution it may defeat the object its possessors desire to promote. That is my thought on this subject.

MR. HIAM asks me to give my opinion on canker in fruit trees, and then he will publish his reply that he has prepared to “*Entomologist*” which he at present withholds. I have no objection whatever to discuss this important matter, but I think the case will be more complete when Mr. Hiam has favoured with the publication of the reply alluded to. I am somewhat inclined to think there may be something in the theory he advances, of insects causing what is known as canker, but how much it is impossible to say so long as he withholds evidence in support of his case. Therefore, on considering the whole matter, I think I will wait a little longer.

“*A COUNTRY GARDENER*” suggests that I do not examine the articles to which I refer with sufficient care, and read between the lines attentively for clearly understanding the meaning that the writers intend to convey. I am quite ready to plead guilty in that respect, and in this case do so the more readily, since I have elicited a note that in all probability will be of service to many growers of Potatoes for use rather than ornament, and who are bewildered with the overwhelming numbers of sorts that are nowadays exalted as possessing such transcendent properties. Has “*A Country Gardener*” tried the two famous Reds that figure so prominently at shows—the Reading Russet and Vicar of Laleham, and if so will he obligingly state their cropping qualities, table merit, and period of use? I have heard conflicting opinions on them, and so, too, in all probability, have other gardeners who are not above growing Potatoes.

It is not often a more sound, seasonable, and instructive article appears than that by Mr. Bardney last week on pruning and lifting fruit trees. Cutting back the long, strong growths of trees in winter without checking the roots with the object of restricting growth is as vain as attempting to stop the production of steam in a boiler by twisting the valves about and at the same time keeping up a strong fire in the furnace. All luxuriant-growing trees that are exceeding their bounds and bear little or no fruit should be root-pruned now and have their growths suppressed in summer to prevent their encouraging such vigorous root-action as finds expression in exuberant wood that is essentially unfruitful in its nature; but how your correspondent catches “every moth” that lays the eggs that bring the caterpillars that eat the leaves, I know no more than the famous priest who contributed so much to the felicity of the house that Jack built. Perhaps Mr. Bardney will place us under another obligation to him by stating how he plays “old Gooseberry” with all these moths.

“*A KITCHEN GARDENER*” contributes a useful note on early Apples

on page 484. It is referred to because I observe he places three other sorts before Mr. Gladstone in point of earliness. I thought from what I had read that one of the chief points of merit of the “new” G.O.M. consisted in being at least fully abreast of all others, if not in advance; but it appears it is not. It may, however, for all that, be an excellent variety, and it is well to know the proper place of “W. E. G.,” a question that does not yet appear to be unanimously determined. Your correspondent speaks highly, but not too highly, of the good old Keswick Codlin, and if I were to venture an opinion it would be that the old favourite will be hale and fruitful for a hundred years after the large and light Lord Suffield has been “eaten” up with canker. Has “*A Kitchen Gardener*” grown the Domino that was advertised last year by Mr. Merryweather? I have seen trees of it this year wreathed with fruit heavier than that of Lord Suffield, and greener and larger than Keswick Codlin, also equal to either in quality and ready at the same time. I suspect this will prove a valuable Apple that will eventually find its way into most gardens.

BUT I must not forget “Non-Believer.” When I referred to his reappearance after a long absence I used the word *obscure* precisely as it has been applied under similar circumstances to myself. I should as soon think of describing the ex-Premier as an obscure individual as “Non-Believer,” though both may desire to remain in *obscure* for a few months, but not I think for long. I can enjoy a good retort, and even a “palpable hit,” if a fair one, like that in the first paragraph of “Non-Believer’s” rejoinder on page 404. But I do not think a long answer “always” indicates a weak case, as if it did my pugnacious opponent would have demolished me in fewer words. According to his own test, my position is rather strong, which is exactly what I feel it to be. “Non-Believer” has, I perceive, assumed a new character, but let me assure him of the uselessness of his thinking that by putting on spurs, donning a red coat, and brandishing a hunting whip, he can drive me away. I am too old to be frightened by a bogey of that kind. By the way, I wish Mr. Burbidge, or someone, would sketch that scene and send a couple of copies to the Editor for him to forward to us for framing. I think they would be appreciated, at least I can answer for one of them.

SERIOUSLY, I do not think that “Non-Believer” has as yet had anything to get excited about. What is the case? I honestly recorded a thought in half a dozen lines on page 313 on a matter of public interest, in which he was not even remotely alluded to. Thereupon he was tempted to transform my thought into a creed, and that “creed” a “carelessness as to whether the real objects of cultivating flowers or fruits is served or not.” He was thus the assailant, and absolutely without any justification for an attempt, however clumsy, at my personal or professional disparagement. If he had considered for a moment he must have known that “topics” exist before they are commented on, and a solitary “thought” cannot be legitimately magnified into a creed, whether it be good or bad.

As to the strained nonsense, for I cannot call it anything else, about the degradation of horticulture being embodied in the efforts to make exhibitions financially successful by attracting the public to them, and thus increasing the amount taken in admissions or gate money, it need only be said that if there were no money there would be no shows; and just as horticultural societies are supported with funds, just in the same proportion do they “encourage horticulture as a useful and humanising industry.” The Manchester and Shrewsbury Societies may be cited, among others, as conclusive examples of this; while other societies that could be named dwindle away by lack of support, and cannot—to quote “Non-Believer’s” words, which he quoted from somebody else—even “promote a taste for flowers and habits of neatness amongst the humbler classes.” Sentiment is all very well, but we have to deal with facts. Money, which “Non-Believer” cannot afford to despise, is the foundation of success in all good objects, and I heartily wish that every horticultural society had a good guarantee fund before making a show. That is what is wanted, and when it is non-existent “gate money” must perforce be relied on by the managers.

THE success of all industrial exhibitions, including those great ones at South Kensington, is absolutely dependent on gate money; it is the same with exhibitions of horticultural products, and if the directors of these did not study to make them so diversified and excellent as to attract the greatest possible number of visitors, and thus obtain the greatest amount in admission fees, they would of necessity fail, and the desirable spread of horticulture would not be advanced but retarded. The last provincial show of the Royal Horticultural Society was a case in point; gate money failed, and the Society was temporarily crippled. It will depend mainly on “gate money” as to whether the Great International Exhibition now projected will, if it be held, prove a success or failure, and it is certain those who are responsible will so make their arrangements as to induce a great influx of visitors as contributors to the necessary funds. The last great International Horticultural Exhibition in 1866 could not possibly have ended as it did had it not been continued for five days beyond the prescribed time. The money taken on the first three days was so inadequate for meeting the liabilities incurred, that the directors, the greatest horticulturists and botanists of the day, paid the exhibitors upwards of £200 for allowing their products to remain longer for the direct “purpose” of bringing more visitors and more money. The visitors came, some 80,000 of them, and were delighted, and left between £4000 and £5000 behind them. This insured the payment in full of every demand, and enabled a grant of £1000 being made to the

Gardeners' Royal Benevolent Institution. "Non-Believer" may, if he likes, call this putting horticulture on a "low ground" and thus degrading it. Most assuredly I do not, and so far from "repudiating," I emphasise what I have said on this subject, and with all due deference I venture to submit it is not for "Non-Believer" to accuse me of evasion.

Now a step further. I have said too much for my critic before, but fail to see that fact should deter me any more than the hunting whip does from saying still a little more. When I asked "Non-Believer" on page 378 if he is in a position to say that he has "never exhibited Grapes that were not ripe and in the best condition for table," it was with the object of testing his sincerity as to the practice being "indefensible." This has nothing whatever to do with gate money. It is a separate subject to which he devoted a separate paragraph on page 342. If "Non-Believer" is a good sportsman he will keep his "nose to the fence" and not "turn tail." He has not answered that question, but "fenced" with it. I repeat it, and further ask if he has never exhibited late Grapes in the autumn. If he can give a clear, unqualified negative reply he will strengthen his position immensely; if he cannot he stands condemned of doing that which he has characterised as "indefensible."

As to his simulated horror of putting horticulture on a "low ground," because, forsooth, shows are made so good that they attract the public and bring gate money for disbursing in prizes, I cannot help thinking the protest does not come with the best of grace from an individual who does not show now because from a "pecuniary point of view" he can "do better." He must have exhibited at some time, or he would not know how much or how little money he could make, and thus find out how he could "do better," or make more in some other way. I do not blame him if he is repentant of what he may regard as past errors in receiving a share in the gate money of shows, but notice his significant admission. I observe, too, "Non-Believer" does not dispute the existence of individuals who are so exacting for their "pound of flesh" as to have threatened managers of shows with actions, nor does he ask for an example. I am inclined to think the "dust" I "throw up" does not "confuse spectators" so much as it confuses my assailant, who, with his usual taste, chooses to make a personal matter of a public question. I regret he has done so, not on my own account, but in the interests of horticultural literature. His mock heroics can deceive no one, and his distortion of sentences and characteristic equivocation are, to employ a mild term, pitiable. Perhaps sufficient has been said on this subject at present by—A THINKER.



VEITCH MEMORIAL PRIZES FOR 1886. — We learn that the Trustees of the Veitch Memorial Prize Fund have decided to offer next year the following prizes, the dates for which and other particulars will be announced later on:—At Stoke-on-Trent, a Veitch Memorial medal and prize of £5, for a group of Orchids with Ferns intermixed; at Stoke-on-Trent, a Veitch Memorial medal and £5, for a mixed group of flowering and foliage plants; at Exeter, a Veitch Memorial medal and £5 (subject not determined); at Royal Botanic Society, Regent's Park, a Veitch Memorial medal and £5, for twelve Amaryllis; at Royal Horticultural Society, South Kensington, a Veitch Memorial medal and £5, for a collection of forced salad plants.

— At the Brixton Show, briefly reported last week, there was a very pretty display of ORCHIDS, Mr. Salter, The Gardens, Selborne, Leigham Court Road, Streatham, contributing largely, for besides several entries in the classes, he had a beautiful group of well-grown plants. These included some fine examples of *Vanda coerulea*, one of which had a spike of sixteen large flowers. *Cattleya Dowiana* and a darker-coloured variety with golden sepals and petals termed *aurea* was also notable, and with *Odontoglossum Pescatorei*, *Phalaenopsis amabilis*, *Cattleya imperialis*, and *Cypripedium* made a most effective group arranged with Ferns. Mr. Weston, Clapham Park, had a good plant of *Zygopetalum crinitum* bearing two spikes of seven flowers each, and Mr. Luff also showed several well-grown plants.

— In the fruit classes at the same Show Mr. W. Hall, Tulse Hill, had three superb bunches of ALICANTE GRAPES, weighing 12 lbs., the berries even, of good size, and finely coloured. For evenness and finish they were some of the best we have seen this year. The best white Grapes were from W. Ronpell, Esq., Roupell Park, well-coloured medium size bunches of Muscat of Alexandria. Apples and Pears were well represented, Messrs. A. Sandy and W. Hall being the principal prizetakers.

— MR. JOSEPH OLIVER states:—"The weather in Northumberland is most beautiful this week, some days being more like spring than November, and quite a treat after such a long run of unsettled weather."

— At the risk of making one of our correspondents vain, we are tempted to publish what Mr. Oliver sends respecting him. Here it is:—"We are pleased to see 'Thinker' on again; all the readers of the Journal that we fall in with from time to time are highly pleased with him, and consider he is doing a good thing in a capital spirit."

— WE have received an illustrated catalogue of RIPPINGILLE'S OIL-WARMING STOVES, in which the different forms are represented, showing their adaptability to various domestic purposes. Silver medals and certificates of merit have been awarded to these stoves, which many amateurs have found useful in excluding frost from small greenhouses. They are manufactured by the Albion Lamp Company, Birmingham and London.

— A CORRESPONDENT, "Sutton," will be glad if W. J. Ireland will state his method of PACKING GARDENIAS to travel safely; and "Sutton" is of opinion that many other readers will be glad to know the best way of packing these flowers.

— THE EAST GRINSTEAD CHRYSANTHEMUM SOCIETY will hold their annual Show in the Public Hall of that town on November 17th. Thirty-six classes are provided, of which twenty-six are for Chrysanthemum plants or blooms, and the remainder are for table decoration. Primulas, Grapes, Apples, and Pears. The prizes range from 25s. to 1s. 6d. Mr. Jenks, Brambletye, is the Hon. Sec.

— A CORRESPONDENT writes:—"In Messrs. R. P. Ker & Son's nursery, Aigburth, Henderson's WHITE PLUME CELERY is growing in two or three rows, and every plant is true and answers exactly to the character given it when sent out. The foliage is beautifully variegated, and the stems blanch without the trouble of earthing them. In fact, all the inside stems are naturally white. Having tasted it under these conditions it did not possess that crispness characteristic of good Celery. In spite of this it will prove a valuable acquisition for stewing in establishments where quantities are in request for this purpose early in the season."

— "LARGE quantities of CYCLAMENS are also grown in the Aigburth nursery, and are just now remarkably fine. The plants number many hundreds, in pots varying from 5 to 7 inches in diameter. The whole are from seed sown last year, and have, therefore, been grown in little more than twelve months. Those in the largest size are about sixteen months old, and wonderful examples of cultivation they are, for many of the plants are as many inches through them as they have been months growing. They are also flowering with great freedom, for many of the plants have already scores of their beautiful sweet flowers well above the foliage. Mr. Ranger has certainly proved himself to be a master in the cultivation of the Cyclamen in past years; but the plants he has grown this year are certainly superior to any of his previous productions."

— A GARDENER recommends "Those who have not grown BEGONIA CARRIERI to do so, for it is a gem, and flowers with great profusion during the autumn and winter months. Where white flowers are required for cutting, or plants for decorative purposes in various size pots, it is undoubtedly one of the best plants that can be grown. It appears to be a good grower, of free branching habit, and flowers so profusely that the smallest plant—even those just rooted—soon becomes a mass of bloom. The white flowers which are produced in clusters are displayed to great advantage by the dark foliage of the plant. It does not appear very particular about treatment or position, for it continues growing and flowers freely in the conservatory where a temperature of 45 to 50° is maintained. The plants grow into shapely bushes without much trouble as regards the pinching of the shoots. Its good habit of growth, therefore, renders it a very suitable plant for using as single specimens in vases. But for the embellishment of the conservatory during the dreary months of the year we think it invaluable."

— THE dwarf-growing evergreen shrub, VERONICA TRAVERSI, flourishes in the neighbourhood of Liverpool, and is admirably adapted for planting in town gardens. The greatest recommendation in its favour is the character it possesses of growing well under the shade of trees. Plants that flourish in such positions are well worth noting, for very few do well for any length of time subjected to drip and shade in such situations.

— A NORTHERN correspondent writes, "My CHRYSANTHEMUMS are from ten days to a fortnight late this season owing to the unusually cold and wet autumn in this district. I have a very smooth lot, but I am under the impression that some of the varieties will be rather under their usual size, and, so far as I can see at present, the petals are rather fewer in number, owing, in my opinion, to a deficiency of solar heat and light in the autumn. The only varieties I have expanded are Jeanne d'Arc, Lady Hardinge, Mrs. W. Shipman, Refulgence, Mr. Bunn, Beverloy, Golden Beverley, Mrs. Dixon, Mrs. Rundle, and George Glenny—ten varieties. My best flower so far is Mr. Bunn, a good, solid bloom, measuring 9 inches over and 13 inches in horizontal circumference."

— MR. E. W. BADGER writes as follows on CURING DISEASED EUCHARISES.—"After reading 'W. W.'s' note on this subject it occurred to me that the recently introduced remedy for mildew, red spider, aphid, &c., is one which might most probably be effectual in this case. I refer to sulphide of potassium (Harris & Co), which has been favourably reported on by several of our best gardeners. I am only judging by analogy, but I am persuaded that there is every chance of it proving destructive to the Eucharis mite without being in the slightest degree hurtful to the bulbs; indeed, it will most likely do them good by arresting any decay which may have begun in them. A weak solution only is necessary—namely, quarter of an ounce of the sulphide dissolved in a gallon of water. I would suggest two modes of experimenting. 1, To plunge the plants in pots in the solution until the soil is saturated; and, 2, To wash the bulbs thoroughly in it. This suggestion is not intended to supersede 'W. W.'s' method, but to supplement it. Anyone trying the sulphide will render service to gardening by reporting the result in the Journal."

— HULL CHRYSANTHEMUM SHOW. — A photograph of the challenge vase that is provided for open competition at Hull on November 19th has been sent to us. The vase is evidently a very beautiful one and such as will be prized by its fortunate possessor. Its value is fifteen guineas, and there is £10 in addition for the winner, the other prizes in the same class being £8, £5, and £2; or £25 (excluding the vase) for twenty-four incurved blooms in not less than eighteen varieties, and twenty-four Japanese under similar conditions. This ought to insure fine stands and good competition. Other substantial prizes are provided in the schedule. The Show continues for two days.

— "W. B." observes that BEGONIA SEMPERFLORENS ROSEA is an excellent variety for flowering during the dreary months of autumn and winter. It is a robust grower, and flowers profusely in the stove, but soon becomes tall in the close moist atmosphere of that structure. It is, however, well worth growing, for it appears to greatest advantage when its stems and flowers stand out well above surrounding objects. For this purpose the plants should be grown in small pots with single stems. It branches freely from the base if larger plants are desired. This variety is probably most suitable for the conservatory where the temperature does not fall below 50°, or any intermediate structure. Growth under these conditions is slower than is the case when kept in the stove. The trusses of flowers are crimson in colour, and borne on strong, rather lengthy stem, after the style of *B. nitida*, but the individual flowers are larger than those of that variety. *Begonia semperflorens carminea* is very similar to the above variety, and is also well worth growing, the only difference between the two being the size and darker shade of colouring in the flowers.

— A FARMER writing in the *Florida Dispatch* respecting INDESTRUCTIBLE FENCE POSTS, observes that twenty-five years ago he set split white Oak posts for his garden fence, putting about a peck of air-slaked lime about each, and they are all good yet. He attributes their good condition to the effect of the lime, in which he is doubtless correct. A board that has been used in a mortar bed, and thoroughly saturated with lime, is almost indestructible from decay.

— PTERIS TREMULA.—Mr. W. H. Divers writes:—"I notice 'W. B. H.,' page 402, recommends this Fern for indoor use where no gas is used, and I can endorse all he says in its favour. I have often found it stand well when grown in rooms, &c.; but in conversation with some ladies a few days since they gave it a much stronger recommendation, as they told me it was the only Fern they could keep alive any length of time where gas was often used. I have noticed *Pteris cretica albo-lineata* also does well under adverse circumstances, but I have never found any

plant so useful as *Aspidistra lurida variegata* for growing in very bad positions in rooms."

— At the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY, to be held at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 7 P.M., the following papers will be read:—"The Helm Wind of August 19th, 1885," by William Marriott, F.R.Met.Soc. "The Typhoon Origin of the Weather over the British Isles during the 2nd of October, 1882," by Henry Harries. "Note on the Principle and Working of Jordan's Improved Sunshine Recorder," by J. B. Jordan and F. Gaster, F.R.Met.Soc. A Committee of the above Society has been appointed to take into consideration the question of the supposed DIMINUTION OF WATER SUPPLY AND THE SUGGESTED INCREASE OF FLOODS. The Committee is desirous of obtaining as much information as possible, and will therefore be very glad to receive any data bearing upon the subject, and showing the past and present state of the water supply, either from gaugings of wells or springs; the height of flood marks in rivers, streams, and lakes; the records of low water periods; or any historic data which may have been collected relating to the subject. Information relating to the period between 1825 and 1835 would be extremely valuable, in order to enable the Committee to fill up a gap in the diagram accompanying the report in the "Quarterly Journal" for July, 1885. All communications should be addressed to the Assistant Secretary, Mr. W. Marriott, 30, Great George Street, Westminster, S.W.

NOTES ON NEW AND RECENTLY INTRODUCED VEGETABLES.

THE experience of another year enables me to speak more fully and conclusively of the merits of some of our new vegetables than I have hitherto been capable of doing.

CHOU DE BURGHELY.—The seed of this was sown in April, and I am glad to find it is now perfectly true in character. There are no tall narrow ones here, and broad short ones there, but all are of that compact conical form which distinguishes the true variety. It has turned in well, and when cooked like Cabbage it is more delicate and delicious than any Cabbage I ever tasted. I am more satisfied with it this season than ever, and all who desire a Cabbage of great excellency should grow it. I am not going to say anything of its Broccoli character. I fear none of our heads will ever reach the Broccoli-forming stage.

SUTTON'S EARLY SNOWBALL TURNIP.—There are many Snowball Turnips, but this is the finest of all. It is most handsome in shape, pure white throughout, and of the highest quality. We cultivated more of it this year than on any previous occasion, and it has taken its place as a standard sort in our garden. Some object to seed firms putting their name as a prefix before vegetables, but were it not for this plan such a Turnip as this would not be known from other Snowballs, and it certainly merits distinction. It is superb for exhibition.

VEITCH'S AUTUMN GIANT CAULIFLOWER.—What! this amongst new vegetables? No; but it is amongst good ones, and I am sure no one can ever think of the best vegetables without this Cauliflower appearing amongst the first. We have been cutting it for upwards of three months, and shall continue for about two months more. I would as soon think of being without a Cauliflower altogether as omitting this one. There are those who think that any seedsman can supply such gems as this as well as going to head quarters, but it is not always so. Some years ago I had seed of this Cauliflower from a respectable firm in the north, and was greatly mortified to find that the majority of the plants were untrue. I could see this before the plants headed, and they disarranged the Cauliflower supply so much that autumn that I resolved to always go to head-quarters for specialities.

GILBERT'S UNIVERSAL SAVOY.—Seed of this was sown at the same time as the Drumhead and Green Globe. Some of these two are just ready for cutting now, and others will not be fit for some time; but the Universal has been ready since the middle of September, and scores of them have burst, as they came in quicker than there was a demand for them. This early heading and splitting disappointed us, but it should be sown six weeks or two months after any other Savoy. It does not grow very large, and may be planted much closer than other Savoy; 15 inches between the rows, and the same between the plants, would be ample space. Owing to this early heading I shall have none of it by mid-winter, and shall require another season's experience of it before recommending it.

WHITE PLUME CELERY.—This novelty becomes a greater favourite by extended cultivation. I had some seed sent from New York again in January last, and it has turned out true. Some might think it a little wanting in crispness when used as salad, but for cooking purposes it is excellent, and for this alone quantities of it should be grown everywhere. Its culture is most simple; indeed planting and weeding is the whole of the details necessary for its successful culture.

ONIONS.—Webb's Banbury continues one of the best of summer varieties. It is evidently cultivated with great care to keep the stock pure, as for the last half-dozen years at least one crop has resembled another as closely as possible. I have some specimens which weigh

1 lb. 2 ozs. They are sound and finely formed. In my opinion there is no foundation for calling Rousham Park Hero a "new variety of the White Spanish." A selected White Spanish would be more appropriate. I could place it with some others and defy the raiser to distinguish it. It is a fine Onion under extra good cultivation. I do not think we pay enough attention to the culture of small Onions. If anyone would advertise an Onion that would readily become 1 foot or so in diameter, the demand for it would be unlimited, but one from 2 to 3 inches in diameter would pass unnoticed, and yet when usefulness, and above all, keeping qualities are considered, the small ones are the best. In this respect Carter's new Golden Queen merits general culture. It is one of the miniature varieties, just what good cooks ask for very frequently, and is a first-rate one to keep for six or eight months.

LETTUCE.—Veitch's Perfect Gem is the most compact growing of the Lettuces, and of good quality. Webb's Summerhill is another Cabbage variety greatly liked in the house here. Last July we had it 7 lbs. in weight.

LAXTON'S GIRTFORD GIANT KIDNEY BEAN.—I have grown this exclusively this season, and I do not think we ever had finer crops. It is early, prolific, and bears very large tender pods, but many of our pods were gathered when 4 and 5 inches in length, and only those for seed remained to attain a length of 10 inches and 1 foot. Although I have only possessed it two seasons, it has been so uncommonly good throughout that it is now, and will be, our main crop sort.

TOMATOES.—Reading Perfection and Hackwood Prolific are two of the finest of recent introductions. Both are large in size, even in form, and highly productive, but I know of some good judges who do not look upon great size and fine symmetry as the main points of a Tomato, and for this reason they prefer Carter's Green Gage to all others on account of its exquisite flavour.—A KITCHEN GARDENER.

REVIEW OF BOOK.

The Flowering Plants and Ferns of the Riviera and Neighbouring Mountains; drawn and described by C. Bicknell. London: Trübner and Co.

THIS elegant work has appeared at an opportune season. The time has arrived when invalids seeking health, workers seeking rest, and the luxurious long for the comforts that the charming climate of the Riviera and its neighbourhood afford, are directing their faces toward the Mediterranean coast. The only drawback to a winter spent in these regions is the want of occupation—something to amuse, and at the same time to instruct. All feel the general monotony that sets in after the visits to Monte Carlo, Nice, and Bordighera have been made and the few mountain ascents have been accomplished. The flowers with which these mountains are clothed have a never-failing attraction, and the very absence of occupation that visitors suffer from tends to strengthen the love which the never-failing flowers engender. What has always been a desideratum among the visitors of the Riviera was a book that would assist them in discovering the names of the wild flowers. There are several local floras, such as Ardoino's, but they are regarded as too scientific, and, being written in French, even those who are familiar with the language are not also familiar with its technical terms, and hence all the works we have seen on the subject are really sealed books to the great majority of sojourners on the Riviera. Mr. Moggridge's "Contributions to the Flora of Mentone," is an expensive book, and has become rare, and was really out of the reach of the many. We therefore hail the appearance of "The Flowering Plants and Ferns of the Riviera" as a much-needed requisite to the full enjoyment of a visit to this region, and, being written in English, it is equally valuable to English and Americans, both of whom are to be found there in ever-increasing numbers.

The work consists of eighty-two plates, with the requisite letterpress arranged according to the Natural System, and each plate contains two or more figures of allied species, embracing 221 species altogether of the most beautiful objects of the Alpine Flora. The author deserves great praise for the care that has been taken in the preparation of the work, and for the fidelity and artistic skill which has been shown in the drawing of the plants.

We observe there are a few errors which have escaped the author's notice. *Ranunculus monspeliacus* is said to be 2 to 3 *diameters* high, for *decimetres*. In plate xiii., and also in the text, *Cytisus sessilifolius* is spelt *sessifolius*. In plate xvii., and also in the text, *Lotus tetragonolobus* is spelt *tetragonobolus*.

TWO ROCK GARDENS IN THE NORTH.

DURING my visit to Manchester and Darlington in July I had the pleasure of visiting two gardens wide as the poles asunder in their character, but both evidencing how widely spreading is the taste for alpine and herbaceous plants, and how one comes upon them in the most unlikely places. One was that very largely known one of Mr. Harvey's at Aigburth, near Liverpool, and the other in an allotment ground at Newcastle-on-Tyne; and knowing how very general is the taste for these things, I imagine that a few notes will not be uninteresting to the readers of the Journal.

A villa garden is not the place where one (knowing what villa gardens generally are) would look for a picturesque and well-furnished rock garden; but Mr. Harvey's is not an ordinary villa garden, and I wish I could adequately convey an idea of the excel-

lent taste with which it is arranged, and the richness of the collection it contains.

The garden is situated about five miles from Liverpool, and stretches down to the banks of the Mersey, while in full view of the house (but, alas! hidden by mist the day that I was there) are the mountains of North Wales. From its open situation it is a place where rude Boreas, sweeping down from the Welsh mountains and coming across the rivers, causes his presence to be felt, and compels the owner to put up various defences against his attacks. The soil, too, is not in Mr. Harvey's favour (how often one finds this in rock gardens), as it is a stiff clayey loam not by any means suitable for the growth of alpine plants. In front, the lawn (for the inevitable tennis) stretches down towards the river, and from this there is a wall of separation in the form of a Beech hedge about 15 feet high. Some Lilies in the herbaceous garden were grand in their development—*pardalinum* in great masses, *auratum* 4 to 5 feet high with clusters of blooms, *Washingtonianum purpureum*, &c., all very much at home, and returning much for the loving care bestowed on them.

I was, however, mostly interested in the rock garden. I have seen some grand gardens, and Floore especially was fresh in my memory, and I thought had satisfied myself for one season. The collection at Aigburth is neither so extensive nor does it exhibit such triumphs as Mr. Loder's does; but it is without doubt an exceedingly rich and valuable one. We used to be told that nothing could be done without pockets, the said pockets destroying the naturalness of the rockery. But there are no pockets here, and as a consequence the rockery is much more natural, while the plants seem to do equally well, different kinds of stone having been used to suit the requirements of the plants; for although some have doubted whether it is so absolutely necessary to provide lime for what are called limestone-loving plants, there can be little doubt that they are happier when their natural wants are provided for.

To enumerate the plants in this very rich collection would be to simply copy out a very select catalogue, and a better idea may be given of the success which has attended Mr. Harvey's effort if I give some of the most striking results. Here is a patch of the very beautiful *Androsace sarmentosa*, which covers a space of several feet, and which so strangely alters the character of its foliage; *A. lanuginosa* was also fine. This was arranged so that the crown could be easily protected by a pane of glass, for it is one of those plants which suffer from the excessive moisture of the winter. *Lithospermum prostratum* was flourishing, while there was a fine collection of *Primulas* of various sorts—*Munroi*, *latifolia*, *rosea*, *viscosa*, *nivalis*, *cashmeriana*, &c. That beautiful but somewhat capricious plant *Ourisia coccinea* was also doing well, and so also *Onosma taurica*. There was a grand clump of *Mazus pumilio*, *Nierembergia rivularis*, *Convolvulus mauritanicus*, and *Campanula pulla*. *Campanula Allioni* is also doing well. There was a grand clump of *Hypericum reptans*, and I was very much surprised to find *Lilium auratum* treated almost as a bog plant. It was in a portion of the garden sunk below the level, and the stems were from 4 to 5 feet, covered with blooms. *Phyteuma comosum* was at home, although hardly so much so as at Floore, but then it had not been planted so long, and probably when it has had time will do as well. The garden is rich in *Campanulas*, and I met there some varieties I have not seen before, although perhaps common enough. *Campanula pelviformis* struck me as very beautiful, and also another variety raised at Aigburth; *Campanula garganica* flowing over some pieces of rockwork was in fine condition.

There is also a very pretty little bog garden where many things are flourishing in better condition than one often sees in artificial bogs. Here some of the *Spiræas* are at home, as well as some of those *Primulas*, such as *rosea* and *luteola*, and *Munroi*, which like such a place. Here, too, our pretty native plant *Pyrola rotundifolia* is flourishing. Here, too, some of the Ferns, such as *Osmunda regalis* and *Woodsia ilvensis* are doing well; and in fact so carefully are things looked after that there are few failures, and most things are doing as well as can be. Mr. Harvey is also affected with the Orchid mania, and has a very good collection.

The other rock garden was of a totally different and, I venture to say, a perfectly unique character, for great was my astonishment after the Newcastle Show to be asked, "As I know you are interested in rock gardens would you like to see one in an allotment?" "By all means," was my reply. "It is not far off," was the statement, and so in truth I found it—almost in that peculiarly grimy city. I went—of course expecting to see some cockneyfied production of heaps of stones or old bricks, with plants dotted about in pockets amongst them, for what could there be in an allotment garden? I was most agreeably undeceived. It appears that there is some property about which there is a difficulty. It cannot be sold, and so has been let out in allotments. These are quite secluded one from the other, and this when we entered it might

have been any distance away. The entrance is formed of Ivy, and the door actually turns on a hinge of Ivy. The size of the piece of ground devoted to the rock garden is about 110 feet by 50. The stones used in the formation are obtained from the neighbourhood of Newcastle—the sandstone of the coal measures—a stone which adapts itself well to the formation of a rockery, and I may say that I have never seen a more natural and charming piece of work. You might really imagine yourself on some sandstone ridge which Nature had luxuriantly clothed. There was also a small piece of water on which a white Water Lily was reposing, and its flowers as pure as could be had on any mountain tarn. It would be impossible to get many of the alpine rock plants to flourish so close to a smoky town like Newcastle, and therefore very wisely Mr. Wilson, the owner of the garden, has relied mainly on the Saxifragas, Sedums, and Sempervivums, and these were in a most flourishing state. Sempervivum arachnoideum and Laggeri were grown as I have seen the former over the Mauvais Pas at Chamounix—literally on the stone itself, without apparently any earth at all, and in this way it flourishes. Great wisdom has been shown in selecting such plants as would be most likely to stand the smoke and at the same time look well. I have seen many much more pretentious rockeries which did not display half the taste, and it is only another instance of the truth of the adage that where there is a will there is a way. Many would have scoffed at the idea of having a rockery in such a place; but Mr. Wilson has admirably carried out his plans. I may say that he is also an enthusiastic grower of Auriculas, and that in his frames I saw many fine plants of the hybrid varieties. Lancashire Hero, George Lightbody, Conservative, Sylvia, Acme, Smiling Beauty, were all well represented. In his greenhouse, too, there was a fine lot of Geraniums, Begonias, &c. These are by the way. The great merit of the garden is the rockery, which I hope long may flourish.—D., Deal.

CANKER IN FRUIT TREES.

MR. HIAM does not appear to have hit upon a very happy idea in order to refute my theory of the cause of canker-infested fruit trees, nor in getting "Entomologist" to contradict his former opinion. If Mr. Hiam will refer once again to the wood culture as fruit culture he may be reminded that the art of cultivation first begins with the necessary preparations for the roots. Probably many besides Mr. Hiam overlook this most laborious branch of cultivation. I venture to think that if more attention was paid to it much less of other labour would be needed, not only in scraping and dressing cankered trees, but also pruning in general. Whenever I visit a garden during the summer, autumn, or early winter there is one cardinal point I keep in view. It is this. When I see bush or wall fruit trees allowed to grow and retain gross shoots sometimes over 3 feet long I conclude that the man in charge is not a good cultivator, to say nothing of the unsightly appearance, especially of wall trees, which having long ago covered their allotted space look more like hedges. It is often such neglected instances as those where old shreds or where fastenings are allowed to remain too long, and also like the ligatures referred to, rupture the bark and cause what may be regarded as canker, or what is equally injurious. I wonder how many flower sticks Mr. Haycock and some others who contribute so well to an Apple or Pear congress have to prune away from their celebrated trees at the present time.

Reverting to the main question of canker as showing that constitution has much to do with the disease, we may take an instance from the old Keswick Codlin and Lord Suffield Apple. Why is it that the former is so free from disease, whereas Lord Suffield requires the best treatment in order to keep it healthy? yet it can be so kept, and that without either scraping or other dressing. Of course in some localities less care is needed than in others in hot gravelly subsoils and in wet clayey subsoils. However, the roots must be first attended to. It will also be remembered that the severe and prolonged frosts a few winters past caused much canker in some kinds, especially with regard to Lord Suffield, doubtless owing to want of root-action. During the same winters many evergreens were killed or severely injured where the roots were in sterile ground. Where there is a good flow of sap there is also a certain amount of warmth. Hence, as well prepared ground is richer and more porous than unprepared, and consequently warmer, there is more chance of the trees resisting stagnation during such severe winters; neither do they suffer so much from drought during hot seasons.

Mr. Hiam must not take it that I hold there is no antidote against canker without lifting and transplanting, although I hold that nothing is so complete, and it is well sometimes to encourage a few roots for a season or two before lifting the tree. If Mr. Hiam has a goodly number of trees he will certainly have room for experiment, and assuming his borders are well drained our friend will find that several good supplies of liquid manure during the winter with a liberal mulching will work a considerable change in his trees during next summer. We have several trees treated as an experiment, which are now casting the once cankered bark, and clean healthy bark is fast covering the sore.

I confess I am behind my opponent in entomological matters. I have at times magnified a few of our common pests, but each time has only tended to strengthen me in my desire to have as little acquaintance as possible with them. It seems to me Mr. Hiam lays over-much stress upon the fact of having noticed so many insects beneath the dead bark of

his trees. If he will examine a strip of dead bark upon any old post and rail-fencing, or upon any partially dead branch, if a forest or fruit tree, there will also be insects in abundance at one season or another. But our scientific friend, "Entomologist," himself does not attach much practical value to research in these matters so far as argument goes. Hybridisers who are in search of new varieties are equally diligent to improve the constitution also, especially in common crops, such as Peas and Potatoes.—LATHYRUS.

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 10TH.

THE first meeting of the Committees after the close of the Inventions Exhibition was not an important one, the duties of both Committees were light and few meritorious novelties were exhibited.

FRUIT COMMITTEE.—T. F. Rivers, Esq., in the chair. Dr. Pritchard of Green Street, Sittingbourne, sent an Apple named St. Christopher, a conical fruit of excellent flavour. Mr. Joseph A. Noble of Fortis Green sent a seedling Apple, which was not possessed of any merit. Messrs. Harrison and Sons of Leicester sent a seedling Apple of good size and symmetrical shape, resembling in form the Blenheim Pippin. It had a nice tender flesh and pleasant acidity, and was considered a good cooking Apple. Mr. Miller, The Gardens, Rood Ashton, Trowbridge, sent a large seedling kitchen Apple, which was passed. Mr. Lancaster, Holkham Gardens, Norfolk, sent excellent specimens of Gansel's Bergamot, Beurré Bosc, and Brown Beurré, to which a letter of thanks was awarded. Mr. B. S. Williams of Holloway sent fruit of Winter King Grape, but it was not in condition to be favourably judged. Rev. H. H. D'Ombain, Westwell Vicarage, showed good specimens of the White Plume Celery. A letter of thanks was awarded. Messrs. Rivers and Son of Sawbridgeworth sent a seedling Pear called Parrot. It was raised from Gansel's Late Bergamot, and is of the same round shape with a bright colour like Beurré Capiaumont. It was considered to be a useful market Pear for this season.

FLORAL COMMITTEE.—Three groups were contributed, for which silver-gilt medals being awarded, that from Mr. W. Bull, Chelsea, consisting chiefly of Orchids and new plants. Amongst the Orchids were plants of the free-flowering *Oncidium ornithorhynchum*, the bright yellow *Oncidium tigrinum*, *Lælia autumnalis atropurpurea* with numerous crimson-tinted blooms, *Cattleya aurea*, *Odontoglossum Insleayi Leopoldi*, a large-flowered variety, the sepals and petals heavily barred with brown; *Vanda cœrulea*, the fragrant *Trichosma suavis*, the fine plant of *Vanda Sanderiana* recently noted in these columns, the yellow *Oncidium concolor*, several pretty *Barkerias*, and a plant of *Mormodes pardina unicolor*, with bright yellow blooms on a close spike. Messrs. J. Veitch & Sons, Chelsea, had a pretty group of single and double *Bouvardias*; Sang Lorraine, and Thomas Meehan double red, Alfred Verner double white were the best of the latter, while of the single varieties *Priory Beauty*, *Umbellata carnea*, *Dazzler*, *Elegans*, and *Maiden's Blush*, which we have previously described, were the leading forms. A collection of well-grown *Cyclamens* was sent from the same nursery, together with blooms of new *Chrysanthemums*, for one of which a certificate was awarded. A Japanese variety named *Phœbus*, with large bright yellow blooms, was noteworthy, as also was the brilliantly coloured reflexed *Cullingfordi*. The third medal was awarded to Messrs. H. Page and Son, Teddington, for a group of over 200 *Cyclamens*, compact healthy plants, bearing a great number of flowers both light and dark coloured. They were fine examples of the best culture, and the honour awarded was well deserved.

A cultural commendation was adjudged to Dr. Duke, The Glen, Lewis-ham, for a basket of *Barkerias* in excellent condition and flowering most profusely. A similar recognition was accorded a specimen of *Gymnogramma schizophylla superba* from Mr. Wright, gardener to J. A. Whittard, Esq., Rydel Mount, Streatham, which was recently much admired at the Brixton Show. The plant was over 4 feet in diameter, with large graceful fronds, such as are rarely seen on this Fern as generally grown. Mr. R. Owen, Maidenhead, was awarded a vote of thanks for cut blooms of single *Dahlias* and *Chrysanthemums*; and Colonel T. Clarke, Daventry, had a similar recognition for a plant of *Pourretia flexilis*, with long narrow recurving leaves, bright red at the base.

First-class certificates were awarded for the following plants:—

Chrysanthemum Mons. A. Vilmorin (J. Veitch & Sons).—A Japanese variety, with blooms of medium size, the florets fluted and recurved, orange red, yellow on the reverse side.

Amaryllis Autumn Charm (J. Veitch & Sons).—One of the reticulata type, with large beautifully formed blooms, veined with bright rosy pink, and having a clearly defined bar of white in the centre of each lobe.

Chrysanthemum Maiden's Blush (G. Stevens, Putney).—A large-flowered Japanese variety, with flat florets, white, or creamy, very full and handsome.

Cypripedium insigne Wallacei (New Plant and Bulb Company).—A distinct variety, the dorsal sepal clearly margined with white and heavily spotted with dark brown.

JAPANESE ANEMONE CHRYSANTHEMUMS.

LAST year we gave an illustration of the remarkably distinct variety *Fabian de Médiana*, then bearing the incorrect title *Fabias de Maderanaz*, and now we give another example (fig. 65) of this beautiful section of *Chrysanthemum*, *Sœur Dorothée Souille*. This differs considerably from *Fabian de Médiana* in the central tubular florets being much longer, and in the outer ray or guard florets being shorter and approaching more nearly to the character of the ordinary large-flowered *Anemone* varieties. The colour is a soft pink or blush, becoming nearly white sometimes, the outer florets being of a deeper tint. It makes a grand exhibition variety, and has this year assumed its true characters much earlier than *Fabian*

though the latter variety was in good condition quite as soon last season. Madame Cabrol, Madame Berthie Pigmy, and Margaret Vallageoise are also large-flowered varieties now included in this section, but at present they

classes; but there was a general opinion that the judges were too severe in disqualifying a stand of large-flowered Anemones at the Crystal Palace Show for containing blooms of Emperor, which has hitherto been admis-



FIG. 65.—CHRYSANthemum Sœur DOROTHEE SOUILLE.

ave not been so well shown as the two others. The committees of several Chrysanthemum societies have acted wisely in providing separate classes for these, and excluding them from the large-flowered Anemone

sible in that section, but however that may be, Sœur Dorothee Souille differs very widely from it, and is one of the most distinct and beautiful of large Japanese Anemone Chrysanthemums. The figure is an exact

representation of a bloom that was sent to us by an excellent cultivator of these flowers.

AUTUMN AND CHRISTMAS ROSES.

WE have to-day (November 6th) gathered a large bunch of good Roses, including Dupuy Jamain (almost up to exhibition form), A. K. Williams, Charles Lefebvre, La France, Marquise de Castellane, Souvenir d'un Ami, Marie Van Houtte, Anna Ollivier, Rubens, Princess of Wales, Madame Charles, and others, and on coming to one of our Hellebores in a sheltered position with a west aspect, were surprised to see some fine flowers peeping out. This led to further investigation of our other plants, and we found the whole of these pushing out their buds strongly, and enough flowers fully out to make quite a show by the side of the other Roses.

Is not this an unusually early date for Hellebores to flower in the open ground and on a cold soil? They are the common white variety, and have had no protection or assistance whatever, and in all other respects the autumn has not been a growing one, as observed by "D., Deal," on page 405. We propose planting some later sorts, and shall be glad of any information as to the best varieties.—NORTH HERTS.

NOTES UPON DAFFODILS AND NARCISSI.

(Continued from page 366.)

GROUP 1.—THE TRUMPET OR AJAX SECTION.

N. BICOLOR.—A fine Pyrenean Daffodil, with large spreading pure white perianth and large golden yellow trumpet; a form named *breviflos* is often distributed for it, but is much inferior and cheaper, and does not flower at the same time. The typical form now mentioned comes in about a fortnight later than the well-known variety *Horsefieldi*. There are several varieties of this which I will mention in the order in which they blossom—*Horsefieldi*, the earliest, with large white perianth, and dilated long golden yellow trumpet, raised by the late John Horsefield of Whitfield, near Manchester, one of the finest, and followed by *Empress*, which resembles *Horsefieldi* very much, but is a stronger grower; there is not, however, quite so much substance in the flowers. *Major* is in its prime at the same time as the type, and has a long rather narrow trumpet, very distinct and beautiful; *maximus* follows closely, and is much larger than the last, and most conspicuous, while the list closes with *Michael Foster*, or *sulphureus*, as it was formerly called, which produces immense flowers with pale sulphur perianth and deep yellow trumpet with very broad glaucous foliage.

N. BULBOCODIUM (the Hoop Petticoat Daffodil).—Easily known by its narrow-pointed perianth divisions and large crinoline-like trumpet of the richest yellow, is most charming for pot culture or the borders, preferring a moderately stiff soil and plenty of manure. The variety *citrinus*, with pale sulphur flowers, is extremely pretty and well worth growing, as also is the white form *monophyllus*, if a small handlight or frame can be devoted to it, otherwise it will not thrive satisfactorily, for being a native of Algeria it is too tender to grow unprotected outside.

N. LORIFOLIUS EMPEROR.—A magnificent variety, with pale sulphur divisions and very large deep yellow trumpet, and well merits its august name. As a companion to *Empress* it is most desirable. It was raised by a grower named Backhouse in Yorkshire, and was for a long time kept from commerce, and even now it is very uncommon.

N. MAJOR.—This should be grown everywhere, as it is cheap and very showy, rich yellow throughout, the perianth divisions being rather paler than the trumpet. It grows freely, especially in a warm situation, and is very variable. There are many forms, of which the following may be noted—*Maximus*, a noble form, producing very large trumpets with broad spreading limbs of the richest golden colour, and should certainly find a place in every collection. *Obvallaris*, the Tenby Daffodil, is also most desirable, perfect in form, bright golden yellow; the first of the large Trumpets to expand, standing uninjured during the severely rough weather we often get in March. *Spurius* is also a free early variety, while a form of it known as *coronatus*, also as *General Gordon*, is magnificent; the trumpet is very broad, at once a distinguishing feature, rich yellow, the spreading divisions much paler; it is comparatively scarce yet, but should certainly be secured.

N. MOSCHATUS, OR "SILVER TRUMPET."—The type of a very beautiful series of Daffodils which are well worthy being made a speciality, as they are so chaste and yet so hardy; the type is scarce. *Albicans*, usually vended as *moschatus*, is a robust grower with white divisions and large fringed pale primrose trumpet, very fine indeed. *Cernuus* is dwarfier, producing nodding flowers, with pale primrose trumpet and silver-white perianth divisions. *Cernuus pulcher* is similar, but the trumpet

is much longer, forming a most elegant flower. Of the hybrids belonging to this class mention may be made of William Goldring, Exquisite, Mr. Cowan, F. W. Burbidge, Mrs. F. W. Burbidge, and Dr. Hogg, all of which are extremely handsome. The two first are the most abundant, but as yet they are comparatively dear, but such gems should be secured if possible. I have everyone of those named, and nothing in my garden has given more pleasure this season. Mr. Cowan is very distinct, as the trumpet is very broad and short, pale primrose.

N. PSEUDO-NARCISSUS (the wild Daffodil).—I will only refer to the type as being useful for massing in woodlands, grass, &c., but there are several distinct and good forms which should be grown everywhere, and which are usually catalogued as distinct species. There is *pallidus præcox* (named thus by old John Parkinson) a very early-flowering Pyrenean form, with slightly drooping flowers of a pale sulphur colour throughout, the trumpet wide at the mouth. It is the first of all the Trumpet section to blossom, and should be sought. *Princeps* is very lovely, with a strong foothold in Ireland, varying considerably in form, size, and perianth colour; usually the latter is sulphur, and the trumpet deep golden yellow, sometimes very large, resembling *maximus*; hence Mr. Baylor Hartland of Cork has made a selection with rich yellow perianth, which he calls golden princeps, a most beautiful form. *Pallidus* produces creamy-white, sharp-pointed perianth divisions and brown trumpets very curly and delicate-looking, but in a well-drained position it does well; it comes from Spain.—J. T. R.

(To be continued.)

AUTUMN SHOWS.

EXHIBITORS of Chrysanthemums will soon be actively engaged in preparing for the numerous shows announced for the present season, and the following list of fixtures may be useful as a reminder. Secretaries of Societies not mentioned will oblige by forwarding their schedules.

November.	11th and 12th.	National Chrysanthemum Society, Croydon, Bath, and Ascot.
"	12th.	Walton-on-Thames, Staines, and Teddington.
"	12th and 13th.	Lindfield, Portsmouth, and Tunbridge Wells.
"	13th.	Reading.
"	13th and 14th.	Huddersfield, Cheshunt, and Exeter.
"	14th.	Ramsbottom.
"	17th.	East Grinstead Yeovil, and Devizes.
"	17th and 18th.	Lincoln, Manchester, and Winchester.
"	18th and 19th.	Northampton, Bristol, Burton-on-Trent, and Birmingham.
"	19th.	Taunton, Hammersmith, and Aylesbury.
"	19th and 20th.	Hull.
"	20th and 21st.	Sheffield.
"	24th.	Liverpool.

FLOWERING PLANTS FOR THE STOVE.

MANY beautiful flowering plants were cast on one side only a few years ago to make room for fine-foliage plants which were then so popular. Happily taste has changed, and useful flowering plants are now eagerly sought for, but I fear some old favourites will be a long time before they again find a place in gardens generally. This is largely due to the enormous quantity of choice flowers that are now required, therefore only profuse flowerers with a minimum of labour really come to the front. These notes are not intended to deal exclusively with plants that fulfil the requirements of the present time, but those named are worthy of a place in any garden however limited the collection.

STEPHANOTIS.

I should have thought that the old *Stephanotis floribunda* would have been the last plant that would have been condemned. *Eucharis* and *Gardenias* are great favourites, but I think the flowers of the *Stephanotis* are superior, especially if the length of time the flowers last in water is considered. The continuous flowering habit of the plant over a period of many months alone places it in the foremost position. Some contend that there are two varieties of this plant, one profuse-flowering, and the other shy; this may be the case, but experience and observation seem to point to the contrary. I have two plants, one supposed to be the free-flowering sort, and the other the opposite. The past two years they have reversed their characters, and the last-named is now the free-flowerer, while the former has scarcely produced any flowers. This is by no means due to the varieties, but to the different positions the two plants occupy. The so-called free-flowering variety is growing in a shady portion of the house, while the other occupies a much lighter and more open position.

A striking case came under my observation only a few years ago when practising further north. We had a plant in the fernery well exposed to light, air, and only an intermediate temperature. Often during the winter the portion of the house in which it grew was not much warmer than an ordinary greenhouse. I do not remember seeing a plant that produced the same quantity of flowers. A cutting was struck from this plant and placed in the stove, but it only produced solitary trusses of bloom. The very same state of things I have observed in other gardens, hence the general opinion that there are two varieties.

Frequently plants of *Stephanotis* are to be found trained under the roof of an ordinary plant stove where a mixed collection of plants is grown, and the conditions of such a house are generally unsuited to flowering the plant profusely. It grows luxuriantly enough in a close moist shaded structure, such as the one indicated above, and that is all that can be said. The secret of growing and flowering this plant well is

to have it exposed to full light and sunshine, shade being unnecessary is plenty of air is given during bright weather. A little shade, however, would really prove no detriment while the plant is growing rapidly, provided it only broke the sun's rays and was applied for a few hours during the hottest part of the day. Plenty of heat and moisture while the plant is growing is an advantage if abundance of light is given and air freely admitted to harden and solidify the wood. This treatment results in short-jointed wood and trusses of bloom from every joint.

At this season of the year the wood should be thoroughly ripened or brought into that condition as early as possible. A good season of complete rest is essential to the plant if plenty of flowers is expected another year. During this important period the wood should be exposed to every ray of light in a moderately dry atmosphere, and in a temperature that does not exceed 55° at night, 5° lower is preferable to a higher temperature during cold weather. While in this condition no more water should be given at its roots than is sufficient to keep the growth and foliage fresh and plump. Under these conditions this plant will rest completely, which it will not do in the close, moist, and warm atmosphere of the stove. I am inclined to believe that if this simple treatment were more generally followed we should hear less of two varieties.

GARDENIA CITRIODORA.

This was a general favourite amongst stove plants some years ago before the varieties of *G. florida* were so extensively grown as they are at the present time. It has gone like many other good old plants, and now is rarely seen. It is, however, no less beautiful than formerly, and its sprays of Orange-like fragrant flowers that are produced freely from the axils of the leaves during winter should commend it to the public. Small shapely plants can be grown suitable for single vases more readily than the double forms, but even for the embellishment of the stove alone it is well worth attention. It grows freely under good cultivation, and very soon makes bushy little flowering plants in 5-inch pots. The main secret of success is to select clean healthy cuttings, and then grow them on afterwards without a check. Strong non-flowering shoots rooted in July and wintered in small pots will be bushy plants by spring, and ready for transferring into the pots in which they are to flower. It is necessary to grow the young plants under the influence of light, plenty of heat, and moisture, and then every shoot will flower. Careful watering is needed until plants are rooting freely into the soil, for if they once become checked they seldom do much good. It is also important that thrips and scale, which appear to be very fond of this old plant, are never allowed to become established, or they will not only destroy the foliage, but bring growth to a complete standstill. If the plants are kept growing in a moist structure and liberally syringed, insects will not infest it any sooner than other stove plants.

MEDINILLA MAGNIFICA.

A few years ago *Medinilla magnifica* was decidedly more popular than it is now, and it seems a pity that such beautiful ornamental plants should not be more largely grown at the present time. It is true it is not suitable for yielding abundance of flowers for cutting, but when its large pendulous racemes of rosy pink flowers are produced few stove plants can surpass it for beauty. The flowers last a long time in perfection, especially if the plant is stood while in flower in a rather dry moderately cool atmosphere. It generally flowers during April and May, but can be retarded or brought into flower earlier, as the flowers are produced from the termination of the shoots of thoroughly ripened wood. This is a free-growing plant, but does not flower freely under ordinary stove treatment, and this may in some measure account for it not being more generally grown. Even when this plant is not in flower it is ornamental.

While growing stove treatment should be given; in fact, a house where a mixed collection of plants is grown will suit it very well, provided the lightest position is selected for it. If the plant is to flower light must be freely admitted to ripen and harden the wood, especially during the last stages of development; in fact, light must be gradually admitted to it until it will bear full exposure to the sun. During the latter stages of ripening a cooler and drier atmosphere should be maintained until the wood is hard and ripe. It should then be rested in an intermediate temperature, where a moderate amount of air is admitted and the atmosphere is kept comparatively dry. No more water should be given than is sufficient to keep the foliage and roots healthy. Whether the plants flower well or not entirely depends upon the treatment they receive, and those who possess plants should be careful what treatment they receive from the present time, for the wood must be thoroughly ripened and then given a rather lengthened period of rest. During the season of inactivity a strict watch should be kept for thrips, for they are very liable to attack the plant during the time growth is at a standstill. Mealy bug will infest it, but the first-mentioned insect if once established very soon destroys its large deep green leathery foliage.

ANTHURIUM ANDREANUM.

At one time I was rather inclined to condemn *Anthurium Andreanum*, for I failed to see what qualities it possessed to merit recommendation. In spite of my first impressions I now regard it as a very valuable addition to our stove-flowering plants, for it is strikingly ornamental. It is rarely without one or more spathes. There are several varieties, and certainly some of them are not worth house room, but good varieties with brilliantly coloured spathes 7 or 8 inches in length and almost 6 inches wide, cannot be despised; fortunately I possess one of the finest varieties I have yet seen. One of the worst features of this plant is its natural habit of running up quickly with a slender stem, and thus it soon becomes unsightly unless the lower portion is hidden by surrounding plants. This

can be remedied, however, by a little care and patience, for the plant can be topped, and will root again as freely as the old *Alocasia metallica*. It roots quickly if placed in a pot, or it can be mossed round the stem for a few weeks previous to being taken off, and if this is done and a few roots established in the moss the plant commences growth at once. The stem will break into growth again as freely as the plant above alluded to, and therefore when this is generally known we may expect to see large panfuls grown on the same principle as we are accustomed to see *Alocasias* now. It appears to break freely from nearly every joint of the stem, but whether it will propagate freely from the stem cut into lengths I do not know, for I have not yet had the opportunity of testing it, but intend doing so in the spring. If this is the case imported seedlings can be dispensed with, for they often yield many worthless varieties.—WM. BARDNEY.

ZINC LABELS FOR OUTDOORS.

The following sketch will illustrate what I think a better way of fixing zinc labels for outdoor use than that suggested by your correspondent, Mr. Walter Kruse, on page 380. Holes are pierced in the stem of the label, and the wire passed through them as shown in the figure. The top end of the wire is beaten flat, and the pointed piece standing up in the centre of the label pressed down over it. This allows the label to be passed into the ground, and prevents it turning round with the wind. The wire should be about a foot long, and be passed into the ground till the base of the label just enters the surface. I used those for Roses last year, and think they answer the purpose well. They are neat, not conspicuous, and present the writing in the most convenient position to the eye; and as your correspondent says, when the name gets illegible they have only to be cleaned and re-written to be as good as new.—R. INGLIS.

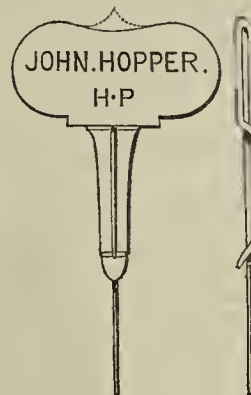


Fig. 66.

For those who do not wish for such an elaborate-shaped label a plain one is recommended, as it can be cut out quickly, because one cut helps to form two labels, and also because straight lines are much easier to cut than curved. Each label is half a hexagon, and consequently there is no waste of zinc, unless a small piece at the ends of each alternate line (which, however, can be formed into a smaller triangular-shaped label). This arrangement reminds me of the hexagonal cells of honeycomb, which

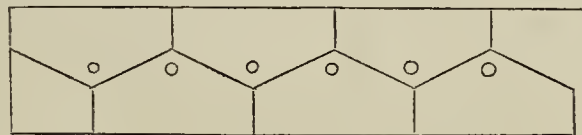


Fig. 67.

as is well known, is a model of economy of space and strength. The labels are cut out more quickly when two rows are marked on the sheet at a time, and the slip cut off. If the end label is always cut off as delineated it is obvious that the "snips" will not have to turn any corners, which takes up time and necessitates bending the zinc. The labels can be made of any required size.—W. KRUSE.

CHRYSANTHEMUM SHOWS.

RICHMOND.—NOVEMBER 5TH AND 6TH.

FIVE autumn exhibitions have now been held by the Richmond Horticultural Society, and that which took place on Thursday and Friday last will bear comparison with any of the preceding ones, for though perhaps less extensive than some, it was equal to the best in quality. The Committee, with the courteous Secretary, Mr. J. Ford, have worked most perseveringly to render their Chrysanthemum shows successful, but hitherto, though quite satisfactory horticulturally, there have been some disagreeable financial deficits that rather seriously decreased the balance obtained from the summer shows. It is to be hoped, therefore, that the result this year will be more favourable in this respect, and that the autumn exhibition may become as firmly established as the annual show in the Old Deer Park. The Assembly Rooms, Castle Hotel, were again chosen for the Exhibition, which was visited during the afternoon of the first day by Princess Mary and the Duke of Teck, attended by a number of friends.

Cut blooms formed the leading feature of the Show, and were generally very even and good, so that in several of the principal classes the Judges had a difficult task in making the awards. The Society, with a spirited liberality, had provided a class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, the prizes being £10, £6, and £4, and though this did not induce so many competitors to enter as might have been expected, yet the blooms staged were of excellent quality and were greatly admired. Five collections were staged, Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, being the winner of the substantial first prize with handsome solid blooms of the following varieties, reading their names from left to right as they were in the stands. Incurved—back row—Queen of England, Prince Alfred, Empress of India, Refulgence, Lord Alcester, Lord Wolseley, Princess of Wales, and Alfred Salter. Second row—Yellow Perfection, White Beverley, John Salter, Novelty, Princess Beatrice, White Venus, Mr. Bunn, and Beethoven. Front row—Lady Hardinge, Prince of Wales, Mrs. Dixon, Mrs. Rundle, Mrs. Shipman,

Venus, Golden Eagle, and Mr. G. Glenn. All these were admirable representatives of their varieties, and some were exceptionally fine. Japanese—back row—Madame Berthie Rendatler, Jeanne Delaux, Elaine, Criterion, Fernand Feral, Mons. Delaux, M. Tarin, and Mdlle. Lacroix. Second row—Comte de Germiny, Madame C. Audiguier, Mdlle. Moulise, Madame de Sevin, M. Astorg, Peter the Great, and Val d'Andorre. Front row—Cry Kang, Fanny Bouchardat, Flamme de Punch, Comtesse de Beauregard, M. Ardene, Fulgor, Ethel, and Magnum Bonum. These were remarkably fresh and rich in colour, though we doubt if Mr. Gibson has included his best blooms. The second prize was awarded to Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, for a praiseworthy collection of fine blooms, close in merit to those in the preceding stand. The incurved, though slightly smaller, were very neat, and the Japanese were of good substance, including some of the most effective exhibition varieties, together with a sport from Baronne de Prailly with irregularly cut florets of a yellow colour faintly edged with bronzy red. Mr. A. Elphick, gardener to J. Clutton, Esq., The Orchard, Reigate, was third with a creditable stand of blooms.

Mr. Sullivan had the best twenty-four incurved blooms, neat, compact, even blooms, Princess Beatrice, Mr. Shipman, Queen of England, and Mr. G. Glenn being notable varieties. Mr. J. Bennet, Feldheim Gardens, Wimbledon, following very closely with clean and beautiful blooms. The class for twelve incurved varieties brought some good samples, Mr. E. Combs, gardener to W. Furze, Esq., Teddington, gaining first honours for a highly satisfactory collection, comprising Queen of England, Golden Empress, Empress of India, Lord Alcester, Lord Wolseley, Prince of Wales, Alfred Salter, Prince Alfred, Jeanne d'Arc, Mr. Bunn, John Salter, and White Beverley. Mr. Elliott and Mr. Woodgate, gardeners to Lord Wolverton, Warren House, Combe Wood, followed in the order named, each showing well.

A class was devoted to twenty-four Japanese varieties, not less than eighteen varieties, and in this Mr. Bennett, Feldheim Gardens, took the lead with handsome substantial blooms of Madame C. Audiguier, Mdlle. Lacroix, Criterion, Val d'Andorre, Jeanne Delaux, Joseph Mahood, Flamme de Punch, M. Desbrieux, Henri Jacotot, amongst others nearly as fine. Mr. Woodgate was second, showing M. Burnett, M. John Laing, La Nympe, Criterion, Henri Jacotot, Mr. Townsend, and Madame de Sevin. The first place for twelve Japanese was adjudged to Mr. Benson, who had particularly notable examples of Madame Berthie Rendatler, Comte de Germiny, M. John Laing, Mdlle. Lacroix, Val d'Andorre, Soleil Levant, and Baronne de Prailly. Mr. Munro, Cambridge House Gardens, Twickenham, and Mr. Coombs were second and third respectively. Mr. Munro being first with six Japanese of one variety, with Madame C. Audiguier, large and substantial. Anemone varieties were well shown by Messrs. Sullivan and Bennett.

Plants were not so numerous, the groups of Chrysanthemums arranged for effect constituting the chief portion of the display. Mr. W. Champion gardener to T. Cave, Esq., Queensberry House, Richmond, secured first honours with a tasteful group of dwarf plants, the incurved blooms being very fine. Mr. Munro was second with taller plants, and rather more Japanese. Mr. J. Rooke, gardener to J. B. Hilditch, Esq., Asgill House, and Mr. Sallows, gardener to J. J. Flack, Esq., Twickenham, following, both with tall plants. The last named had the best six trained specimens, but the sticks were much too thick and prominent, except in Hiver Fleuri and L'ile des Plaisirs, which were about 5 feet in diameter, and bearing over 100 blooms each. Mr. Elliot, gardener to Mrs. Harrison, Leydon House, Mortlake, was first with three standards, very evenly trained, and well clothed with foliage. Messrs. Hooper & Co., Covent Garden, contributed the most tasteful group of miscellaneous plants, Mr. W. Brown, Mr. G. Tilsell, and Mr. Chard following.

In the classes for fruit Mr. Bates, gardener to Mrs. Meek, Poulett Lodge, was the principal exhibitor, being first with six dishes of fruit in the Society's class, and for Lady Parker's prizes also; Messrs. Champion, Osman, and Munro securing the other awards. Mr. W. Champion was first in the black Grape class with Gros Colman, finely coloured. Mr. W. Howe, gardener to H. Tate, Esq., Streatham, was second with large bunches of Alicante; and Mr. Osman third with the same variety smaller. Mr. Bates led in the white Grape class with Muscat of Alexandria, very clean, even, large berries superbly coloured. Apples, Pears, vegetables, and stands of flowers, with several non-competing exhibits, such as the group of 150 Cyclamens from Messrs. Page & Son, with the tasteful bouquets and wreaths from Mrs. H. B. Smith, Ealing, added materially both to the extent and interest of the Show.

HAVANT.—NOVEMBER 5TH AND 6TH.

THIS Society held its second annual Exhibition of Chrysanthemums fruit, and vegetables at the Town Hall, Havant, on the 5th and 6th inst. The Show taken as a whole was a marked improvement upon that of last year, many of the cut blooms being remarkably fine. There was very strong competition in the vegetable classes, which occupied a spacious tent to themselves. The principal class for plants was for groups of Chrysanthemums to cover 40 feet. This space not putting too much pressure on the exhibitors enabled very pretty groups of good quality to be arranged, Messrs. White, Fuller, Moseley, and Kinchott taking the awards in order named. Several other classes for plants were well filled, especially those for cottagers. In the cut bloom classes the greatest competition was for twenty-four blooms, twelve incurved and twelve Japanese, distinct. Most of the stands contained some conspicuously good blooms; but Mr. Penfold, gardener to Sir F. Fitzwygram, Bart., M.P., Leigh Park, was a good first with the following:—Incurved—Golden and White Empress of India, Queen of England, Jeanne d'Arc, Lord Wolseley, Prince Alfred (grand), Mrs. W. Shipman, Lady Hardinge, Alfred Salter, Princess Imperial, Lady Carey (good), and Jardin des Plantes. Japanese—Oracle, Fernand Feral, Balmoreau, Elaine, Jeanne Delaux (extra fine), Fair Maid of Guernsey, Madame C. Audiguier, Mons. Ardene, Soleil Levant, Hiver Fleuri, Comte de Germiny, and Fanny Bouchardat. Mr. W. White, gardener to J. E. Cox, Esq., came in second; and Mr. Roberts, gardener to E. R. Longcroft, Esq., third. Mr. Penfold also secured first honours for twelve Japanese, twelve incurved, twelve Anemones in six varieties, and for twelve blooms (four each) incurved, Japanese, and reflexed. The latter were all splendid blooms,

but we think a class of this description should exclude prizetakers in the larger classes and give a chance to smaller growers, who are unable to bring forward complete stands of any one class. Mr. Leng, jun., obtained first prize for a very beautiful stand of the Rundle family in couples, and Mr. Roberts was first in the reflexed class. Other successful exhibitors were Messrs. Fuller, Woodbine, Moseley, Kinchott, and the Rev. R. J. Wells.

CRYSTAL PALACE.—NOVEMBER 6TH AND 7TH.

THE Exhibition held at "the Palace" on Friday and Saturday last will be one of the most memorable of the season, if only for the remarkable successes scored by the noted cultivator, Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, who secured no less than seven first prizes in close competition. One of these was a decided victory and something to be proud of—namely, the premier award in the class for forty-eight blooms (twenty-four incurved and twenty-four Japanese not less than eighteen varieties of each), which he won with a collection of extraordinary merit, the blooms generally extremely large and well proportioned, though a few of the incurved were too flat to satisfy such a critic as Mr. E. Sanderson. The Japanese were wonderfully fine in substance and colour, while several of the incurved, such as Alfred Salter and John Salter, were as near perfection in all points as could be imagined, two of the weakest blooms being Emily Dale and Jardin des Plantes. The varieties were as follows, naming them in the order as they were arranged from left to right. Incurved—back row—Queen of England, Lord Alcester, Queen of England, Alfred Salter, Empress of India, Alfred Salter, Lord Alcester, and Empress of India. Second row—Jeanne d'Arc, Princess of Wales, Emily Dale, Lord Wolseley, Princess of Wales, Emily Dale, John Salter, and Golden Empress. Front row—Empress Eugénie, Jardin des Plantes, Prince Alfred, Princess Beatrice, Refulgence, Lady Hardinge, Mr. Bunn, and Nil Desperandum. In the Japanese the very beautiful variety, Belle Pauline, which has long slightly recurved florets, white, edged with bright purple, was very attractive, the new Val d'Andorre being grandly represented both as regards size and colour. The varieties were as follows:—Back row—Madame C. Audiguier, Fair Maid of Guernsey, Belle Pauline, Val d'Andorre, Baronne de Prailly, Val d'Andorre, Meg Merrilees, and Madame C. Audiguier. Second row—Sceptre de Toulouse, Jean Delaux, Criterion, Madame Deville, Meg Merrilees, Madame B. Rendatler, Belle Pauline, and Criterion. Front row—Boule d'Or, Mdlle. Lacroix, Margaret Marrouch, Elaine, Duchess of Albany, Madame de Sevin, Soleil Levant, and M. Astorg. Highly commendable blooms have been frequently shown by Mr. Molyneux, but we do not think he has surpassed this effort, considering the qualities of both incurved and Japanese. There were eleven other competitors, but none of them came within many points of the winning collection, though Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Metcham, was a good second, for his incurved, if not quite so large or well dressed, were even and of good proportions. The Japanese were the stronger blooms, such varieties as M. Bouchardat, M. Astorg, Madame de Sevin, L'Incomparable, Margaret Marrouch, Jeanne Delaux, Criterion, Val d'Andorre, and Mdlle. Lacroix being capitally shown; while in the incurved were fine blooms of Lord Wolseley, Prince Alfred, Prince of Wales, Queen of England, and Refulgence. The other prizes were awarded to Messrs. W. & G. Drover, Fareham, Hants, and A. Holmes, gardener to A. B. Hill, Esq., South Road, Clapham Park.

The good blooms were not, however, confined to the great class; for in all the others the samples staged were much above the average, and the competition keen, so that none of the prizes were very easily gained. Mr. Molyneux repeated his success in the class for eighteen incurved varieties, staging beautiful blooms of Golden Empress, John Salter, Alfred Salter, Lord Alcester, Queen of England, Empress of India, Cherub, Empress Eugénie, Princess of Wales, Lord Wolseley, Emily Dale, Sir Stafford Carey, Mr. Bunn, Prince Alfred, Refulgence, Jeanne d'Arc, Jardin des Plantes, and Novelty. Mr. E. Berry, Roehampton House Gardens, was second (Lady Slade and Alfred Salter were the two best blooms), and Mr. J. Holmes, gardener to G. M. Storey, Esq., Nightingale Lane, was third with an even collection. Mr. Molyneux gained the principal award for six incurved varieties of one variety with excellent blooms of Alfred Salter, fresh, clean, and beautifully formed.

Japanese varieties were extremely fresh and substantial, the colours being exceedingly bright. Eight stands of eighteen varieties.—Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, secured premier honours with charming examples of Dr. Macary, Japonaise, Jeanne Delaux, Fair Maid of Guernsey, Madame C. Audiguier, Chang, Comte de Germiny, The Daimio, Madame B. Rendatler, M. John Laing, Soleil Levant, M. Tarin, Red Gauntlet, Peter the Great, Madame Deville, Criterion, Madame de Sevin, and Mdlle. Lacroix. The second and third prizes were gained by Mr. J. W. Springbelt, Cheshunt, who had M. Henri Jacotot very fine, and Mr. A. Berry, who staged a grand example of Criterion. Twelve stands of a dozen blooms were contributed, Mr. J. Brown, gardener to A. J. Waterlow, Esq., Great Doods, Reigate, taking the lead with Madame C. Audiguier, M. John Laing, Japonaise, Val d'Andorre, M. Astorg, Criterion, J. Delaux, Fanny Bouchardat, Comte de Germiny, Pride of Reigate, Madame B. Rendatler, and Dr. Macary. In this class Mr. Molyneux had to be contented with second place, though he had some fine blooms of Belle Pauline, Val d'Andorre, Madame C. Audiguier, Elaine, and M. Astorg. Mr. J. Wyatt, gardener to J. Perry, Esq., Bradenhurst, Caterham Valley, was third with bright neat blooms. For six Japanese of one variety Mr. Molyneux was first with Madame C. Audiguier, six magnificent blooms about 7 inches in diameter and as much in depth. Mr. C. Orchard, gardener to J. Galsworthy, Esq., Coombe Warren, Kingston, was a very close second with M. Henri Jacotot of excellent substance and superb colour. Mr. G. Burnett, gardener to Mrs. Fenton, The Grange, Hillingdon, was third with Triomphe du Nord, considerably finer than it is usually seen.

Reflexed blooms were well represented, Mr. Molyneux leading with twelve, not less than eight varieties, and staged capital specimens of Mdlle. Madeleine Tezier, Golden Christine, King of the Crimsons, Distinction, Dr. Sharpe, Felicity, Phidias, Cullingfordi, brilliant colour, and Pink Christine. Mr. T. Sadler, gardener to C. Lambert, Esq., Streatham, was second, also having Cullingfordi, very fine, with Cloth of Gold and Phidias; Mr. Chadwick being third with smaller blooms. The best twelve Anemones came

from Mr. E. S. Cole, Woodside Gardens, Snayd Park, Bristol, including the varieties Lady Margaret, Empress, Georges Sands, Gluck, Fleur de Marie, Prince of Anemones, Acquisition, and Margaret of Norway. Mr. T. J. Sadler and Mr. Chadwick were second and third, one stand being disqualified for containing blooms of Emperor, which was considered as a Japanese Anemone, though it has been frequently shown in stands of large Anemones. Mr. Molyneux took the lead with twelve Anemone Pompons, having bright blooms of Mr. Astie, Perle, Antonius, Margaret de Coi, Regulus, Madame Montels, Marie Stuart, and Miss Nightingale. Mr. Cole contributed the best six Japanese Anemones, showing two blooms each of Madame Brethie Pigmy, Sœur Dorothee Souille, and Madame Clos. Mrs. Springbett followed with Fabian de Mediana, Sœur Dorothee Souille, and Madame Clos. A beautiful collection of twelve Pompons from Mr. Molyneux gained the premier prize in the class. The varieties were Pygmalion, La Purété, President, Black Douglas, Eleonore, Golden Circle, Prince of Orange, Adele Prissette, Madame Marthe, Rose d'Amour, and Prince Victor.

Groups of Chrysanthemums constituted the principal portion of the display in the plant classes, the specimens not being very remarkable. In the amateurs' class for a group to occupy a space of 50 square feet Mr. C. Orchard easily won the premier honours with a very beautiful and tastefully arranged group of well-grown plants, bearing handsome blooms, both incurved and Japanese being admirable, while a suitable proportion of dwarf plants afforded an agreeable finish to the group. The handsome reflexed variety Cullingfordi was very good, as was also M. Henri Jacotot. Mr. W. Webster, gardener to Mrs. Croll, Mavis Bank, Grange Road, Upper Norwood, and Mr. C. S. Bowman, London Road, Croydon, were second and third, each putting up bright effective collections. Two classes were devoted to nurserymen's groups, one for incurved varieties and the other for Japanese, the principal prizes being secured by Mr. G. Stevens, Putney, and Messrs. J. Laing & Co., Forest Hill; followed by Messrs. J. Carter & Co., and G. Edwards, Balham. In the other plant classes the best specimens were shown by Messrs. E. Cherry, Weston, Portway, W. Clark, and Howes.

First-class certificates were awarded for the following new varieties, a bronze sport from Queen of England, shown by Messrs. J. Carter & Co., being commended.

M. John Laing (J. Laing & Co.).—A Japanese variety, with blooms of excellent substance, the florets fluted, recurved, and of a dark bronze red; very distinct and effective.

Madame Laing (J. Laing & Co.).—A Japanese variety. The florets broad and flat, white, with a tinge of purple or blush. The blooms come of good size and are then very handsome.

KINGSTON-ON-THAMES—NOVEMBER 10TH AND 11TH.

THE ninth annual Show of the Kingston and Surbiton Chrysanthemum Society was held in the Drill Hall at Kingston on Tuesday and Wednesday, and, as usual with the exhibitions of this flourishing and well-managed organisation, was a great success. Several of the most renowned growers in the south of England were amongst the exhibitors, the competition was good in most of the classes, and the exhibits were well up to the average in point of quality. Great interest was vested in the competition for what may be described as the most important prize—namely, the challenge vase for forty-eight cut blooms, which must be won twice by one exhibitor. As many readers may remember, Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, secured a previous cup with two consecutive wins, and he was also successful last year, so that a victory on the present occasion would insure the second cup finally passing into his possession. His old and able opponent, Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, was, however, known to be showing remarkably well, and thus the result of the struggle between the two was watched with the keenest interest. The verdict was in favour of Mr. Molyneux, who has thus a splendid record of four consecutive victories, and the superiority of his blooms was even more marked on the present than on previous occasions. Details of results in this and other classes are as follows:—

CHALLENGE VASE.—For twenty-four Japanese and twenty-four incurved flowers, Mr. Molyneux was first with grand specimens of the following, the names being read from left to right:—Japanese, back row—Fair Maid of Guernsey, Sceptre Toulouse, Belle Pauline, Val d'Andorre, Criterion, Madame C. Andiguier, J. Delaux, and Baron de Prailly. Middle row—M. Ardene, Soleil Levant, Madame B. Rendatler, Balmoreau, Meg Merrilies, Boule d'Or, Dormillier, and Duchess of Albany. Front row—Mlle. Lacroix, Margaret Marrouch, Mons. Burnet, Golden Dragon, Madame de Sevin, Elaine, John Laing, and Album Plenum. Incurved, back row—Lord Alcester (a very fine bloom), Princess of Wales, Emily Dale, Alfred Salter, Golden Empress, Mrs. Howe, Empress of India, and Queen of England. Middle row—Lord Wolsley, Jardin des Plantes, Prince Alfred, Princess of Teck, Hero of Stoke Newington, Jeanne d'Arc, Empress Eugénie, and Sir Stafford Carey. Front row—Lady Harlinge, Nil D'sp randum, Eve, Lady Carey, Mr. Bunn, Rev. J. Dix, Barbara, and Mrs. Heale. The blooms were remarkable both for size and symmetry, and also for "finish," for which Mr. Molyneux's flowers are famous. Mr. Gibson was second, showing Japanese varieties exceptionally well, and with incurved flowers as good as, if not better than, he has shown before here. Mr. E. Coombs, gardener to W. Furze, Esq., Teddington, was a very fair third; and Mr. Rogers, gardener to C. S. Wilde, Esq., Cheam House, Cheam, fourth. Two other collections were shown. It may be said that the Japanese blooms in the stands of Messrs. Molyneux and Gibson were about even in point of merit, but the Swanmore incurved flowers were far in advance of those from Morden Park, while those in turn were distinctly ahead of the Teddington blooms.

CUT BLOOMS.—Incurved.—The chief class was that for twenty-four flowers, and Mr. Molyneux again won easily, showing the same varieties as those already named, and including some very fine specimens. Mr. G. Woodgate, gardener to Lord Wolverton, Warren House, Kingston, was second, showing much smaller but wonderfully neat blooms. Mr. Coombs was third, and Messrs. W. & G. Drover, nurserymen, Fareham, fourth. One other stand was in competition. For twelve blooms Mr. A. Carter, gardener to Alderman and Sheriff Evans, Ewell Grove, Ewell, was first; Mr. G. King, gardener to R. Few, Esq., Wolsey Grange, Esher, second; and Mr. Watson, gardener to Captain Cundy, Southborough Park, third. Three other stands were shown. For six blooms Mr. Benson secured the first

prize very easily, showing Empress of India, Queen of England, Golden Empress, Lord Alcester, Hero of Stoke Newington, and Lord Wolsley, all good. Mr. Slade was second. The class for six blooms of one variety found Mr. Molyneux again to the fore with fine specimens of Princess of Wales, this being the fourth time consecutively he has won the prize in this class with the same variety. Mr. Benson was second with good blooms, and Mr. King third. Ten collections of six were staged by previous non-prize-winners. Mr. Trussler, gardener to J. Shand, Esq., Fullbrooks, Old Malden, being first; Mr. Holden, gardener to Mrs. Izod, Esher, second; and Mr. F. Cawte, gardener to D. Brand, Esq., Ashdown Lodge, Walton, third.

Japanese—twenty-four blooms.—First, Mr. Molyneux; second, Mr. King; third, Mr. Woodgate; fourth, Mr. Munro, Cambridge House Twickenham. The first-prize flowers were excellent, but it was evident that the exhibitor had thrown his strength into the cup class. Five stands were staged in all. Five were also in competition with twelve blooms, the first prize going to Mr. A. Carter, the second to Messrs. Drover, and the third to Mr. Holden. Both first and second were fairly good. For six blooms Mr. Benson, gardener to W. H. Roots, Esq., Caubury House, Kingston, was first with excellent flowers of Mlle. Lacroix, Boule d'Or, M. Farren, Val d'Andorre, Meg Merrilies, and The Sultan. Mr. Slade, gardener to Lady Bowater, Richmond Park, was second; and Mr. Read, Broadwater House Gardens, Otlands Park, third. For six blooms of one variety only Mr. Molyneux was an easy first with magnificent specimens of Belle Pauline, Mr. Slade was placed second with Madame Andiguier, and Mr. King third with Mlle. Lacroix. Two others exhibited. No less than eleven entered in the class provided for those who had not previously won a prize. Mr. Glover, gardener to W. Evill, Esq., Worcester Court, Worcester Park, was first, Mr. F. Cawte second, and Mr. Rosier, Gordon House, Ham Common, third.

For twelve reflexed flowers, Mr. Molyneux was again first, showing beautiful specimens of:—Back row—Mlle. Madeline Tezier (2), Golden Christine, and Cloth of Gold. Middle row—Distinction, Dr. Sharpe, Golden Christine, and Cloth of Gold. Front row—Phidias, Cullingfordi (2), and Pink Christine. The second prize went to Mr. Coombs, and the third to Mr. Slade.

Twelve Anemone-flowered:—First Mr. Gibson with the following:—Back row—Lady Margaret (2, splendid flowers), Gluck, and Acquisition. Middle row—Mrs. Pithers, Georges Sand, Gluck, and Prince of Anemones. Front row—Fleur de Marie, Prince of Anemones, Madame Goderau, and Georges Sand. The second prize was awarded to Mr. Slade, and the third to Mr. Molyneux. The last-named exhibitor showed Japanese Anemone-flowered varieties splendidly, and was awarded the first prize. His stand was composed of the following varieties:—Fabian de Mediana, Sœur Dorothee Souille, Mlle. Cabrol, and Margaret Villageoise. Mr. Benson was first for twelve bunches of Anemone Pompons, the following varieties being shown:—Astrea, Grace Darling, Mabel, Miss Nightingale, Antonius, Jeanne Hatchett, Marguerite de Coi, and Firefly. Mr. Molyneux was placed second.

GROUPS.—For the best collection of Chrysanthemums in pots, Mr. J. Buss, gardener to A. S. Price, Esq., Parkside House, Ewell, secured the premier prize. Sturdy, healthy plants, with flowers of good size and admirably arranged, gained him the award. Mr. Glover was placed second, and Mr. Moorman, gardener to Miss Christy, Coombe Bank, Kingston Hill, third. All these groups were of great excellence, the dwarf plants of Val d'Andorre and others less than 2 feet high with splendid foliage and blooms, in the first-prize arrangement, attracting much attention.

For six dwarf-trained incurved specimens with single stems Mr. King was first with Mr. G. Glenny, Prince of Wales, Mrs. Geo. Rundle, Mrs. Dixon, Barbara, and Golden Empress, the three first-named being very fine plants. Mr. H. Trussler was a very close second. Mr. Sallows, gardener to J. J. Flack, Esq., Hampton Road, Twickenham, was adjudged the first prize for three plants, showing Prince Alfred, Mrs. Dixon, and Mr. G. Glenny. No others competed. Mr. King was first with Mrs. George Rundle for a single specimen, and Mr. Sallows second with the same variety. Mr. Elliott, gardener to Mrs. Harrison, Leyton House, Mortlake, was to the fore with three standards, the varieties being Mr. Geo. Glenny, Mrs. G. Rundle, and Mrs. Dixon, beautifully trained specimens. Mr. Trussler was second with excellent plants, and Mr. Sallows third.

For three trained Japanese Mr. G. King took first prize, showing grandly flowered plants of Bouquet Fait, Safranum, and La Nympe. Mr. Sallows received the second prize, and Mr. Trussler the third. The two last-named exhibitors were first and second respectively for a single plant.

For a miscellaneous group of plants Mr. Glover, with a bright and nicely arranged collection, including Orchids, Carnations, Chrysanthemums, Primulas, &c., interspersed with Ferns, Crotons, and other foliage plants; and Mr. Tilsell, gardener to R. Graves, Esq., Hatfield House, Twickenham, with a most tastefully and delicately arranged group, largely composed of Ferns and fine-foliage plants, were placed equal first. A third prize was awarded, but the card was not placed on the group.

TABLE PLANTS.—Mr. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Esher, was first for nine plants; Mr. Bates, gardener to Mrs. Meek, Poulet Lodge, Twickenham, second; and Mr. King third. For six plants Mr. H. Trussler was placed first, Mr. Buss second, and Mr. Carter third, all staging neat, fresh, and clean examples. Prizes were also offered for amateurs and cottagers; but their exhibits, though many were fairly good, were only of local interest. Some remarkably pretty vases of cut flowers, berries, and foliage, and others of Ferns and Grasses, were much admired.

NEW CHRYSANTHEMUMS.—Blooms of half a dozen new varieties were staged, and after undergoing a close examination by the Judges certificates were awarded for the following:—

Belle Pauline (exhibited by Mr. Molyneux).—It is a Japanese variety; large full bloom, with flat long drooping florets, white clearly margined with deep lilac or light purple. A very fine and, as grown, very charming variety. A similar honour was awarded to Messrs. T. Jackson & Son for blooms of the same variety.

Roseum Superbum.—Large full symmetrical blooms, with rather narrow, drooping, but only slightly twisted florets; prevailing colour pink suffused with amber. This is also a Japanese form, somewhat like Margot, and was exhibited by Messrs. Jackson.

Cullingfordi.—Mr. Orchard exhibited a plant in a 7-inch pot of this—the richest of all Chrysanthemums. A grand reflexed flower, velvety crimson-scarlet, one of the blooms being 5 inches in diameter, and the certificate was worthily awarded.

FRUIT.—Some very good collections of fruit were staged, and a splendid lot of Apples and Pears. In the class for a collection of six dishes Mr. Bates, gardener to Mrs. Meek, Ponlett Lodge, Twickenham, was first with an excellent Pine, Grapes, Pears, and Apples. Mr. Monro, Cambridge House, Twickenham, second, and Mr. W. Davis, gardener to J. P. Chappell, Esq., Teddington, third. In the class for four dishes of Apples Mr. Child, gardener to Mrs. Slade, Claygate, was first; Mr. Atrill, Bank Grove, Kingston, second; and Mr. T. H. Cushion, gardener to P. Bancroft, Esq., Norbiton Park, third. Pears.—Mr. King, gardener to R. Few, Esq., Norbiton Grange, was first, some others being passed because they were not in accordance with the schedule.

MISCELLANEOUS.—Prizes for berried plants were awarded to Messrs. King, Glover, and Cushion; and for Primulas to Messrs. Carter, Neave, and Buss. Messrs. T. Jackson & Son staged an excellent assortment of fruit, and very productive Vines in pots.

A group of beautiful Tree Carnations from Messrs. Hooper & Co., nurserymen and seedsmen, Covent Garden, London, was much admired, as also was a fine collection of Cyclamens exhibited by Messrs. Page & Son, Grove Nursery, Teddington.

The Show was admirably managed by Mr. T. Jackson the efficient Secretary and his experienced coadjutor Mr. Puttock.

STOKE NEWINGTON—NOVEMBER 9TH AND 10TH.

THE backward season has evidently seriously affected the Chrysanthemum growers in the north of London, and the Exhibition which has been most famed for their productions was in consequence both smaller and less notable for the quality of blooms than is usually the case. Incurred blooms are almost invariably remarkable for their neatness and symmetry at the Stoke Newington Show, and it is not often that blooms of unusual size are staged, but we have seen the collections much more even than they were on Monday last, and the plants were not at their best. The Assembly Rooms, Defoe Road, Church Street, was selected for the Exhibition, and a pretty effect was produced by the stands of blooms and specimen plants, the former occupying a row of tables in the centre of the room, the plants being arranged near the walls. Mr. W. J. Smith, Stoke Newington, had an imposing contribution of fruits, and some of the best cut blooms in the Show was a stand of twenty-four from Mr. Cochrane, Superintendent, Finsbury Park.

The principal cut bloom class was that for twenty-four blooms, distinct varieties, in which Mr. S. Gilbey, gardener to B. Booth, Esq., Cazeuoves, Upper Clapton, won the premier award with clean, even, medium size blooms, amongst which the following varieties were most remarkable:—Empress of India, Alfred Salter, Golden Queen of England, Mrs. Heale, Lord Alcester, Jeane d'Arc, Golden Empress, and Queen of England, the others being rather small second and third row blooms. Mr. Payne, gardener to W. A. Mitchell, Esq., Greenville, Upper Clapton, was second. In the open class for twenty-four incurred blooms, distinct varieties, Mr. Monk, gardener to W. Fowler, Esq., Forest House, Leytonstone, was placed first with good medium size examples, comprising a very fine fresh bloom of Mrs. Heales and an old one of Princess of Wales, quite white, and so much like the preceding that some experienced judges considered them identical. Other noteworthy varieties were Nil Desperandum, Refulgence, Queen of England, John Salter, Lord Alcester, Hero of Stoke Newington, Jardin des Plantes, Prince of Wales, Empress of India, Baron Beust, Lady Hardinge, Venus, and Empress Eugénie. The second prize was awarded to Mr. Peers, gardener to F. Cater, Esq., Enfield Highway, who had Lord Alcester, Princess of Wales, and Prince Alfred very fine. The best twelve incurred were shown by Mr. W. Payne, and the next by Mr. Martin, gardener to H. Matthews, Esq., The Cedars, Woodberry Down. Mr. S. Gilbey took the lead with six incurred, and Mr. F. Bingham held a similar place in the local class for twelve incurred, followed by Mr. W. Goldsmith. Japanese varieties were not quite so well represented; Mr. Monk, however, had a good stand of twelve blooms, being first in the class, Val d'Andorre, Golden Dragon, Madame B. Rendatler, Comte de Germiny, Fulton, and Madame de Sevin being the finest specimens. Mr. Calvert, gardener, Southwood, staged the leading six Japanese, the varieties being Comte de Germiny, Boule d'Or, Mons. Astorg, Madame C. Audiguier, La Nympe, and Margaret Marrouch. A class was provided for thirty-six blooms, twelve each of incurred, Japanese, and Anemones, but such classes are rarely satisfactory, and there were few entries.

Specimen plants are commonly well shown at Stoke Newington, especially by Mr. Monk, who this year also contributed materially to the Exhibition, winning premier honours for nine plants, but not quite in his usual style. These were half-globular or pyramidal specimens, evenly trained and freely flowered, the varieties being Tokio, La Nympe, Triomphe du Nord, Sœur Melanie, Dr. Sharp, John Salter, George Glenny, Mrs. G. Rundle, and Mrs. Dixon. The second place was obtained by Mr. G. Davey, gardener to C. Paine, Esq., Cedar House, Stamford Hill; the specimen of Madame B. Rendatler was an excellent one, but the others were not quite out. Mr. S. Gilbey contributed the best four plants, standards of Cossack, Bouquet Fait, Gloire de Toulouse, and Cry Kang. The same exhibitor also had the finest four dwarf specimens, other competitors being Messrs. Monk, Lovegrove, and Bass.

The exhibits were well arranged by the Hon. Secretary, Mr. W. Goldsmith, who is most assiduous in the interests of the Society, and it is to be hoped that the season next year will admit of the Show regaining some of its former prestige.

PUTNEY.—NOVEMBER 10TH AND 11TH.

THIS Society has now been established eight years, and its shows have gradually taken a position amongst the best local exhibitions around the metropolis. This year the Show was an uncommonly good one in all respects, and some considered it the most satisfactory of the series the Society has held. The classes were remarkably well filled, the competitors staging very even collections of blooms, while the groups of plants arranged for effect were the best shown this season at any exhibition up to the present time. The specimen plants were the weakest portion of the display, as they

are at most shows, but in the miscellaneous classes for other plants, fruit, including Apples, Pears, and Grapes, and vegetables, the entries were numerous and the exhibits of good quality. The Assembly Rooms, High Street, Putney, where the Show was held, is rather too small, but the arrangement was carefully superintended, and there was no appearance of crowding, while every part of the hall was effectively furnished. The weather on Tuesday was most unfavourable, and it was therefore fortunate that it had been decided to keep the Show open two days instead of one. The practical Committee and Honorary Secretary, Mr. J. Moore, deserve much credit for the praiseworthy Exhibition provided, and it is to be hoped that a substantial favourable balance will reward their efforts.

Owing to the pressure on our columns this week we can only give a brief survey of the principal classes to indicate the general character of the Show. The groups of Chrysanthemums arranged for effect were the strong feature; Mr. Knowles, gardener to Mrs. Egerton, Solna, Putney, winning first honours with a superb collection of healthy plants bearing blooms of wonderful substance, a large proportion being suitable for placing in the cut-bloom classes. The incurred were grand, and the Japanese also of the most beautiful varieties were well represented. They were tastefully arranged, and in all respects it was one of the best groups we have seen. Mr. G. Stevens, Putney, was second, staging good plants, his incurred being extremely fine. Mr. Newell, Fairlawn Gardens, Wimbledon, followed with a very tasteful group of dwarf plants; and Mr. J. Carter, gardener to H. J. Parry, Esq., Heathside, Wimbledon, was fourth. The premier group of miscellaneous plants came from Mr. Methven, gardener to W. Keiller, Esq., Fernwood, Wimbledon, consisting of Dracenas, Heaths, Deudrobium nobile, and Crotons effectively and gracefully arranged; Mr. J. Batten, gardener to A. Venables, Esq., Hollywell House, Wimbledon, taking the second place with a pretty group, in which Impatiens Sultan, Primulas, and Ferns predominated. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was first with four foliage plants, having three well-coloured Crotons and a good Anthurium crystallinum. Mr. Woodham had the best four Ferns, and in the specimen Chrysanthemum classes the finest examples were from Mr. J. Bentley, gardener to Sir Thomas Gabriel, Edgecumbe House, Wimbledon, and Mr. C. Bentley, gardener at The Cedars, Roehampton. There were six neat lots of half a dozen table plants, Messrs. Methven, Bentley, and Smith taking the prizes in that order.

In the cut bloom classes there was some keen competition, and in that for twenty-four incurred varieties five exhibitors staged close even collections. Mr. H. Holmes, gardener to A. B. Hill, Esq., South Row, Clapham Park, secured the chief prize for excellent blooms of slightly more substance than those in the second stand from Mr. Sullivan, though there were few points difference between them. Some of Mr. Holmes' best blooms were Queen of England, Golden Empress, Lord Wolseley, Lord Alcester, Prince Alfred, John Salter, Empress of India, Barbara, Beverley, Mrs. Heale, Lady Hardinge, and Cherub. Mr. J. Bentley was placed third with a stand of twelve incurred. Mr. Sullivan took the lead with capital blooms, followed by Messrs. J. Bentley and A. Holmes, while for six incurred Mr. J. C. Grant, gardener to J. Brunlers, Esq., Argyle Lodge, Wimbledon, Mr. C. Bentley, and Mr. J. Batten were the prizetakers in that order. The exhibits of twelve Japanese varieties were close and good, Mr. J. C. Grant gaining the principal award for substantial blooms, in which Mr. Ardene, Madame C. Audiguier, Madlle. Lacroix, Henri Jacotot, M. Astorg, John Laing, and J. Delaux (F. A. Davis) were notable. Mr. Sullivan and Mr. W. Smith, gardener to J. F. Schwann, Esq., Oakfield, Wimbledon, were second and third. Mr. C. Bentley staged the best six Japanese, handsome blooms of Boule d'Or, J. Delaux, Yellow Dragon, Sultan and Val d'Andorre being included. Messrs. Sullivan and Bennett were the prizetakers with six Japanese Anemones, the former staging Fabian de Mediana and Sœur Dorothee Souille in good form, and was also first with six large Anemones. Mr. H. Holmes was awarded chief honours for six incurred of one variety, staging grand blooms of Queen of England. Messrs. Woodhams, Methven, and Smollett were the winners with Pompons; Mr. W. Furze, Roselands, Teddington, being first in the classes for single-handed gardeners with twelve incurred and the same number of Japanese.

In the fruit classes the entries were very numerous, there being thirteen competitors with three dishes of Pears. Mr. Alexander, gardener to W. M. Seamen, Esq., Tower House, West Hill, was first with Souvenir du Congrès, Flemish Beauty, and Pitmaston Duchess. Apples were similarly well represented, the principal prizes being taken by Messrs. Whitebread and Smollett. Mr. W. Smith was first in the black Grape class with large bunches of Alicante, followed by Mr. Alderman with three even handsome bunches, both well coloured. Mr. Alderman was first with well-ripened Muscat of Alexandria in the white Grape class, followed by Messrs. W. Smith and Batten. The leading collection of vegetables was from Messrs. Tigwell, Mortlake, and the most tasteful bouquet of Chrysanthemums was from Mr. G. Stevens, a pretty combination of red and bronze Japanese varieties. The other bouquets were much too crowded and far from graceful or praiseworthy.

SOUTHAMPTON, NOVEMBER 3RD AND 4TH.

THE annual Exhibition of the Royal Horticultural Society of Southampton was held at the Victoria Skating Rink on the dates named. Owing to the lateness of the season and the early date of the fixture the entries were not quite so numerous as on former occasions; still, sufficient plants and blooms were staged to make a capital show. Several new exhibitors in the Chrysanthemum classes made their first appearance at this Show, and they competed in the various classes. One noted exhibitor in the cut-bloom classes we missed from the list—namely, Mr. Molyneux, who was no doubt reserving his strength for the Kingston Exhibition, to take place the following week. Cut blooms were numerous shown and in good quality. Plants were of large size, profusely flowered, and neatly trained, without being too stiff. Apples and Pears were numerous staged and grand in quality, while Grapes were well represented. Vegetables, too, were quite a strong feature, so excellent in quality were those staged. Amateurs and cottagers came out in strong force, as is always the case at this place. Under the able direction of the Secretary, Mr. C. S. Fridge, everything passed off well.

For the best group of Chrysanthemums arranged in a space 8 feet by

5 feet, quality and general effect to be the leading features, there were only two exhibitors. The first prize was awarded to Mr. J. Allen, gardener to J. Bailey, Esq., Glenfield Hill, Southampton, for a capital group, dwarf plants with fresh foliage, and carrying good blooms of the leading varieties. Mr. N. Blandford, gardener to Mrs. Haslefoot, Moorhill, West End, Southampton, was second. Mr. J. Allen was first for six plants, with large handsome specimens freely bloomed, notably Dr. Sharpe and Lord Alcester. Second Mr. W. Joy, nurseryman, Shirley, with larger plants, but not quite so well bloomed. Mr. Joy was first for six Japanese plants with specimens 5 feet in diameter and carrying 120 blooms on each plant. The same exhibitor was first in the nurserymen's class with plants somewhat similar in character. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, had the best single specimen of incurved or reflexed with Dr. Sharpe, splendidly coloured, the flowers numbering 150. Mr. Allen and Mr. Joy were second and third.

For twenty-four varieties incurved blooms Messrs. W. & G. Drover, florists, Farnham, was first with even, neat, fresh examples, well staged, the following being some of the best varieties:—Jeanne d'Arc, Empress of India, Lord Alcester, Hero of Stoke Newington, and Jardin des Plantes. Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., M.P., Leigh Park, Havant, was second, his blooms lacking the quality and finish of the first-prize collection, Queen of England, Golden Empress of India, Miss Mary Morgan, and Lady Hardinge being some of the best. Third Mr. J. Allen.

Mr. Penford staged the best twenty-four blooms of Japanese Chrysanthemums, among which were large fresh examples of Oracle, Balmorean, and J. Delaux. Second, Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, Winchester—Margaret Marrouch, M. Delaux, and Mlle. Lacroix being specially noteworthy. Mr. Neville had the best twenty-four blooms in eighteen varieties, with a clean, even, well-arranged lot; the best were M. Marrouch, J. Delaux, Lord Wolsley, and Jeanne d'Arc. Mr. H.W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, herein made his début as a Chrysanthemum grower, and some right good examples he staged. Third, Mr. J. Allen. Fourth, Mr. C. Warden, gardener to Sir F. Bathurst, Bart., Clarendon Park, Salisbury, who in his staging took quite a new departure, showing the blooms as grown (which were good) with stems and foliage set up on moss, and having an edging on the front of his stand of *Isolopis gracilis*; this exhibit was very conspicuous if not meritorious. Messrs. Drover had the best stand of twelve incurved, while Mr. C. Penford set up the best twelve Japanese, closely followed by Mr. W. Wildsmith, gardener to the Right Hon. Lord Eversley, Heckfield, Winchester, all staging produce of high merit. For twelve blooms Anemone flowered, and the same number of reflexed, Mr. C. Penford was awarded first prizes for very fine stands, followed by Messrs. Drover and Wildsmith.

In the class for twelve blooms shown with foliage as grown, Mr. Allen was first, followed by Messrs. Neville, Warden, and Penford. Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, had the best Pompons, closely followed by Mr. Wills. Mr. Wildsmith was first for twelve blooms not less than eight varieties, conspicuous amongst them being fine flowers of Mame. C. Audiguier, Golden Queen of England, and Lady Hardinge. Second, the Right Hon. H. Crichton, Netley Castle (gardener, Mr. J. Reynolds). Miss Flight had the best-arranged stand with Chrysanthemums and other flowers, which was quite charming in its effect.

Mr. Ward staged the best Grapes in the class for three distinct varieties, Mrs. Pince being very fine in bunch and herry, Gros Guillaume large in berry and splendidly coloured, also Muscat of Alexandria. Mr. J. Budd, gardener to F. G. Dalgety, Esq., Lockerley Hall, Romsey, was second with fine Muscat of Alexandria and Alicante. Mr. T. Hall, gardener to Captain Davison, South Stoneham House, was third, his bunch of Alicante being superb in every way. Mr. Molyneux had the best three bunches of black Grapes, with specimens of Gros Guillaume weighing collectively 16 lbs., perfect in herry and colour. Mr. Hall followed with Alicante carrying a dense bloom, while Mr. T. Grant, gardener to Major Murray, Ossemsley Manor, Christchurch, was third with the same variety in fine condition. Mr. W. Saunders, gardener to J. East, Esq., Longstock House, Stockbridge, was first for three bunches of white Grapes, with Muscat of Alexandria, almost faultless. Second and third, Mr. Ward and Mr. Budd. Mr. Penford had the best two bunches black and white Grapes, while Mr. Ward's bunch of Gros Guillaume weighing 10 lbs. gained him the premier award. Mr. Wildsmith had the best Pine Apple. For four dishes of culinary Apples, any variety, Mr. G. Bushy, gardener to F. Willan, Esq., Thornhill Park, Bitterne, was first, closely followed by Mr. Hall. The former had fine dishes of Lady Henniker, Golden Noble, and Waltham Abbey Seedling. King of Pippins, Ribston Pippin, and Cox's Orange Pippin gained for Mr. Wildsmith the premier award for dessert Apples, so rich in colour were they; second, E. H. Goodwin, Esq., amateur; third, Mr. G. Bushy; seventeen entries. Mr. Godwin gained first prize for three dishes of kitchen Apples. Mr. Sanders gained a like award for four dishes of Pears with extra large specimens of General Todtleben, Pitmaston Duchess, Uvedale's St. Germain, and Doyenné du Comice; Mr. R. West, gardener to J. R. W. gram, Esq., Northlands, Salisbury, second. Mr. Sanders was again first for three dishes of Pears. Mr. E. H. Goodwin had a splendid dish of Filberts, which gained him the first prize. Mr. Wills was first for table plants, six Palms; while the collection of Orchids staged by Mr. N. Blandford made quite an imposing array, *Calanthe Veitchii* and *C. vestita rubra* having splendid spikes of bloom.

Vegetables were represented by nine collections of eight varieties, and grand lots they were. Mr. J. Cox, gardener to R. K. Wyndham, Esq., Corhampton House, Bishops Waltham, was first, Lyon Leeks (grand), splendid Autumn Giant Cauliflowers, White Gem Celery, Rousham Park Onion, and Improved Magnum Bonum Potato. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, was second, Tomatoes, Carrots, and Cauliflowers being particularly strong. Third, Mr. Sanders. Mr. Budd had the best salad.

Messrs. Lucombe, Pince & Co. staged a fine collection of Apples and Pears, the former numbering 180 dishes, while the latter contained fifty-two dishes; all were of large size and splendid colour. Mr. Wildsmith staged six Pine Apples, not for competition, which were of fine quality.

NATIONAL CHRYSANTHEMUM SOCIETY.—NOVEMBER 11TH AND 12TH.

A most successful Exhibition was opened at the Royal Aquarium, West-

minster, yesterday, and continued on Thursday, the cut blooms being of high quality, and the groups from Mr. G. Stevens and Mr. N. Davis some of the best ever shown at the Aquarium. Fruits, especially Grapes, Apples, and Pears, were extensively and well represented; the vegetables in competition for Messrs. Sutton & Sons' and Messrs. E. Webb & Sons' prizes being also of high quality. Messrs. H. Cannell & Sons contributed a most tastefully arranged collection of Chrysanthemum and other blooms, Messrs. Lee & Sons having having a large collection of Apples, and Messrs. Sutton and Sons a similar one of Potatoes.

One of the principal classes was that for forty-eight incurved, the first prize being £10; but, strangely enough, only one exhibitor appeared—Mr. C. Penfold, Leigh Park, Havant, and he was awarded the second prize. The Veitch Memorial Medal and £5 prize brought four good collections of thirty-six incurved blooms, Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, taking the coveted honours with grand blooms. Mr. E. Berry, gardener to the Countess of Leven and Melville, Roehampton, was a close second with very even blooms. For forty-eight blooms Mr. J. J. Lewry, gardener to J. Macandrew, Esq., Belmont, Mill Hill, took the lead in a strong class with magnificent examples of the best varieties. Mr. Ridout was second also with fine blooms. First prizes were also awarded to the following exhibitors:—Mr. J. Bettisworth, gardener to R. Ewing, Esq., for twenty-four Japanese; Mr. Shoosmith, gardener to Canon Hodgson, Saltwood Rectory, for twelve Japanese and twelve incurved; Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, for twelve large Anemones; Mr. E. Sanderson, Willesden, for twenty-four incurved; Mr. C. Langdon, Brooke House, Clapton, and Mr. J. J. Hillier, Priory Road, Wandsworth Road, being first in the amateur and metropolitan classes for twenty-four and twelve incurved blooms.

Four handsome groups were staged by Mr. G. Stevens and Mr. N. Davis, one of Japanese and one of incurved varieties each, and they took first and second prizes in the order named. In other plant classes Mr. Gilbey, gardener to F. Moore, Esq., Blendon Hall, Bexley, had some of the best specimens, evenly trained and well flowered.

Eight collections of Grapes, twelve bunches were entered, Mr. W. Pratt, Longleat Gardens, Warminster, winning the first prize (£8) with beautiful Alicantes, Lady Downe's, and Muscat of Alexandria. Mr. Wallis, Keele Hall, Newcastle, Staffordshire, was second, showing a superb bunch of Mrs. Pince; and Mr. Osman, Ottershaw Park, Chertsey, was third. In the class for black Grapes Mr. Howe, Park Hill, Streatham, was first with three grand bunches of Alicante, weighing 15½ lbs.; Mr. S. Castle, West Lynn, Norfolk, following closely with Gros Colman in fine condition, the berries of great size. This exhibitor won also first with Muscat of Alexandria, in the white Grape class, followed by Mr. Wallis. The best Apples were from Mr. W. Jacobs, Petworth, and Mr. C. Ross, Welford Park Gardens, Newbury; the first-prize Pears coming from Mr. C. J. Goldsmith, Kelsey Manor, Beckenham. Messrs. Sutton & Sons' prizes for a collection six sorts of vegetables brought ten competitors, Mr. A. Miller, gardener to H. Long, Esq., M.P., Rood Ashton Park, Trowbridge, being awarded first honours for clear even samples of Stamfordian Tomatoes, Rousham Park Hero Onions, Cauliflowers, Leeks, Schoolmaster Potatoes, and Sprouts. There were six entries for Messrs. Webb's prizes in vegetables; Mr. Haines, gardener to the Earl of Radnor, Highworth, leading with an admirable collection, the Leeks, Cauliflowers, and Onions being wonderfully fine.

CROYDON.—NOVEMBER 11TH AND 12TH.

The Croydon Horticultural Society held their ninth annual autumn Show on the above dates. The Chrysanthemums were, of course, the most important feature and were shown fairly well, as also was fruit. The following are brief particulars of the awards:—

CUT BLOOMS.—Incurved.—The leading class was that for twenty-four flowers, and the first prize went to Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, for excellent specimens of the best-known varieties. Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall, was a moderate second; no others competed. For twenty-four incurved flowers, open to local gardeners, only, Mr. T. Sadler, gardener to C. Lambert, Esq., Streatham, was first and Mr. Rodbourn second; no others in competition. Twelve moderate blooms secured Mr. Rodbourn the first prize in the next class, Mr. Cook being second, and Mr. Ridge, gardener to Lady Ashburton, Addiscombe Farm, third; four others competed. For six blooms Mr. A. Alderman was first with medium sized, but fresh and nicely finished flowers; Mr. Cook was second. Six blooms of one variety (three entries).—First Mr. Rodbourn, with good specimens of Golden Empress of India; second Mr. Staines, gardener to J. Newton, Esq., Parkhill, with Mrs. Dixon; third Mr. Terry, gardener to J. H. Gwyther, Esq., Parkhill, with Mr. G. Glenny.

JAPANESE.—Mr. Gibson was again victorious in the principal class for these, winning easily with splendid blooms. Mr. H. Alderman was again second, and Mr. Rodbourn, gardener to Baroness Heath, Coombe House, third. In the local class for twelve Japanese an excellent stand from Mr. A. Alderman was an easy first; the flowers were not large, but beautifully fresh. Mr. Rodbourn was second, and Mr. Sadler third. For six of one variety Mr. A. Alderman was first with M. Delaux, very fine, and third with J. Delaux; Mr. Staines second with Elaine; Mr. Rodbourn equal third with Triomphe du Nord.

Twelve large Anemone-flowered, two entries.—First, Mr. Rodbourn; second, Mr. Cook. The flowers of the first-named exhibitor were excellent. Twelve Anemone Pompons, two entries.—First, Mr. Cook; second, Mr. Dobson, gardener to Miss Stenning, Addiscombe Road, Croydon. Twelve cut blooms, with foliage, seven entries.—First, Mr. Welstead, gardener to Mrs. Lodge, Bramley Hill; second, Mr. Sadler; third, Mr. Rodbourn.

GROUPS AND SPECIMENS.—Mr. George Curd, George Street, Croydon, took the first prize for a group of Chrysanthemums, open; it was well arranged, and produced a good general effect. Mr. C. S. Bowman, London Road, Croydon, was a very good second. Only one collection was staged in the local class, a very nice group from Mr. Cook, gardener to J. Ezekiel, Esq., Duppas Hill, Croydon, being adjudged first prize. For three plants on single stems Messrs. J. Cook and Sadler were first and second respectively. Three Pompons:—First Mr. Cook, only one entry. Single specimen:—First Mr. Cook (Madame B. Rendatler); second Mr. Sadler (Geo. Glenny).



KITCHEN GARDEN.

GLOBE ARTICHOKE.—We have frequently wintered these in the south without any protection, but our readers in the north must not risk this, and in all cases it will be well to protect them when frost comes. Indeed, where litter is plentiful the whole might be done at once, and they will be safe for the winter. Do not cover the head, but place a good quantity of the manure around the neck of each plant. Our plants have lately grown fast. They were rather checked with the dry weather in July and August, which may have caused them to die earlier, and the moisture in September induced them to grow again luxuriantly. Young heads are forming, and should the weather remain mild we shall cut several dishes before November is out. This extra growth will, no doubt, have occurred with many, and it ought to be preserved if possible by protecting now as suggested. When the weather has come very severe we have sometimes thrown straw covering over the whole of the tops, but this is not necessary as a rule.

RHUBARB.—We know of some excellent growers of this who assert that the proper time to feed Rhubarb is in winter, and our practice verifies this. We rarely feed our Rhubarb in summer, but mulch it heavily at this season with strong manure, and the growths are always as plentiful and strong as we could desire them. Young roots in recently manured rich ground will not require any feeding, but old roots which have been growing for a number of years in the same spot will be greatly benefited by it. They do not want protection, therefore light stuff with no substance in it need not be put over the plants, but strong juicy cow or pig manure should be used. Spread it over the surface so far as the roots extend at least, and put it on 4 inches thick.

BROAD BEANS.—These may also be sown at the same time as the Peas. The drills may be from 3 feet to 4 feet apart, and the depth 4 inches. They will succeed in a much heavier soil than the Peas; but if put into this alone the seed may decay, and it is a good plan to open the drills 6 inches deep, place sand or light soil in the bottom to the depth of 2 inches, tread this down, sow the seed, and fill with more fine soil or sand. This will prevent decay of the seed, and as the roots go downward they will not depend on any of the light surface soil for nourishment. In spring and summer we generally sow our Beans singly 2 or 3 inches apart, but now they should be put closer than this.

ENDIVE.—This is a most valuable and acceptable addition to salad plants in winter. We value the Broad-leaved Batavian variety more than any other salad plant we possess from November until March. We grow it largely and exclusively. The Green Curled is pretty, but not so useful as this excellent broad-leaved sort. The plants grow very large, and are very hardy. Like other Endives, they require tying up a fortnight before being used, and quantities ought to be tied up now for use during the latter part of this month and throughout December. Gather the leaves all together at the top, bind them round, and tie them close with a piece of matting, and the centres will soon become tender and cream-coloured. We always tie them when quite dry, and as the rain cannot penetrate to the centre easily when the leaves are tied at the top we do not lose many plants from damp. They will bear a few degrees of frost, but in very severe weather, or just before this, a large quantity should be lifted, placed in cool frames, and covered over with lights. When frames were not available we have sometimes placed numbers of them close together on the inside border of a cool Peach house, and they kept uncommonly well there. So long as they can be kept dry there is little danger of their decaying.

CHICORY.—A number of roots of this should be lifted and put in eights or tens into 9-inch pots for forcing. Cut all the top leaves away before potting. Any soil will suit, and a temperature of 65° or 70° will soon cause fresh leaves to be emitted. When kept in a dark place they come a beautiful creamy colour, and are tender and juicy. Chicory is easily grown in summer, still easier forced in winter, and is much valued in made-up salads. With a good supply of this and Mustard and Cress no one need dread the destruction of their Lettuce by frost.

CABBAGE.—The snails have been busy amongst the Cabbage plants, and we observe many blanks, which will be filled up on an early day. All plantations should be looked over now with the object of doing this, as young plants put in now will begin to root before severe weather, and they will grow freely with the earliest in spring. It is not desirable, however, that there should be too many blanks, and the surface of the soil where the plants are growing should be dusted with a little fresh lime. Our winter Spinach and late Turnips are hardly so good now as in former autumns. They never quite got over the drying up they experienced when young and tender in August.

FRUIT FORCING.

CUCUMBERS.—As soon as the roots protrude through the surface of the mounds add more soil to the hillocks, which should have been previously warmed to the temperature of the house and be in a moist condition, so that the roots will enter through it at once. Complete earthing the first autumn plants, and mulch at once with decayed manure, which will attract the roots upward and act as a stimulant. The waterings should be

copious and as frequent only as necessary and according to the requirements of each plant. It should be given at a temperature of 75° to 80°. When to apply and to withhold water can only be determined by those in charge and possessing a practical knowledge of the wants and condition of the plants, and even then the application or non-application of water to the roots must be determined by circumstances, as the mode by which bottom heat is obtained, and the scope of root-action possessed by the plants, as well as by their condition and appearance generally. The fires on bright mornings should be stopped, or the heat turned off about eight o'clock, by which time the sun heat will take the place of artificial heat, and is much better for the plants. It does not answer to keep the fires going until the day temperature is reached, as the sun as well as the fire heat has increased in force, rendering ventilation immediately necessary to prevent the temperature rising too high, as to lower it is not only wasting heat, but letting in cold air which will produce a chill. The fires should be again started in the afternoon as the sun is decreasing in power and going off the houses, so that by the time the sun heat, husbanded by early closing, is exhausted, the heat from the pipes may be sufficient to secure the temperature at 65°, or in the event of severe frost a night temperature of 60° is ample. To maintain this the piping should be liberal, while to economise fuel, and to obtain a more genial heat, it is a capital plan to cover the roof of the house or pit at night with mats. The temperature in the day should range from 70° to 75° by artificial means, and 80° to 85° from sun heat, and no opportunity should be lost of utilising solar heat for the growth of the plants by careful ventilation. If mildew appears dust at once with flowers of sulphur, and keep the house rather drier and ventilate more frequently. If aphides appear fumigate, but it must be done moderately, and on two or three consecutive evenings. If canker show on the stems rub quicklime well into the affected parts, repeating it until the parts become dry and healed.

As the first plants are showing fruit freely all superfluous ones should be removed at once, as on the judicious cropping of the plants during this month and early December depends the success of a supply of fruit from Christmas to March. Crop lightly and otherwise attend to the stopping and thinning, also tying of the shoots, allowing no more than can have free exposure to light, removing any decayed portion of growth or foliage that may appear, and keep the glass clean, so that all the light possible may be secured to the plants.

STRAWBERRIES IN POTS.—The early plants of varieties intended for early forcing have well-developed crowns, and be in a state of rest and in cool quarters, though with lights over them to shelter them from heavy rains. Towards the close of the present month early plants of some approved varieties will need to be started in gentle heat with a view of having ripe fruit about the middle of next February. Of all those we have tried preference is given to La Grosse Sucrée, on account of its fruit being larger than many others, besides setting well, swelling well, and being of a bright red colour. At the same time, plants of Vicomtesse Hericart de Thury and Sir Harry may be started, as we find it best not to rely exclusively on one variety, and all are good. Black Prince is still grown by some, and if worth forcing at all it should be as a first early, but we have discarded it. In the meantime the plants should have their drainage examined and rectified where it is at all deranged, and the pots freed of moss, &c., by washing. Any decayed leaves should be removed, but avoid dressing them very close, stirring the surface of the soil and removing the inert matter without damaging the roots, afford a top-dressing of fresh horse droppings rubbed through the hands with a sprinkling of bone dust, into which they will root, being a means of encouraging surface roots, and with these there is certain to be plenty in the pots when the plants begin to make top growth. For early work a Strawberry house is best, but in its absence, as it unfortunately is in only too many places where Strawberries are wanted and must be had early, a Peach or other forcing house started at the same time as the Strawberries will be a suitable place to bring forward the plants, they being assigned a position near the glass and where they will receive plenty of air without it coming directly upon them. For the first fortnight the house should only be closed, no fire heat being used except to exclude frost, taking advantage of sun heat to close the house so as to induce gentle excitement, and the night temperature will not fall much, if any, below 50° at night unless frost prevails. During the early stages of forcing the temperature by artificial means ought not to exceed 50°.

Fruiting plants will require to be sparingly watered, and will need a position near the glass in a house with a rather dry atmosphere and with a temperature by artificial means of 60° to 65°.

PLANT HOUSES.

Calanthes.—The flower spikes of the earliest plants will be advancing rapidly, and if earlier than they are required they may be retarded by placing them in a temperature of 50° to 55°. Plants in this stage must be watered very carefully, for nearly all the foliage has ripened naturally, but the roots remain active for some time afterwards if not destroyed by suddenly withholding water from them. When the roots naturally die it is useless to apply water to them afterwards, but until they reach this stage the soil should not be destitute of moisture. The atmosphere in which they are placed should be moderately dry, for the flowers last nearly double the length of time under these conditions than is the case in a warm moist structure. Calanthes are effective when in bloom arranged amongst Adiantums or other Ferns, which hide the pots and display to much advantage the light arching spikes of white and rose-coloured flowers. They are also very useful in the conservatory, arranged amongst Pelargoniums, Primulas, Cyclamens, and other dwarf flowering

plants, if the temperature in that structure is kept from falling below 50° at night. Late hatches for flowering after Christmas must be regularly supplied with water as they need it, for they still possess the whole of their foliage. These must not be in a lower night temperature than 60°.

Dendrobiums.—Many of these have completed their growth, and should receive no more water at their roots or moisture in the atmosphere than sufficient to keep their pseudo-bulbs fresh and plump. The majority of deciduous varieties after the whole of the foliage has been ripened from them may be removed to a cool house, where they will have a season of rest, which is essential to luxuriant growth. Some, such as *D. Devonianum*, *D. crystallinum*, and others, are not benefited by removal to a cold house, for they rest perfectly, flower profusely, and grow better another year if they are rested in an intermediate temperature; if starved while at rest they are liable to go back instead of making progress the following year. Many evergreen varieties, such as *D. nobile*, will also be ready for removal to a cool house, but those that have not completed their growth must be kept in heat and their pseudo-bulbs ripened as early as possible. *D. thyrsiflorum*, *D. densiflorum*, *D. Farmerii*, and others of similar habit have completed their growth, and may be removed for a time to an intermediate temperature to further ripen, and finally subjected to cool treatment. They must be well ripened and not placed to rest in too low a temperature, or the tips of the leaves turn yellow, and therefore destroy the appearance of the plants. When placed under cool treatment it is necessary to keep the atmosphere perfectly dry. *D. heterocarpum*, *nobile*, and *Wardianum* that have been resting some time in a cool place will be showing their flower buds prominently on each side of the pseudo-bulbs; these can soon be brought into flower by introducing them into the stove or any other house where a temperature of 60° is maintained; if not required they can still be retarded, or placed in a house to come forward less rapidly.

Cattleyas.—All plants that have completed their growth should be removed to the coolest end of the house in which they are grown, while those still growing must have the lightest and warmest end. These plants will need very little water either at their roots or in the atmosphere. Those that have ceased growth will only need sufficient water to maintain their pseudo-bulbs and foliage plump. *Cattleyas* often make a good quantity of roots after the pseudo-bulbs appear to be full grown and ripe. These must not be prematurely sent to rest by withholding water, but it must be applied to them carefully and cautiously until root-extension is fully completed. It will be unnecessary to damp amongst the pots of these plants from the present time, for the atmosphere will be rendered sufficiently moist by the water required at the roots of the plants. The night temperature should range from 55° to 60°, with a rise by day of 5° or 10°. Ventilate whenever the weather is favourable. Under these conditions *Cattleyas* will rest, without which they will not long remain in perfect health. While in an inactive state these plants are very liable to the attacks of thrips, which, if not destroyed, will soon seriously injure their foliage.

Oncidiums.—The majority of these will be better with the *Cattleyas* from the present time than in a warmer structure. Some are benefited by a lower temperature, but the *Odontoglossum* house is too moist for them. If these plants are to grow well and flower profusely they must have their pseudo-bulbs well ripened, and then the plants receive a complete rest for a good period by keeping them in a cooler house than the one in which they have been grown. They should also be kept dry at their roots; in fact, only give sufficient water to prevent their pseudo-bulbs shrivelling.

THE BEE-KEEPER.

SKEP COVERINGS.

THIS apparently simple matter of coverings for straw hives is a cause, when not properly attended to, of much loss and no small amount of anxiety to the bee-keeper; for during the damp wet days and weeks of the winter months, unless the coverings are such as to entirely obviate any chance of the wet penetrating through and causing a dampness on the top of the hive; or if by reason of there not being sufficient overlap or slope the wet runs from the floorboard under the sides of the hive, causing damp and mould, a foundation has been laid for disease which, unless speedy precautions are taken, will destroy the stock. Mr. Payne in his manual—which I am sorry to say I am unable to obtain, it being now out of print, and my own copy mislaid by a cottager to whom I lent it—said, if my memory does not mislead me, that a large earthenware pan was the best protection for a hive from the weather.

There appears, however, to me to be a great objection to such a cover, in that when rain comes driven by a wind it beats beneath any such protection and wets the hive through, with the result that during the winter the hive is continually damp, and the floorboard also is affected in the same manner.

Such a state of things would cause me the greatest anxiety, and even if no harm ensued it would be a perpetual eyesore which would render it an impossibility in any apiary. What, then, is the best substitute? Now on this question so much has been written, and such lavish abuse of boxes has been poured out, that it is with a feeling of half fear that I venture to say that for cleanliness, neatness, dryness, ease in supering, ekeing, nadiring, and for general adaptability to all the operations conducted in an apiary there can be no better covering than a well-made box.

Such a box could be made at a very small cost, and the way I set to work is as follows:—From any shopman I procure a good strong box which generally costs about 6d., and is larger than the largest hive ever used here, and deeper by 6 or 8 inches at least. I then get another box of good sound material at the same price; with the wood of this second box form a roof for the other, making it of such a form as to give ample room for filling supers; this top is loose and held on the box merely by hooks and eyes. A good coat of thick paint once a year completes the whole, which will last for years—in fact, with common care such a box will outwear most bee-keepers. The cost of labour in construction is not much—to a man, that is, who knows how to use his hands, and if it seems not to be so easy to form the top from the second box a little extra outlay will buy wood sufficient for the roof. It may be added to the directions already given that the front side of the box is knocked out, and, after an entrance has been cut for the bees, the front board as it now becomes is fastened on again by means of two brass-headed thumbscrews, so as to be easily removeable whenever necessary. One word of warning. Good work is essential. To expect a box only half made and put together in a loose happy-go-lucky fashion to keep out wet effectually is ridiculous, but, on the contrary, a good properly made box will entirely keep out such moisture, and the room at the top and the sides will have a beneficial effect in winter by keeping up a free circulation of air, and this is a point to which I pay particular attention, always leaving spaces under the eaves to admit air freely, and yet so contrived as to exclude wet. Thus the stagnation of air which propagates and fosters damp is superseded by the health-giving changes of air continually going on.

Now, what is the result of having our skeps under these shelters? The advantage are manifold, of which I may state the chief. These are the knowledge that no wet can penetrate, and that mice are effectually excluded; the additional facility given for the use of any kind of super either sectional glass or of any other description; the advantage gained by preventing the sun in winter from warming the hive too quickly, and so enticing the bees to leave their comb when the outside air is quite unfit for flight; and last, but not least, the preservation of the hive itself from the destructive effects of damp and exposure to weather. These, then, seem to be the advantages, and of the disadvantages I can say nothing, for apparently they are an “unknown quantity.”

I must, however, now leave the subject to the sense of bee-keepers, who can after reading think the matter over and compare the boxes with the style of coverings they have in use, and consider whether the cost of a lasting covering will not soon be repaid and a saving effected by its adoption; and, last of all, let me advise them to act according to their idea of the comparative utility of the different styles of skep protectors—to discard the one and use the other, and so to act as it seems to them most likely to conduce to ultimate profit.—FELIX.

THE CALEDONIAN APIARIAN SOCIETY.

At the recent meeting of the above Society held in Glasgow the principal counties from Inverness to Wigtown, Ayrshire, Argyleshire, Perthshire, Stirlingshire, Lanarkshire, &c., were well represented. On the revision of prize list some alterations were made. Mr. J. Anderson of Dalry, Ayrshire, said, to please the whim of a few novices, the most of the prizes for the produce from the Stewarton hive had been withdrawn. He begged now to propose that in consequence of the Stewarton hive

coming more into repute more prizes be offered for supers, which did not deprive those from other hives competing. This was unanimously agreed to. Prizes to farmers' wives and daughters, which were offered to encourage that class in bee-keeping, appeared in the schedule as ladies' prizes. Mr. William Thomson, Lanarkshire, said those prizes had been unfairly taken advantage of by bee-keepers, members of this Society, entering their wives for and gaining these prizes, thus defeating the real object they were intended for. He moved that farmers' wives and daughters only be substituted. This was agreed to by a small majority. Mr. Thomson then suggested that prizes should be offered in greater number for articles made from honey. Major R. J. Bennett, Honorary Secretary, stated that he had a letter on the subject from the Rev. Mr. Moyle, advising the extension of prize list for comestibles, &c., made from honey. These suggestions were agreed to. The foregoing were the principal alterations of the prize schedule for 1886, to be competed for at Dumfries in July, where the Highland and Agricultural Societies' Show will be held.

Major R. J. Bennett then read an interesting paper on the seasons and bee-keeping since 1874, as well as a statistical account of honey and wax imported into this country, urging upon all bee-keepers to do their utmost in securing what the country would yield in honey and wax, and keep the £200,000 expended on the foreign article within our own country. The Major in his discourse pointed to many things which would be of great advantage to bee-keepers, but prominently and of the highest importance was that of judicious crossing and keeping only young and fertile queens. Sometimes, he said, after we thought we had our ends attained, some of the queens would remain sterile or partly so. Sometimes queens would at first fail to come up to the standard, but after a short time become very fertile. One common cause of sterility in queens was defective organism, but this was not always the case. The fault lay often with the drone. There had been too little attention given to this important part of apiculture. It was a recognised fact that the best queens were had from strong hives. The same applied to drones. The weakening of stocks by excessive swarming and the pruning of drone comb from the centre of hive reduced the vigour of the drones. He was sure the subject was one that required consideration. They had the evidence of "A Lanarkshire Bee-keeper" of the superiority of judicious crossing by drones from strong stocks and foreign races, as well as that of the Messrs. McNallys with their nearly 2 tons of honey, and in a few years instead of having to import honey and wax much might be exported.

Mr. Thomson said that bee-keepers situated far from towns of importance found a difficulty in marketing their produce. To meet this want he had been trying to establish a system that would enable them to have a sure place where they could consign their honey, where it would be sold at a moderate yet remunerative price, without being compelled to sell to honey companies at a price that would do little more than pay for the carriage. To meet this want Mr. Thomson said he had appointed several agents who were willing to sell on commission Scotch honey only, providing the bee-keepers would advertise; he now wished to know whether this meeting would agree to these proposals, and assist bee-keepers, whom they had instrumentally encouraged to start bee-keeping, to get rid of their honey. Major Bennett said the proper course to pursue was to send their honey to some broker to be sold by auction. Mr. Thomson opposed this course on the ground that honeycomb was of too delicate a nature to stand the rough treatment of auctioneers' assistants and railway porters; besides, merchants often acted in concert, and kept down the price, as they have already done with both fruit and honey when there was much on sale, while the public seldom benefited from the low public sale prices. This question was now dropped, the Society declining to take any action.

After the formal vote of thanks to the Chairman and Honorary Secretary, Mr. Sword said he could not close the meeting without paying some deference and honour to those who had the interests of bee-keepers at heart, but were prevented from being present on account of ill health or other circumstances. He begged the meeting to remember that there was one who was the prime mover in all relating to apiculture, and was one of the few gentlemen who successfully launched this Society, and was he who was the successful competitor in driving and transferring at the Kibble Crystal Palace Botanic Gardens, Glasgow, in 1876, where he gave his unsuccessful opponent (Mr. Abbott) so salutary a lesson in the art and "mysteries" of the hive. That gentleman, Mr. John Wilkie, late of Greenock, is now in New Zealand as enthusiastic and, he hoped, a successful bee-keeper. He therefore proposed the health and prosperity of Mr. Wilkie.

The meeting resolved itself into a conference, when Major Bennett entertained them to luncheon. Many topics on apiculture were discussed. Amongst them was that of queen-introduction. Success was claimed in various ways, but all seemed to agree that the only safe plan was to deprive the bees the power of raising another queen. Mr. Thomson said he had killed as many queens, or perhaps more, than any other person. These deaths were caused by pursuing a course contrary to depriving the bees the power to raise queens, or by introducing the alien queen before the proper time had elapsed tending to safe introduction, and by following plans recommended by some as safe methods. He said there was a great difference in introducing a queen to a hive that had been queenless for a time from one that had been but recently deprived of their queen for the purpose of introducing one of a different race. With the former there was no risk, but with the latter there were. Referring to the different races of bees, Mr. Paterson said he kept none but the old black variety; that Ligurian bees would not fill supers with him. Mr. Thomson said that the greatest takes of honey he had had were from Ligurians, but he found they

required special treatment, that all Ligurians were not of the same excellence. In this case beauty went along with industry, but he failed to see how Mr. Paterson had the pure British bee when he had the Ligurians. He had no doubt the dark colour might be preserved, but he believed the excellent character he had to give of the original black bee was due to the fact that the Ligurian blood was imbued in them. As to the different races of bees, he had had seven years' experience with the Carniolians, and during all that time had not experienced any fault; they were mild-tempered, vigorous—particularly the drones—great honey gatherers, and very prolific. They were great flyers, going further than any other variety. He could strongly recommend them to any person. Their only fault was their flying far and long at swarming time, and particularly so with second swarms.

TRADE CATALOGUES RECEIVED.

Viccars Collyer & Co., Central Hall, Leicester.—*Lists of Specialties.*
James Dickson & Sons, Newton Nurseries, Chester.—*Catalogue of Forest and Ornamental Trees, Underwood Plants, &c.*
W. Drummond & Sons, 58, Dawson Street, Dublin.—*Catalogue of Forest, Ornamental, and Fruit Trees, Roses, Shrubs, &c.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Hyacinth Holder (J. S.).—The instrument seems well adapted for the use mentioned, but we think we have seen lighter and more elegant contrivances.

Address (E. T. H.).—Mr. Osman's address is, as was published in the report of the Crystal Palace Show, Southern Metropolitan District School, Sutton, Surrey.

Seedling Lapageria (J. Garrett).—The flower is very good, both in substance and colour. Many seedlings have been raised by crossing the red and white forms, and varieties raised more or less like your own, which is not sufficiently distinct to have any special value.

Fruit Trees in Perforated Pots (N. H. T.).—If you have had no experience in growing fruit trees in pots we must decline the responsibility of advising you to erect houses for growing fruit in the manner indicated as a profitable investment. You cannot get better information on the subject of growing fruit under glass in any book cheaper than the one published by Mr. Rivers. The price of Dr. Hogg's "Fruit Manual" is 16s., post free 16s. 9d.

The Nanny Apple (Inquirer).—There certainly is an Apple of this name and a very good autumn dessert fruit it is. It is medium-sized, 2½ inches wide, and 2½ inches high; roundish, narrowing towards the apex, and somewhat angular on the sides. Skin smooth, greenish yellow with broken streaks of red on the shaded side, but bright red, streaked with dark crimson, on the side next the sun; the whole strewn with russet dots. Eye open, with flat segments, placed in an angular basin, which is marked with linear marks of russet. Stalk short, inserted in a rather deep, round cavity, thickly lined with rough russet, which extends in ramifications over the base. Flesh yellow, rather soft and tender, juicy, sugary, and highly flavoured. It is in use during September or early October, but soon becomes mealy. The tree attains the middle size and is a good bearer, much more so than the Ribston Pippin, to which the fruit bears some resemblance in flavour.

Catherine Pear (L. P.).—The description of this Pear which you require is as follows:—Fruit small, 2 inches wide, and 2½ inches long, pyriform. Skin smooth and shining, fine clear yellow, with a blush of red streaked with darker red on the side next the sun. Eye small and open, set even with the surface. Stalk three-quarters of an inch long, inserted on the apex of the fruit without depression. Flesh firm, fine-grained, very juicy and sweet, but soon becomes mealy. An early Pear, ripe in August. This is an old English Pear mentioned by Parkinson in 1629.

Bulbous Irises (J. T.).—You may plant them at once where the plants are intended to flower, taking care that the land is well worked, so that superfluous water can pass freely away. It is better to draw drills of the requisite depth or make excavations if you desire to plant in clumps than insert the bulbs with a dibber. They should rest on a light base, plating under and around them sand or other gritty matter. If you wish to have a bed of these Irises the bulbs may be placed 6 inches apart; if you desire

to have them in clumps in mixed borders half a dozen bulbs should be planted in a circle 5 or 6 inches in diameter, and they may be covered 2 or 3 inches deep with light soil. The flowers are very bright and beautiful.

Apricot Failing under Glass (J. T. H.).—Apricots when grown under glass require an abundance of air in spring or when flowering, so as to keep the atmosphere buoyant and dry. This, we think, is the cause of the failure in your case—viz., the house is kept too close, too moist, and too high in temperature at the time of flowering, which brings on the flowers too quickly, they being then puny, and the blossoms do not set and fruit swell, simply because not fertilised. The only remedy is to give more air, keeping the house cooler and drier. A few degrees of frost will not injure the blossoms providing they are dry, but it as well to exclude it, and especially from the embryo fruit, which is very tender. This course of treatment will of course interfere with the Peach trees to some extent, but if you want Apricots they must have air, as a close atmosphere is fatal. Perhaps the tree suffers by want of water at the roots during the resting period. The soil should be kept moist at all times, and care should be taken to have it thoroughly so when the buds are swelling and onward throughout the period of growth.

Planting Slopes on Limestone (W.).—Beech does admirably on limestone or chalk, and we should make it exclusively the hard wood throughout. We have also seen some very fine plantations of Larch on limestone where the soil was thin and bouldery, the Larch having to be planted in the crevices or spaces between the boulders. These would make capital nurseries for the Beech, and prove profitable after the first few years from the necessary thinning. Scotch Fir also does capitally, and is an excellent nurse; but it ought to be used less—more sparingly than Larch, from its not being nearly so valuable as timber. A few Austrian Pines may be used, but chiefly on the outside, for the sake of effect and shelter. Corsican Pine is quick-growing, and may be put at the back, especially where you have deeper soil. It is a very handsome tree, always telling well in a mixed plantation from its deep green foliage and towering habit, usually rising above them all. By all means trench the ground—a process too much neglected—as the best means of securing the speedy establishment of the trees and certainty of securing a good growth. Manure will not be necessary unless the ground is poor and devoid of fibrous matter, as that of turf or a grassy surface. If manure be given it should be thoroughly decayed, as Conifers do not do well in soil containing crude manure.

African Groundsel (Reader).—It is quite true this name has appeared in the Journal. It is employed in connection with a somewhat remarkable climbing or trailing plant—*Senecio macroglossa*, which is figured on page 67, vol. viii., January 24th, 1884. It is described there as having leaves like Ivy and flowers resembling those of the *Etoile d'Or* variety of *Chrysanthemum frutescens*. *Senecio macroglossus* has been found on the Table Mountain, at the Cape of Good Hope, and in other districts of South Africa, seeds having been first sent to Kew by Mr. Sanderson in 1868, and from these probably the first plants grown in this country were raised. Sir Joseph Hooker states that he has heard that in some continental or other cities this plant is grown in rooms and trained round the walls near the ceiling, and from its peculiar succulent structure it would, no doubt, be fitted for such dry positions, though its strength would be severely tested in ordinary English rooms. The best position for it is a greenhouse or cool stove, but the former is preferable, as it cannot endure a moist atmosphere. It is not particular as to compost, light sandy loam with a little leaf soil or old decayed manure being suitable, and if grown in a pot this must be thoroughly drained and water very carefully supplied. The best plan is, however, that adopted at Kew, where it is planted out and trained up the roof of the house.

The Rationale of Planting and Potting Bulbs (E. S.).—You ask for "information on the rationale of bulb-planting in the open border and in pots," and observe that "neither Lindley's 'Theory and Practice of Horticulture' nor Thompson's 'Gardener's Assistant' throw much light on the matter, especially as to the depth at which bulbs should be planted to secure complete success." Something more than the mere depth that bulbs are covered is requisite for achieving complete success; still, we will endeavour to answer your question. The bulbs of the splendid Hyacinths that are awarded honours at the London shows are scarcely covered, but the apex of such is about level with the rim of the pot, and the surface of the soil is made level fully half an inch below it. The same remark applies to Narcissi, Tulips, Crocuses, Scillas, and small bulbs generally are just covered with soil when grown in pots, and the pots in turn covered about 5 inches deep with cocoa-nut fibre refuse. This applies to all bulbs. In planting bulbs in beds for one season only—that is, removing the bulbs after flowering—they are covered a little more than their own depth with soil. Crocuses, for instance, are covered a little more than an inch deep, and Hyacinths twice that depth, about an inch thick of fibre refuse or leaf mould being spread on the beds after the soil is levelled over the bulbs. In planting bulbs in borders to remain permanently they should be covered from twice to thrice their own depth or thickness—Crocuses and the like 2 to 3 inches, Hyacinths and the like 4 to 5 inches. If planted near the surface the earth is washed from them sooner or later. But it is bad practice to simply press a dibber into the ground to those depths and drop the bulbs into the holes thus made, as they are then either suspended or rest on a hard base, and in adhesive soil these holes are really miniature wells in which water collects. The base on which bulbs rest should be light and free—roots then penetrate it readily and superfluous water passes away. Bulbs should also be covered with soil through which the growth can extend freely, and the lighter it is the deeper they may be covered—for instance, they will push through 6 inches of leaf soil or gritty vegetable matter with greater freedom than through 2 inches of clay. It is an excellent practice to embed bulbs in and surround them with sand, or a mixture of sand and wood ashes, and too much importance cannot be attached to early planting. The more the crowns extend from bulbs out of the ground the worse it is for them, and root-extension should be slightly in advance of top growth for securing "complete success." Your letter would have been answered last week if it had been received a day sooner.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are

not necessarily required for publication, initials sufficing for that. (*Rev. C. Marsden*).—1, Beurré d'Aremberg; 2, Passe Colmar; 3, Chaumontel. (*D. I.*).—1, Swan's Egg; 2, Suzette de Bavy; 3, Belle Julie; 4, Beurré Diel; 5, Spanish Bon Chrétien. (*J. S.*).—Pears: 1, Comte de Lamy; 2, Seckle; 3, Easter Beurré; 4, Noveau Poiteau. Apples: 1, Bedfordshire Foundling; 2, Wyken Pippin. (*W. L.*).—Seckle Pear. You will see a history of it in "The Fruit Manual" (*J. C.*).—1, Dumelow's Seedling; 2, Sturmer Pippin; 3, Norfolk Beefing. (*W. Hull*).—1, Golden Noble; 2, Crimson Queening; 3, Blenheim Pippin; 4, Marie Louise; 5, Winter Nelis; 6, Josephine de Malines. (*J. Cornhill*).—Marie Louise d'Uccle. (*E. M.*).—1, Northern Greening; 2, Winter Colman; 3, not known; 4, a small Van Mons Leon Leclerc; 5, not known. (*H. H.*).—1, Gloucestershire Costard; 2, Wiltshire Defiance; 3, Beurré Diel; 4, American Mother. 5, Pitmaston Duchess; 6, Beurré Diel.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*W. A. Kenning*).—1, *Agrostemma Flos-Jovis*; 3, *Armeria maritima*. We cannot name the others from such specimens.

Square Stewarton Hive (Zenas).—You will find that the square "Lanarkshire" divisional hive with ventilating floor, as described lately in these pages, approaches nearest to the Stewarton proper, and is better adapted, with all the later improvements, to bee-keeping than any other form of the square Stewarton type. It may be had from Messrs. George Neighbour & Sons, 149, Regent Street, London. We are not able to say where you can procure an African goat.

COVENT GARDEN MARKET.—NOVEMBER 11TH.

TRADE very quiet, with heavy supplies. Large arrival of St. Michael Pines this week. Kent Cobs very dull.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 0 to 3 6	Oranges	100	8 0 to 12 0
" Canadian ..	barre	10 0 15 0	Peaches	per doz.	2 0 8 0
Cobs, Kent ..	per 100 lbs.	22 0 25 0	Pears, kitchen ..	dozen	0 6 1 0
Figs	dozen	0 8 0 9	" dessert	dozen	0 4 1 6
Grapes	lb.	0 6 2 0	Pine Apples English ..	lb.	2 0 0 0
Lemons	case	15 0 21 0	Plums	½ sieve	1 3 2 0
Melons	each	1 0 1 6	St. Michael Pines ..	each	1 6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus ..	bundle	0 0 0 0	Mushrooms ..	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 3 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Oignons	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	2 6 3 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 1 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers ..	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzoneria ..	bundle	1 6 0 0
Coleworts	dcz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Heros	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 0
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0



WINTER DIET.

To the practical home farmer, for whom our notes are written, the term "dairy cows," as used in our last article has a special significance, meaning, as it does, cows devoted solely to the production of milk, cream, and butter—aye, and cheese too, if you will, but not to the rearing of calves. We altogether object to the state of semi-starvation in which calves are so frequently kept; the system is radically wrong, and one would suppose that the most ignorant person would see the folly of it. Kept without food from ten to twelve hours at a time, faint from sheer exhaustion yet frantic with hunger, the calf rushes eagerly to the cow and gorges itself to repletion, and so the first few weeks of its existence are spent in a regular series of alternations of hunger and gluttony. Can we wonder that this unnatural treatment so frequently causes delicate calves to suffer from acute diarrhoea, to which many of them succumb and die?

Surely common sense should tell us that every calf, whether healthy or sickly, strong or delicate, requires three or four meals daily. The reason given for keeping calf and cow apart is to save the milk, and it is easily understood how valuable the rich milk of a Jersey or Guernsey cow is. If it must be had for the dairy, then why not let the calf be taken altogether away from it, and let it have a foster mother? One of the most pleasant and instructive sights we have met with of late was that of two fine polled Suffolk cows, each with a pair of calves constantly with them, cows and calves all being in high condition. This is an admirable method of rearing calves for the dairy herd.

Upon most large home farms two distinct herds of cows are now kept—the dairy herd and the stock herd. For the latter purpose we select either pure-bred Sussex, polled Suffolks, Herefords, Devons, or Shorthorns—big square-built yet compact fleshy animals that ripen early for the butcher. In this herd there are no milk pails, no dairy, the calves always running with the cows and sucking till the cows are dried for the next calving. In Mr. Henry Evershed's valuable little work on "The Early Maturity of Live Stock" we are told how this treatment "Made a grand job of the calves. At the age of eleven or twelve months they were not only big stocks, but very fat—not veal, but the firmest of beef. The calves shared with their dams the summer keep of good grass and the winter fare of meadowhay, roots, straw, cake, and grain. To make way for the newly dropped calves the yearlings were sold to the butcher at from £20 to £24 a head, representing nearly £2 per head per month's keep." The articles of diet enumerated as winter fare are by no means despicable. We would give some of the fodder as chaff, adding to it a moderate quantity of crushed linseed and linseed meal at the rate of 1 lb. to a gallon of water and boiled to a jelly. This mixture is wholesome both for cows and calves. It tends to check any tendency to scouring in calves, and it is also fattening. The home ground or crushed linseed contains 17 per cent. of digestible albuminoids and 32 per cent. of fat, while the linseed meal of commerce from which the oil has been extracted contains 28 per cent. of digestible albuminoids and only 2 per cent. of fats, for which reason it is considered preferable for young animals. Oilcake should be selected with care, and always subject to analysis, quite two-thirds of cake in the market being adulterated. Very hard dry cake may be genuine, but it is indigestible unless it is ground, crushing in the ordinary way being insufficient. We can strongly recommend Waterloo round cake as genuine cake, and quite the best we have tried. Small quantities of cake may be tested at home in this way—Grate a piece of cake with a kitchen grater, which leaves bran and extraneous seed unaltered; or mix half an ounce of cake with 5 ozs. of water. If good it forms a stiff jelly, agreeable to smell and taste; if bad, it has a disagreeable odour, and it contains a large mixture of seeds of *Commelina sativa*, which are much too acrid for cattle. If bran and sand have been mixed with the crushed linseed the water test will set free both, the bran floating upon the surface and the sand sinking to the bottom.

Under the present strained conditions of farming a large outlay on oilcake is a questionable step. We ought certainly to turn home-grown corn to account for the stock herd, and by judicious mixing impart a wholesome variety to the food. Far better is it to do this than to sell the corn at a loss and buy cake also at a loss. Rather avoid cake; use mixed corn and linseed jelly mixed with chaff. But beware of pressing on young stock too fast; there is a safe mean at which we ought to aim. Setons in the dewlap, a rather large proportion of roots and Cabbage in the mixed diet, are our safeguards, and our use of such cool, wholesome, juicy foods must be persistent if we would not run the risk of a heavy loss of our young best stock. Where silage can be had it ought certainly to enter largely into the mixed diet of our stock herd, for here we have no trouble about flavour of milk; rather do we aim at the promotion of a full strong

flow that is quite certain to prove nourishing for the calves. Certainly, if any profit is now to be derived from rearing and fattening live stock it must be done in the manner we indicate. There must be both quick lusty growth and quick returns for our expenditure.

(To be continued.)

WORK ON THE HOME FARM.

The pulling, cleaning, and storage of root crops is being done as briskly as weather admits, so much rain having fallen recently as to hinder work in the open fields, and to quite stop carting on heavy land. Swedes will now be cleared off most of the fields and put in heaps at convenient points easy of access, if possible near a gate or alongside a hard road. We intend holding part of our stock of Swedes in reserve for the breeding flock, and as the roots will not be required for that purpose till March we decided to take them off the land both to preserve the roots and to clear the way for ploughing. Hoggets will be folded upon Turnips; but this must be done with judgment, and not by line and rule. We find our habit of driving out to inspect off farms when convenient, without paying much heed to the weather, proves useful in many ways. A few days ago we did so on a wet day, and upon going out with the bailiff to the old sheep being fattened for market we found them in a fold upon Turnips, standing about in a mud puddle almost over our boot tops. We at once helped to drive those sheep into a spare yard with plenty of open sheds, and orders were given for the sheep to be put in the yard or out in the fold or upon grass, according to the state of the weather. All this involves more work, but it is quite worth while, even from a money-making point of view; and we cannot too often repeat that exposure to cold and wet makes demands upon the health and condition of animals which can only be met by the consumption of an extra quantity of food. The storing of Cabbages in winter is a matter of considerable importance, which, if successful, enables us to keep cattle in yards supplied with this wholesome article of diet till the Thousand-headed Kale is ready. In a recent number of the *Agricultural Gazette* we saw the following simple and what was termed successful plan of doing this:—"Throw up a sort of land or ridge with the plough, and make it pretty level on top. Upon this land lay some straw, then take the Cabbages, turn them upside down, and, after taking off all decayed leaves, place them about six abreast upon the straw; then cover them, not very thickly, with straw or leaves raked up in the woods, throwing here and there a spadeful of earth on the top to keep the covering from being blown off by the wind. Only put on enough of straw or leaves to hide all the green, leaving the Cabbage roots sticking up through it.

"Stored in this way Cabbages of all sorts will be found to keep perfectly good and fresh until April and May, or even later. Not only do the Cabbages keep better in this than in any other way, but they are at all times ready for use. They are never locked up by frost, as often happens with those pitted in the earth; and they are never found rotting, as is often the case with those which are laid with heads upwards and their roots in the ground. Savoys, which are at once the best in quality to keep of all winter Cabbages, may be stored in the same way."

THE COST OF BURNING BALLAST.—My statement that it costs a shilling a yard to burn ballast was made on the hypothesis that draining operations were going on, in which case the clay would be provided ready dug as a matter of necessity by the drainers. Most working men are very wasteful and ignorant; they use thrice as much coal as there is any necessity for. With proper management a ton of small coal will burn at least ten yards of ballast. A working man will want two tons, but in this case the eye of the master will be worth the other ton. I shall be glad to give further information on this subject in answer to any inquiries that may be addressed to the Editor.—W. M.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. ter at 324 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
November.										
Sunday	29.894	43.0	40.8	N.	44.4	50.1	39.8	82.8	35.8	—
Monday	30.163	44.7	43.6	E.	43.8	51.2	37.2	74.7	2.8	0.092
Tuesday	30.089	50.3	45.5	S.	44.9	52.7	44.3	55.2	39.8	0.220
Wednesday ..	29.865	52.3	51.5	S.	46.6	52.8	49.7	53.8	48.4	0.218
Thursday	29.686	45.3	43.2	S.	46.2	47.7	39.2	65.2	31.6	0.047
Friday	30.221	37.9	36.2	E.	44.2	49.2	31.3	66.4	24.5	—
Saturday	30.378	44.8	43.7	S.W.	43.8	50.3	37.5	53.2	32.4	—
	30.042	45.5	43.9		44.8	51.1	39.9	64.4	34.3	0.577

REMARKS.

- 1st.—Very fine day; misty evening.
- 2nd.—Fine bright day.
- 3rd.—Dull morning; wet afternoon; fair night.
- 4th.—Continuous rain till 4 P.M., then cleared up, cloudless night.
- 5th.—Fine till 10.30 A.M., then showery till 1 P.M.; fine and bright after.
- 6th.—Fine bright day; hazy evening.
- 7th.—Thick morning and cloudy day.

A rather changeable week, but on the whole of about the average temperature
G. J. SYMONS.



COMING EVENTS

19	TH	Hull, Taunton, Hammer-smith, and Aylesbury Shows.
20	F	Sheffield Show (two days).
21	S	
22	SUN	TWENTY-FIFTH SUNDAY AFTER TRINITY.
23	M	
24	TU	Liverpool Show.
25	W	

PROPOSED INTERNATIONAL HORTICULTURAL EXHIBITION IN 1887.

WE published last week a series of resolutions of an important character that were passed at an influential meeting of botanists and horticulturists, pertaining to a subject in which the vast majority of our readers are more or less interested. The first resolution is a declaration of the desirability of holding an International Show and Congress of Horticulture in its widest sense, and indicates an appropriate time—the jubilee year of Her Majesty's accession to the throne—for carrying out the project. The second resolution records what is considered the most advantageous site, which is, we presume, that known as the Royal Horticultural Society's Gardens at South Kensington, the property of the Commissioners of the Exhibition of 1851, subject to a proviso that the rest of the grounds be not incongruously occupied at the same time by the Commissioners. The third resolution requests the President and Council of the Royal Horticultural Society to ascertain the views of the Commissioners on the matter, and embodies an assurance that if the proposals of the Commissioners are of such a nature as to afford reasonable hope that the Show and Congress may be carried out in a manner worthy of British horticulture, no effort shall be wanting on the part of horticulturists to secure the success of the undertaking.

As to the desire for an exhibition of the nature indicated, that has long existed; but the time for holding it has not hitherto been declared with sufficient unanimity. The desire is now emphasised, the time accepted, and the site approved. The year 1887 promises to be historical, and the gardens to which millions "know their way" must, or should, be utilised during that year if the continuity of public interest in them is to be maintained. It is hoped, therefore, that the Commissioners will make proposals of an encouraging nature that shall be of mutual benefit to themselves as custodians of the property, to the great industry of horticulture, and to the public, who may derive pleasure and instruction from an inspection of the products of the soil in their ornamental and useful aspects.

An idea appears to prevail in the minds of not a few excellent but enthusiastic individuals that the Royal Horticultural Society should undertake the responsibility of a work of this kind. This is not practicable. That Society was not responsible for the Exhibition of 1866. The responsibility of its success or failure rested with the subscribers to and guarantors of the exhibition fund; and so it must be again if the much greater project contemplated be carried out. The Royal Horticultural Society will undertake the practical governance of the proposed undertaking, and will leave nothing in its power undone to contribute to its success; but we are bound to say it will in a very great measure depend on the Commissioners as to whether the great Exhibition so much desired can be held on their property or not.

We have no doubt whatever that the international resources of horticulture and vegetable products are adequate for the maintenance of an exhibition of commanding interest over a long period; but we have never felt that the whole of the vast space occupied by the exhibitions of the past three years at South Kensington could be satisfactorily furnished as a mere flower show, and with other garden produce. The meeting of last week appeared to be of the same opinion, hence the reference to the occupation of the "rest of the grounds" by the Commissioners. The Exhibition, to be successful, must be on a gigantic scale, and much wider in its scope, far more varied, interesting, and instructive than any mere display of flowers can be, and the whole resources of horticulture, forestry, and agriculture must be requisitioned to achieve a success commensurate with that of the shows of the past three years.

We discussed the question of an International Horticultural Show in 1883, and then published what in our opinion should be the lines on which such an exhibition should be founded. We said then, and repeat now, that it should embrace as far as possible the whole products of the vegetable kingdom—condensed by a correspondent at the time into a "Vegetable Kingdom Exhibition." What we propose, then, is that there should be an exhibition of horticulture, forestry, and vegetable products. The main body of the Exhibition would consist of the two latter. In forestry we should have not only illustrations of the subject as it is practised in this country and the other countries of Europe for the supply of timber for commercial purposes, but that it should embrace representations of all the woods of the natural forests of the United States of America, our own colonies, India, China, Japan, and of the governments of South America; specimens of the timber cut and polished, and transverse sections of the trees. Living trees of the forests of temperate regions might be planted in the open grounds of the garden, the seeds and fruits could be shown in the galleries along with the woods, and the living plants of tropical trees could be shown in a house specially set apart for them. Every manufactured product of these trees might also be illustrated.

Then there are the plants cultivated for their fibre—Hemp, Flax, Cotton, Jute, China Grass. There might be not only illustrations of the plants in all their stages, but also of the industrial element. What more interesting than to see an Indian at his loom weaving Dacca muslins; the various processes for the preparation of cotton from the pod to the spinning jenny; the hemp industry; a rope walk, and the making of twine; straw plaiting, and the employment of straw, esparto, and other fibres in the great paper-making industry; food products, such as cereals, and their methods of preparation from the mill to the oven; pulse, and their products of herbage and forage; plants for supplying beverages, and methods of preparation—tea, coffee, cocoa, wines, hops, beer; starch, and its preparation from rice, potatoes, wheat, &c; also arrowroot, cornflour, and articles of this nature in use by the million, but of their origin and preparation the million are practically ignorant; plants furnishing the materia medica, with specimens of the drugs, and information relative to the sources from which they are drawn and how obtained; tobacco—the manufacture of cigars in operation; sugar, with examples where practicable of preparation from cane and beetroot; preserves and pickles—the various methods of preparing fruits and vegetables could be fully represented, and the magnitude of this industry exemplified; plants cultivated for their uses in the arts—caoutchouc, gutta percha, with the manufacture of water-proofs represented; also plants cultivated for their oils, dyes, perfumes, and tanning, with examples of obtaining and applying their products.

This is a hurried outline sketch of our project, but we believe it is sufficient to show that it will form a strong and sure basis for an exhibition of far-reaching interest and

importance. Add to this the appliances in connection with forestry and horticulture, tools, machinery, structures, methods of heating and every adjunct in connection with woods and gardens, models of roots and fruits, cones, seeds, also zoological museums of beasts, birds, and insects as friends or enemies of the cultivator. Nor would we overlook the curiosities of vegetation. From the museums in this country, and with examples from foreign lands, we feel sure that a collection of objects of a very extraordinary nature could be arranged that would be a source of great attraction to visitors.

With the same agency that has worked so effectively in producing the past exhibitions at South Kensington, at least equally great results might be achieved in carrying out this project. Through the Colonial and Foreign Offices every country would be reached, and every country would be ready to represent its staple industry obtained from vegetable products, while each having its court and native workers, would powerfully attract attention to its own industry, a vast area of buildings would be filled without difficulty, and an exhibition of extraordinary interest and irresistible attractiveness would be produced.

Nor would all this in the slightest degree detract from the extent or beauty of the exhibition or exhibitions of plants and flowers. We can see no obstacle whatever to holding periodical exhibitions throughout the year, and one of them, say in June, to be as rich and on as large a scale as that of 1866, provided sufficient inducements are provided to bring the best examples of culture together at a given time. For instance, a magnificent exhibition of Azaleas, Rhododendrons, and Roses in pots could be provided in early May; then a gigantic miscellaneous exhibition might be held in June, with an international jury of adjudicators, who could be entertained on the 20th, which will be a general "banqueting day." The Pelargonium and National Rose Shows would follow in July; in August the National Carnation, with a second miscellaneous plant and early fruit show on an extensive scale would command attention, as would the succeeding Dahlia and General Cut Flower Show in September. A Potato and Root Show would be a success in October. Then the campaign might be brilliantly closed with a Chrysanthemum and Hardy Fruit Show in November. In this way horticulture would be more fully represented than by any other means, and an ever new and ever widening panorama of attractiveness would be unfolded. Besides and between these shows nurserymen and growers of plants for market might presumably occupy space with Clematises, Pelargoniums, Roses, Rhododendrons, fruit, &c., and thus in some measure a continuous display would be produced to brighten what, if well carried out, would be the most complete exemplification of the resources and importance of the vegetable kingdom ever seen in any country.

As at the exhibition, the Vegetarian Society would no doubt be glad to provide cheap dinners, nutritious and toothsome, composed wholly of vegetable food; and it will be conceded that instruction on the best methods of preparing vegetables and fruit for culinary purposes is as much needed as the popularisation of fish as an article of diet. This aspect of the case demands, and will no doubt receive, consideration.

There is hope now that the great Exhibition contemplated will be held, and we have only to add that the sooner a decision is arrived at and the necessary machinery is put in motion the better. The undertaking will be a gigantic one, but the same energy that has been displayed in preparing for and providing the great Exhibition of the present year will be fully equal to the task of providing another exhibition—essentially different, and certainly of not less public importance—in 1887.

NEW CHRYSANTHEMUMS.

NOVELTIES amongst Chrysanthemums, especially of the Japanese type, have been numerous shown this season, and some have come

to the front so well that they will probably take a place amongst the standard exhibition varieties. Every grower likes to add some of the best new varieties to his collection each year, and to aid in making a selection it is intended so name in the following notes a few of those which have been best shown at the London exhibitions, or which have appeared to best advantage in the trade collections. Before doing so, however, I wish to draw attention to an interesting essay on the Chrysanthemum by a French amateur Mons. Ghys, which contains some interesting matter in relation to the raisers of French varieties and dates of sending out which cannot be obtained in any English publication at present. A brief review of the history and culture of the Chrysanthemum is given, M. Ghys duly acknowledging the assistance he has received from Mr. Harman Payne, the author of the interesting "History of the Chrysanthemum" just published. Then a list of over 200 Japanese varieties is given, followed by much smaller and less satisfactory lists of Chinese, Anemones, and Pompons. It is dated June 1st, 1885, and includes the majority of this year's varieties, with brief descriptions. Of the older varieties few are given before 1880, and the great majority of the best exhibition Japanese forms have appeared since that date. I have selected from the list of Japanese some of the finest and best known varieties, arranging them under the names of their raisers, those from M. Delaux well meriting the foremost place. Several are omitted where the dates were not given in M. Ghys's essay, but a few are named without dates, as they are notable varieties. The selection from M. Delaux's varieties comprise over sixty, and probably he has distributed nearly 100 in the time named, some of which have never found favour with English growers.

VARIETIES RAISED BY M. DELAUX.—Alexandre Dufour, 1881; L'Aube Matinale, 1885; Beauté des Jardins, 1884; Beauté de Toulouse, 1882; Brise du Matin, 1884; Colibri, 1884; Enchantresse, 1886; Etoile du Midi, 1881; Fernand Féral, 1884; Flamme de Punch, 1883; François Delaux, 1882; General de Lartigue, 1882; Ile Japonaise, 1882; L'Ile des Plaisirs; L'Incomparable; L'Incroyable, 1884; Isidore Féral, 1882; Japon Fleuri, 1882; Jeanne Delaux (?), 1882; Jupiter, 1885; Laciniata Rosea, 1885; Lakmé, 1885; Le Chinois, 1882; Madame Bouchardat aîné, 1881; Madame Cannell, 1885; Madame de Sevin, 1884; Madame Deveille, 1883; John Laing, 1885; Mdlle. Antoinette Brunel, 1884; Mdlle. Louise Sabatié, 1882; Mdlle. Mélanie Fabre, 1885; Margot, 1883; Mastic, 1883; Mons. Astorg, 1883; Mons. A. Vilmorin, 1885; Mons. Castel, Mons. Deveille, 1883; Mons. Ghys, 1885; Mons. Harman Payne, 1885; Mons. H. Jacotot, 1883; Mons. J. H. Laing, 1885; Mons. John Laing, 1884; Mons. Juan Cruz d'Eguileor, 1881; Mons. Monssillac, 1883; Mons. N. Davis, 1885; Mons. Léon Brunel, 1884; Mons. Plancheneau, Mons. Tarin, 1883; L'Or de France, 1884; L'Or du Rhin, 1883; Progrès Toulousain, Richard Larios, Rosea Superba, 1880; Rubra Striata, 1881; Simon Delaux, 1882; Souvenir du Caire, 1884; Souvenir de Haarlem, 1885; Souvenir du Japon, 1884; Source d'Or, 1882; Source Japonaise, 1882; Striatum Perfectum, 1881; Le Surprenant, 1884.

VARIETIES RAISED BY M. LACROIX.—Flocon de Neige, 1881; Gloire Toulousaine, 1883; La Nuit, 1879; La Pureté, 1880; Mdlle. Lacroix, 1880; Mdlle. Moulisc, 1878; Mentor, 1880; Rosa Superba, 1880; Tendresse, 1881; Dormillon, 1882.

VARIETIES RAISED BY M. DE REYDELLET.—Carmen, 1884; Cendrillon, 1884; Cérés, 1884; Flamboyante, 1885; Flocon de Neige, 1885; La Triomphante, 1885; Madame de Reydellet.

VARIETIES RAISED BY M. MARROUCH.—Belle Paule, 1881; Madame C. Audignier, 1879; Madame Emile Dufour, Marguerite Marrouch, 1878.

Amongst the Japanese are included several which we now place in different groups; for instance, Madeleine Tezier (de Reydellet) has been shown this season as an excellent reflexed variety by Mr. Molyneux, while Fabian de Mediana (1882, Lacroix) has taken its place as one of the best of the Japanese Anemones, though this season it has been so late in developing that the blooms at the earlier shows were by no means in character. There are many others included in the list that are unknown in cultivation in England, or are in so few collections that they are rarely seen. The English nurserymen have tried and discarded many of these, and only the best are preserved, for their merits or defects are soon perceived, and amateurs are saved much trouble and expense, for in such a large number of novelties as make their appearance from France every season there must necessarily be a good proportion of indifferent merit. Either the French growers do not exercise the same discrimination that specialists do in this country, or the varieties assume superior characters under their bright skies than they do in foggy England. In any case it is certain that the home nurserymen in selecting the most promising of each year's productions are doing an invaluable service.

In the list of Chinese varieties furnished by M. Ghys seventy-

three are named, mostly incurved, but some, as Julie Lagravère and Progne, are evidently out of place. This list is indeed a very imperfect one, both the raisers' names and the dates being omitted in numerous cases. The principal of the French varieties is Lacroix's Jeanne d'Arc, which was sent out in 1881. Mons. Viviani Morel, one of M. Delaux's 1885 novelties, has been shown on several occasions this season, and certificated at the Aquarium Show. It is more inclined to a reflexed form than an incurve, but the florets nearly erect.

Twenty-one "Chrysanthèmes Avéoliformes," or Anemone varieties, are named, of which we may mention Madame Berthie Pigny (Dr. Audiguier), Madame Clos (Marrouch), Mademoiselle Cabrol (1879, Marrouch), and Sœur Dorothee Souille (1877, Marrouch).

The new varieties which have made their appearance in England this season include several of sterling merit, while some that were introduced last year, such as Val d'Andorre and Belle Paule, have most deservedly won the admiration of numbers of growers, and nurserymen who make a specialty of Chrysanthemums may expect a large demand for them. Of the strictly new varieties those that have found most favour are all Japanese—namely, Lakmé, Jupiter, Madame John Laing, L'Aube Matinale, Mons. A. Vilmorin, Mons. Freeman, Mons. N. Davis, L'Adorable, Souvenir de Haarlem, Mons. Ghys, and Mandarin; the slightly older Brise du Matin and Margot also having received substantial recognition. The only incurved variety of any value that has been shown is Messrs. Carter's sport from Queen of England, appropriately termed Bronze Queen, which the National Chrysanthemum Society honoured with a certificate. A few early-flowering and other varieties have also been added, but to these and the preceding I must refer more in detail in some other notes.—LEWIS CASTLE.

ESTIMATES OF VEGETABLES.

ONIONS.

As a crop for market Onions are important, if, indeed it is not one of the most valuable from a paying point of view. The crop of course varies according to the season, the present one not being favourable, for though the crop was not a failure the dry weather so influenced it as to render the bulbs small—picklers being plentiful and cheap; added to this the larger-sized ones have not kept well, and large importations have kept prices down—the prices being at present 60s. to 90s. per ton. I have, however, no cause to complain, as I have 12 to 14 tons to the acre, and the salesman gets 4s. 6d. and 5s. per cwt., the Onions being fine, and such always command sale and bring the best returns.

The varieties of Onions are very numerous, but I think they may safely be divided into two sections, or those with flat crowns, and those raised or pear-shaped. The first as a rule attain the largest size, and are usually good keepers, as the flat or hollow crown seems to form a receptacle for water; and if the weather prove wet at the time of maturing, the bulbs decay at the neck, or become so saturated that they do not keep well after storing. The latter or pear-shaped, having the neck high, throw off the wet better, and they keep very much longer, indeed are the only sorts worth terming keepers. Flat Onions are those of the Spanish or Portugal type, and all are evidently of one stock; indeed, Nuneham Park, Reading, Banbury Improved, Rousham Park Hero, with others are selected forms of the White Spanish. I had those this year except Nuneham Park, and that I had grown it in former years and found it no improvement, in fact all these improved sorts lose their identity in a season or two.

Of the yellow Onions I have only grown two—viz., Danver's and Giant Zittau; they appear to be an admixture of the early white and brown varieties. Danver's Yellow I find a very bad keeper, and not nearly so good a cropper as White Spanish, but Giant Zittau I find a capital cropper and excellent keeper, a very valuable Onion, especially where there is an objection to brown varieties. These are flattish in shape, and evidently are intermediate between the White and Brown Spanish, only the Giant Zittau has more of the Globe shape, to which it perhaps owes its keeping qualities.

The oval or pear-shaped Onions are all of the Strasburg type, and are very variable. In the old Strasburg the bulbs are sometimes flat. It originated from the Spanish, but in the finest the oval form is prominent, and gives rise to the variety Deptford, which is marked by a paler skin; indeed, so nearly alike is this and Brown Globe that they may be placed in the same category, only I think Brown Globe by far the best form, as the bulbs have an oval shape and are better keepers. Perhaps the very finest of this section is Bedfordshire Champion, fine in form, capital in cropping, an excellent keeper and of the very best. Of the same class is the indispensable

James's Keeping, which as a keeper and quality late in spring is unequalled.

My selection therefore of summer Onions are White Spanish or any of its forms if expense of seed is no object, Bedfordshire Champion and James's Keeping. I have omitted Blood Red, as its flavour is not liked by the consumer.

Of the autumn-sown Onions there is none better for drawing young than White Lisbon, the bulbs come in quickly and sell well as bunch Onions. Early White Naples is also good for early bulbing and bunching, and of the Tripolis Giant Rocca is far the best.—UTILITARIAN.

BIXA ORELLANA—ANNOTTA.

It is from the shrub the foliage and flowers of which is now figured that the Annotta of commerce is produced. Plants are seldom seen in this country except in botanical collections; but they are not devoid of



Fig. 68.—*Bixa orellana*.

ornament by their fine green leaves and chaste pink flowers. When grown from seed the plants attain a large size before producing flowers; but when raised from cuttings they flower freely when in a comparatively dwarf state. Cuttings of half-ripened wood strike readily in heat under a bellglass. The plants require a summer temperature of 65° to 85°, and a winter temperature of 50° to 60°. This shrub grows spontaneously in South America, and is cultivated in the East Indies. The fruit is like a Chestnut, a two-valved capsule covered with flexible bristles, and contains a certain number of seeds smaller than peas. These seeds are covered with a soft, viscous, resinous pulp of a beautiful vermilion colour and unpleasant smell like red lead mixed with oil; and it is this matter which constitutes Annotta. The mode in which it is obtained is by pouring hot water over the pulp and the seeds, and leaving them to macerate until they are separated by pounding them with a wooden pestle. The seeds are then removed by straining the mass through a

sieve; and the pulp being allowed to settle, the water is gently poured off, and the pulp put into shallow vessels, in which it is gradually dried in the shade. After acquiring a proper consistency it is made into cylindrical rolls or balls, and placed in an airy place to dry, after which it is sent to market. This is most common in the English market, and is in the form of small rolls, each 2 or 3 ozs. in weight, hard, dry, and compact; brownish without and red within. The other process of manufacture is that pursued in Cayenne. The pulp and seeds together are bruised in wooden vessels, and hot water poured over them; they are then left to soak for several days, and afterwards passed through a close sieve to separate the seeds. The matter is then left to ferment for about a week, when the water is gently poured off, and the solid part left to dry in the shade. When it has acquired the consistency of a solid paste it is formed into cakes of 3 or 4 lbs. weight, which are wrapped in the leaves of Arundo or Banana. This variety is of a bright yellow colour rather soft to the touch, and of considerable solidity. Labat informs us that the Indians prepare an Annotta greatly superior to that which is brought to us, of a bright shining red colour, almost equal to carmine. For this purpose, instead of steeping and fermenting the seeds in water, they rub them with the hands, previously dipped in oil, till the pulp comes off and is reduced to a clear paste, which is scraped off from the hands with a knife, and laid on a clean leaf in the shade to dry. Mixed with lemon juice and gum it makes the crimson paint with which Indians adorn their bodies; and they employ the leaves and roots in cookery to increase the flavour and give a saffron colour.

Annotta is principally consumed by painters and dyers; but it is also used in Cheshire, Gloucestershire, and North Wilts to colour cheese with the pale yellow or flesh colour which distinguishes that which is made in these districts, the makers in Cheshire using 8 dwts. to 60 lbs. of cheese; while those of Gloucestershire use 1 oz. to 1 cwt.—quantities which are too small to affect the cheese in any way except in colour. The Dutch use it for heightening the colour of their butter. It is used for the same purpose in some English dairies.

PLANTING EVERGREENS AND FOREST TREES.

THOUSANDS at the present time are either engaged in or about to commence this operation, which cannot be regarded otherwise than one of the most important connected with gardening. The evil effects that result from planting injudiciously and bad management of the plantation afterwards, is painfully visible in too many gardens, and a note of warning at this period may be seasonable.

Planting and the management of the plantations afterwards are in a measure so closely connected that it is impossible to consider them separately if trees, plantations and shrubbery borders are to prove in the future ornamental and interesting. It matters very little what care is taken at planting, or what striking objects it is intended shall eventually be displayed, if the plantations are not attended to afterwards, for upon this entirely depends whether the end in view is ever attained. Good planting with thoughtful care in after management will result in the development of noble symmetrical specimens, each possessing characteristic features of interest and beauty. Badly managed plantations and shrubbery borders produce exactly the contrary—a confused mass of vegetation struggling for existence. For a time crowded luxuriant vegetation may appear beautiful to all, but an experienced man at once discerns the work of destruction that is going on, and knows only too well that the whole will be ruined in a few years. The better the preparation at the commencement, and the more robust their growth, the sooner they are bare and unsightly and fit only to be cut down and the ground replanted.

Plantations and shrubbery borders should be attended to annually, unless severe thinning is practised, and all trees and shrubs thinned out that are likely to crowd those to be retained for the future ornamentation of the grounds. Every tree or shrub that will interfere with the proper development of these should be lifted and planted elsewhere. This is not always practicable, and in some instances not desirable, for it depends whether those planted to fill up are really worth lifting. They can, however, be cut back by degrees, so that a great gap is not caused until they can be spared altogether. It is much better to sacrifice all that are not wanted, whatever they may be, directly they are becoming crowded, than allow them to grow together to the destruction of all. Gardeners are not wholly to blame for the neglected condition in which shrubbery borders and plantations are seen. Employers often object to the removal of a tree, or even a branch, and in consequence the whole soon goes to ruin; but I am inclined to think that if the importance of timely thinning was properly explained to them they

would soon see the value of such work, as I have proved to be the case in more than one instance.

When planting is done about the pleasure grounds it is often necessary to plant more closely at first than need be the case in other positions, so that a furnished appearance is presented at once. Under these circumstances mistakes are often made, and when the trees want more room the whole must be turned over, for thinning cannot well be done in any other way if due provision was not made at the commencement. The future even in these cases must be considered, and the plants so arranged that thinning when required can be done readily and easily without having to lift those plants that are intended to develop into specimens to furnish the space planted. When the whole have to be re-arranged the plants are checked and growth for a year or two at least rendered less robust. It is necessary in many instances to avoid this, especially when an endeavour is made to grow the plants into specimens as early as possible. When planting, say, a clump of Hollies it is wise to dispose the principal plants where they are to remain sufficiently far apart that they can attain full size without having to be removed afterwards. The space between them can be filled with similar plants or others to be relifted and planted elsewhere as the permanent plants develop. After these are removed those intended to remain will have attained some size, and the ground between them can be levelled and sown with grass seeds, if this can be done to improve the view or appearance of the ground. If not, and the plantation looks thinner than it is desirable to have it, a few smaller plants can again be placed for a season or two. Bulbous and herbaceous plants may occupy the ground for a time.

Something more than merely digging a hole, putting the roots of a tree in it, and then covering them with soil is needed. Planting with a view to the trees developing into grand specimens necessitates a thorough knowledge of the tree or shrub to be planted; its natural habit of growth, the size under favourable conditions to which it will attain, must be taken fully into consideration. Many mistakes are made through insufficient knowledge of these matters, and also for the want of knowing the surroundings and conditions under which trees, shrubs, and Conifers are displayed to the best advantage. The last is really a matter of observation rather than practice and experience, for much valuable information can be gained by observing the conditions and position under which certain deciduous trees and evergreens look most beautiful. My advice to young gardeners is to note particularly these matters, for the information so gained will prove invaluable to them in the future when the responsibility of this work devolves upon them. It may save many blunders which a lifetime afterwards would prove perhaps insufficient in which to rectify them.

Whether clumps of trees are planted for immediate effect or not, it must be duly considered before planting what deciduous trees and evergreens, if associated together, are to remain to become fully developed for permanent objects. If the ground is sufficiently large to accommodate one common and one Purple Beech, two Chestnuts red and white, a scarlet and a white Thorn, and two Laburnums, when fully developed, and these are the trees it is desirable to associate together, they should be so disposed on the ground that a distinct feature can be observed from as many points as possible. These main trees must not be planted a few yards only, but the size to which each will attain as they approach maturity should be considered and the plants arranged accordingly. A greater space still must be allowed if it is intended to have specimen Hollies, Pines, and Conifers amongst them. This system where practicable should be followed, for the one displays wonderfully the advantages of the other at the different seasons of the year. The evergreens give a furnished appearance during the winter months when deciduous trees are destitute of foliage. After the main plants have been arranged the remaining ground, if planted at first in the forms of clumps or plantations, can be filled with Sycamores, Privets, Rhododendrons, or any others that the planter may desire to be lifted out or cut down as the main trees require room for extension. Perhaps one of the greatest mistakes in planting is the association of forest trees and evergreens. How frequently do we find narrow belts or small plantations with two or three rows of forest trees, and the front formed with a row of Hollies, Rhododendrons, and others. These may look well while they are young. The front row or two of evergreens may be expected to make reasonable progress; but in a few years the strong ones at the back rob the ground of its fertility, and the smaller slower-growing plants fail to make headway, and soon become bare at the base. At first the evergreens are planted for the purpose of blocking out the interior of the clump, but soon fail to do so through being robbed of sufficient food, partially excluded from light, and subjected to drip from the trees in the background. This system of planting cannot be too strongly condemned, for in the end it is sure to prove disappointing.

Although I have advocated the association of ornamental deciduous trees and evergreens together, it is only when the two can be planted with plenty of room for the development of each without the one robbing the other of the necessary materials requisite for development. Plantations can be made of forest trees with evergreens in the front, and very beautiful and effective they are if planted right at the commencement and duly attended to afterwards. It is essential to accomplish this to keep the former well in the background, which in narrow strips as alluded to above cannot be done. The tallest trees should be planted in the centre of a large clump, or well in the background. If the former, an evergreen front may be presented all round, the latter being followed when only one front of evergreens is required. It may be supposed that the centre trees are Sycamores or others of similar growth, while to the front of these trees of a smaller size should be planted, such as some of the varieties of Mountain Ash, Thorns, Laburnums, and other trees of moderate growth. In the front may be planted evergreen Privets, and few plants form a better background for other evergreens, or are more beautiful when laden in summer with their deliciously fragrant trusses of white flowers. Privets deserve planting more largely as flowering shrubs when the system of planting I am attempting to illustrate is practised, for they suffer less by association with forest trees than any other evergreen. In good soil they grow rapidly, and soon form large bushes. To the front may be planted Silver Hollies, and in the angles hybrid or other Rhododendrons. This example is only one of many that could be given of planting clumps of deciduous trees and evergreens together, where the last-named would flourish and answer the purpose for which they were planted. This in a large measure depends upon judicious thinning after planting. The Privets, as well as the other evergreens, must be given plenty of room to develop, then they will furnish the front, and continue to do so afterwards for an indefinite period. It is surprising under favourable conditions what enormous bushes, beautiful in shape, Rhododendron ponticum will form in a very few years if given plenty of room; but these are generally planted thickly and allowed to become crowded and bare at the base.

Another advantage of planting thinly and thinning out the plants not wanted directly they show signs of crowding is the fact that those exposed to light and air will be thick all round, and thus brave winds and severe weather much better than when drawn up weakly together. In exposed situations it is of the utmost importance that each plant or tree stands separately with plenty of room to develop naturally.

Before planting it is necessary to trench the ground as deeply as the soil will allow of this being done. If the soil is poor and unfertile a good coating of manure should be added. For Rhododendrons and such evergreens nothing can be better to incorporate with the soil than leaf mould, for the majority of trees and shrubs grow most luxuriantly in it. When planting Hollies, Pines, or choice Conifers it is a good plan to give to each plant a few barrowfuls of fibry loam, to which about one-third of decayed manure has been added. This will give the plants a good start, and insure their lifting with good balls of roots when the first thinning requires to be done. If the soil upon the portion of ground to be planted is poor and shallow a greater quantity of fresh soil may be given to each of the choicer plants. When they are planted singly on the lawn or elsewhere a good-sized hole should be made, say three times the distance from the centre, that the roots will extend from the tree or shrub to be planted when first placed into the ground. The soil at the base should be well dug and manured, mixing with it a good percentage of fresh soil, which should also be incorporated with soil for filling in about the roots. If a good preparation is made at the commencement, and the surrounding soil is moderately deep and fertile, the tree or shrub will in all probability develop into a good specimen without further attention at its roots. When the soil is shallow it is a good plan after the roots have taken full possession of the soil prepared for them to cut a trench round them and fill it with fresh soil and manure. It is surprising how this helps plants, and in the end they abundantly repay for the labour expended upon them.

In order to insure quick luxuriant growth the ground should be well prepared by being trenched and manured as early in the season as possible. The planting, if possible, should be done before the ground has had time to become saturated with rain. Trees and shrubs grow much more luxuriantly in trenched than in untrenched land. This is the case, however, in the majority of soils. There may be exceptions to this rule.—WM. BARDNEY.

WHITE PLUME CELERY.

As this novelty is now receiving flattering testimonials from men whose opinions we have every reason to respect, I would like to ask

"Kitchen Gardener" or anyone who can speak from practical experience, how it turns out after a snowstorm?

"Kitchen Gardener" says, "Planting and weeding is the whole of the details necessary for its successful culture." If this be so, then it must indeed be an acquisition, and in these hard times well worthy of extensive cultivation; but will it, like Cabbages or Broccoli, rise after being beaten down with snow, and prove to be as good for a second-course vegetable as Celery grown in the old-fashioned way.

An answer to this question will, I venture to say, interest more than—J. MCINDOE.

"THINKER'S" NOTES.

SHOWING LATE GRAPES.—I have only to say that I feel I am no match for "Thinker" at "hedging" and evading a plain issue, and therefore decline to prolong the discussion. His last apologetic six paragraphs are a sufficient commentary on his earlier remarks. If it had been a simple question of whether some object was black or white "Thinker" would, I doubt not, have displayed just the same casuistry, and left the question where he has left the present one. As to the "sincerity" of my own convictions, it is at least as genuine as his own, which has not been called in question. It is his opinions that are criticised. I have done nothing at variance with the position I have taken up here, and "Thinker's" innuendoes and insinuations assume more than anyone has any right to do.—NON-BELIEVER.

P.S.—I have not used any such expression as "I do not show now because from a pecuniary point of view I can do better." The "now" is introduced by "Thinker" himself for a purpose of his own, and does not express either my position or opinion. The alteration is on a par with "Thinker's" other unscrupulous misrepresentations—to wit, his conversion of my "putting it on a low ground" into "accusing a body of men of being engaged in a low calling," in order to render his own dubious position less conspicuous.—N. B.

POTATOES.—In reply to your correspondent, I am able to say that in my opinion the Reading Russet Potato is a variety of considerable value for table use. It is a second early, ready in August, and of medium growth, producing well in rows 2 feet asunder. The tubers are of good and uniform size, rough in the skin, and, though this is dark, the Potatoes are quite white when cooked and of first-rate quality. I find a certain prejudice against coloured Potatoes in the market and amongst cooks generally, but the one I have to deal with is quite content with the variety in question. I know very little about the other red and Vicar of Leham, but am told it is not very good.—A COUNTRY GARDENER.

NOTES UPON DAFFODILS AND NARCISSI.

(Continued from page 428.)

GROUP 2.—THE PEERLESS OR MOCK NARCISSI.

N. BARRI.—This is a sub-section, including several most beautiful varieties supposed to have originated from a cross between *N. poeticus* and *N. pseudo-Narcissus*. The following are what I have proved to be best and honestly worthy a place in any collection—Conspicuous, division rich yellow, very broad and large; cup yellow, conspicuously margined with scarlet; a gem of the first water. John Stevenson, divisions pale sulphur, cup of the same colour; very large and spreading. Maurice Vilmorin, divisions creamy white, cup rich lemon heavily stained orange-scarlet. Flora Wilson, yellow divisions, cup of same colour, distinctly edged scarlet.

N. INCOMPARABILIS (the Peerless Daffodil of John Parkinson).—The typical form is well worth growing, with its large flattish spreading flowers of a rich yellow, and very suitable for planting in masses. There are a considerable number of forms centring around this, arranged in the sub-sections of albus, albidus, concolor, and sulphureus, which space will not admit of enumerating even, and for further information concerning which I must refer my readers to "Ye Booke of Ye Daffodyl," published by Barr & Son, King Street, Covent Garden. I will merely select a few of the best varieties, and cannot do better than begin with Sir Watkin, a so-called new variety, certainly new to commerce, but it has been revelling in certain Welsh valleys I could name, perhaps for a century, nevertheless it is a first class kind, producing immense flowers, sometimes as much as 5½ inches across; the perianth rich sulphury yellow, cup unusually large, approaching the Ajax section, rich aureolin yellow, deeply fringed; it possesses a vigorous constitution, and will always be highly esteemed both of borders and pot culture. Mary Anderson is a gem, perianth creamy white, large and flat, cup deep orange scarlet; most conspicuous, indeed there is not a more effective variety. Princess Mary of Cambridge, large flowers with white perianth; cup large, very widely expanded, rich orange; a most distinct and beautiful variety. Stella, one of the oldest and best for cutting, as it comes in very early, following hard on *N. poeticus ornatus*; perianth pure white, cup pale lemon. Crawfordi, immense flowers, the perianth

divisions pointed and bent inward; cup rich yellow; a very handsome and distinct kind.

N. LEEDSI.—This represents a beautiful series of hybrid forms appertaining to *N. incomparabilis* in flower form, but supposed to have first resulted from a cross between *N. montanus* and *N. Pseudo-Narcissus*. Amongst the best are the following—*Amabilis*, perianth divisions silvery white, very large; cup very long and prominent, delicate primrose changing to white; extremely beautiful. *Gem*, divisions white, very symmetrical; cup very pale primrose, deepening in colour with age; this is one of the perfectly formed flowers of the series. *Superbus*, divisions white, large and drooping; cup long, primrose, fading to white with age. *Queen of England*, a model flower, with white divisions; cup canary changing to white.

N. NELSONI is a very distinct form with large spreading flowers; perianth pure white; cup rich yellow, rather long and cylindrical. *Aurantiaea* produces rather smaller flowers, and the cup is heavily stained with orange-scarlet, a gem of gems, but extremely scarce. *Pulchellus*, flowers of exquisite form, divisions white, cup yellow, smaller than the others, and drooping.

GROUP 3.—THE POET'S AND POLYANTHUS NARCISSI.

N. BURBIDGEI.—This represents a good number of very pretty early-flowering varieties, hybrids between *N. incomparabilis* and *N. poeticus*, but as they favour the latter most they are arranged in this group. The best of them are the type with creamy white divisions, and the cup edged with scarlet—*Conspicuous*, perianth divisions pale sulphur; cup large, edged with scarlet; a fine variety. *John Bain*, divisions white; cup citron; very lovely. *Jenny Deans*, divisions creamy white; cup yellow, edged with scarlet. *Robin Hood*, divisions clear white; cup lemon, edged with orange-scarlet; very distinct and effective.

N. POETICUS (the Poet's Narciss).—It is difficult to say which is the typical *Poeticus* Linnaeus examined when he christened this charming species, as the forms are very numerous, some early and others late-flowering, the first batch in March and April, the last following on in May, sometimes into June. Of the first series *angustifolius* is worth growing, the divisions are pure white, crown margined with rose; flowers rather small, and foliage narrow. *Ornatus* is in my opinion the best of all; pure white, with large, broad, flat divisions; cup margined with red most sweetly scented, and simply invaluable for cutting, &c. Of the May-flowering ones *recurvus* may be mentioned, which is commonly called the Pheasant's Eye Narcissus, and too well known to require description; to this belong the beautiful double-flowered form appearing at the same time, and universally in demand for floral work.

N. TAZETTA (the Polyanthus Narcissus).—There are a large number of charming varieties of these, but I will only name half a dozen. *Bazelman major*, immense trusses of large flowers, pure white, with yellow cups. *Gloriosus*, creamy white, with orange cup, very charming. *Grand Monarque*, large flowers, pure white, citron cup, a very striking kind. *Grand Soleil d'Or*, yellow divisions, rich orange cup, very free and bright, one of the best for general cultivation. *Jaune Supreme*, primrose divisions, and orange cup; very fine. *Paper White*, pure white, flowers much smaller than the others, but very early and useful for forcing. The value of these Narcissi for pot culture is well known, but they are not half so much appreciated as they should be; no greenhouse should be without a fair quota of them to cheer the early months of the year.

DOUBLE DAFFODILS AND NARCISSI.

N. CAPAX (Queen Anne's Double Daffodil).—A very pretty kind of perfect form, soft primrose colour, segments imbricated in the form of a star; it is comparatively scarce, but somehow it has accumulated in Ireland. I came across some fine batches there last spring which quite surprised me. It should certainly be in all collections.

N. CERNUUS, FL.-PL.—A duplex form of one of the Silver Trumpet, most beautiful and scarce, creamy white and primrose. There are two forms, one in which the trumpet is entire, with the tube well filled with segments; the other has the trumpet quite broken up, the divisions being more numerous and developed, when fully open resembling a Rose somewhat. This is, I think, the rarer variety of the two.

N. PSEUDO-NARCISSUS, FL.-PL.—This is comparatively scarce. In a wild state the trumpet is intact and filled with segments, but there is a charming variety which has been circulated recently as *albus aureus* fl.-pl., which is in form much like *N. capax*, but the deep golden yellow and pale sulphur segments are prettily alternated, thus forming a most effective feature.

N. TELAMONIUS, FL.-PL. (Van Sion).—This is the old com-

mon double Daffodil of our gardens, and needs no further mention. All the foregoing belong to No. 1 group. The following belong to the Peerless section.

N. INCOMPARABILIS, FL.-PL. (Butter and Eggs).—This is a very common form, most abundant in many places, admirably adapted for naturalising, unfortunately frequently distributed for Orange Phoenix, a much superior kind. Those seeing the latter offered very cheap—well, lower than 12s. per 100, should fight shy of such an offer.

N. I. AURANTIUS, FL.-PL. (Orange Phoenix, Eggs and Bacon).—A grand variety with immense double flowers; the outside white, the centre sulphur and deep orange, most effective for borders.

N. I. SULPHUREUS, FL.-PL. (Sulphur or Silver Phoenix, Codlins and Cream).—Truly the Cream, if not the Codlins, of this series, producing very large flowers, at first pale sulphur, changing to creamy white, sweetly scented, and of elegant outline.

N. ODORUS MINOR, FL.-PL. (Queen Anne's Double Jonquil).—A very pretty dwarf-growing variety, with very double flowers of a rich golden yellow, sweetly scented, and most desirable in any border, where it should remain undisturbed, as it rebels against intrusion when once established. The double form of *poeticus* I have previously referred to. In concluding these notes I wish to impress upon the reader how inadequately they represent the great and lovely family of Daffodils, as the selection is a most rigid one, but as much more space is taken up than I had intended, for the nonce this must be sufficient.—J. T. R.

FRUIT AND PLANT HOUSES.

(Continued from page 421.)

In passing to the construction of houses I may briefly allude to the site, which for any purpose should be high and dry—i.e., if there is choice of site let it be such that the water will drain from the proposed structure. This more particularly applies to fruit houses, which are best when they are not only on rising ground, but have the masonry disposed that the borders will be so high the water will pass away freely. Even plant houses, except for special purposes, are best kept well above the surrounding ground level, particularly when the plants are of flowering size. Still, houses for plants are very often sunk, as they then afford a greater uniformity of moisture. Such are low span-roofs with often a sunken path as seen in nurseries for the growth of young stock, but these houses are not so common in private gardens as their usefulness warrants, especially as they are so inexpensive and appropriate for growing plants to furnish conservatories. One of the greatest mistakes made in horticultural building is having a large greenhouse or conservatory in which a display is expected to be kept without any regard to the means by which it is to be maintained. The large house is very well, but it proves disappointing unless aids are forthcoming in the shape of small houses in which plants can be raised to maintain the successional display.

In the matter of masonry or other base for the structure of whatever description little need be said, only it should be of sound durable material and put together in a workmanlike manner. There is one point, however, which I think deserving of more than passing notice—viz., the width of the masonry. For ordinary houses we have 9-inch walls with correspondingly wide wall plates, or 11 inches, leaving an inch inside for plates, and a corresponding inch or more outside to allow for drip, and its groove on the outside to cause the water to fall clear of the wall. Now, I do not believe in this waste of timber; in fact, the less we have of it the better alike for economy and durability. The larger the timber the greater is the danger or difficulty of securing it free from sap, knots, and other imperfections. There is no reason why the walls for three or four courses or a foot to 15 inches under the wall plate should be more than 4½ inches thick, especially if built in cement, whereby we add 4½ inches to the width of the house for each wall, and reduce the timber forming the front and back, side or sides, of the house by one-half without any depreciation of the strength or durability of the structure. This forms a ledge available for the hot-water pipes, or it may be used as a shelf for small plants, or if a stage it widens it by 4½ inches, which certainly is a consideration. In the case of low walls there is no need to have them more than 4½ inches thick if they have proper foundation and are built in cement.

It may be observed that I am fully cognisant of the value of thick walls in preventing the radiation of heat, as well as of their absorbent power both in regard to heat and moisture, and of their value in this respect there is no question. I see more reason, however, why even these, in the case of lean-to's or unequal spans, should be taken up their full thickness to the wall plates, but be narrowed to 4½ inches for their top three courses at least, so as to render less timber necessary, or lessen the necessity for an expensive coping by covering back walls with the glass, which would widen the house, taking back

and front together, by 14 inches, and that means a bunch of Grapes more per rod if not two, or a Peach per foot of surface gained. Of course hollow walls are better than solid, being warmer and drier and non-conducting, and which we may still have along with the narrowing of the walls where they receive the wall plates, as for the spaces to be of value they must be closed, which the narrowing of the walls causes to be done perfectly.

In timber, there is no objection against red deal, but it must be selected and thoroughly seasoned. If it contains sap it will not stand wet and soon decays. Any saving in first cost by the employment of unselected or unseasoned timber is very unsatisfactory and expensive in after repairs. A house built of deal containing sap I have known to become so decayed in seven years as to be unsafe, and I have found it so bad in a dozen as to necessitate their renewal. Sound, thoroughly seasoned red deal will last a lifetime if duly painted; indeed, half a century or more if properly put together, which has more than some imagine to do with the durability of glass houses. It is little use being careful about material if the joints are so bad that they will allow wet to enter, as decay is then certain to result, and what is the good of a roof with rafters or sashbars rotten at the eaves?

Pitch pine is better no doubt than red deal for certain purposes—*i.e.*, in houses much subjected to moisture, but is more expensive and more costly worked; but the best of all is undoubtedly teak, which, however, is still more costly. These three—1, red deal, 2, pitch pine, and 3, teak, are, according to my knowledge and experience, the only suitable woods for fruit and plant houses. I have, it is true, seen some mahogany lights that were little, if indeed any, worse for wear after many years' use in a conservatory, and where they still are in excellent preservation.

Whatever wood is used, as little of it as is necessary to insure stability only should be used, so as to obstruct as little light as possible, and it should be strengthened or stayed in such manner by iron, whether in the shape of pillars, tie bars, or brackets, as to still further insure its stability against the violence of storms, as well as to prevent any departure of the timber at the joints. The joints of the wood, whatever they may be, should be perfect; by perfect I mean close-fitting, so that when the jointure is made, the parts to be joined being white-leaded no joint will show, only pieces of wood joined together without so much as a crevice remaining, but contrariwise forcing out the white lead, and there is consequently no joint to putty up before or at painting. There is no opening for the wet to get in, and such is as good at the joints as in the solid. This is a main point in fruit and plant house construction, for good materials are only wasted by bad workmanship. I have had a practical illustration of this. I had a Rose house 54 feet by 15 feet put up by a horticultural builder (Messrs. Foster and Pearson, Beeston, Notts), into the joints of which a pin could not be pushed, and I did not see the painters going over the house before painting with the indispensable lump of putty in one hand and the putty-knife in the other. I do not think putty to fill up cracks—*i.e.*, joints, were used to the extent of the size of a walnut either inside or outside the house. I have had other work done by local men, and I can push my knife (a Peach pruner) blade through plenty of the joints where the rafters join the wall plates. If the work is wanted to stand it must be good, otherwise it will be anything but economical. There is no cheapness in indifferent material imperfectly manufactured, true economy consisting in sound material employed in a skilful and thrifty manner.—G. ABBEY.

(To be continued.)

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 5.

A SHORT time ago all the world wondered—at least in west London—why some individual chose all of a sudden to dislodge, or attempt to dislodge, the seemingly inoffensive sellers of milk and cakes near the Spring Gardens gate of St. James's Park. People laid it to the charge of George, ranger, but he was exonerated, and Her Majesty forbade the removal of the last two persons, who still hold stalls there as representatives of "Milk Fair," well-known in Georgian times; but actually the spot, as a place for refreshments, carries its history back to a date before the great civil war, when in the reign of James I. there was a bowling green here, a pleasant walk, and gardens in which nobles and citizens strolled, or they ate and drank under the shade of its trees, the spring, from which the place takes its name, being one of its attractions. Evelyn, always an observer of trees, alludes to the thickets that once existed here, so suitable, he remarks, for the evening wanderings of lovers. But not long after the Spring Gardens underwent a change, the fowls were removed, the ponds filled up, the green walks closed, and part of the ground being absorbed in the Park, upon the remainder a frontage of houses was built. I wonder, by the way, since the fashion now is to revive antique pastimes, whether keeping pheasants for amusement merely will again become as popular as it was in the seventeenth century.

Gardens there still are at Spring Gardens, though not accessible to the public, between St. James's Park and the houses looking towards Charing Cross, and they have both trees and shrubs if the thickets are no longer to be seen. One part, indeed, of these gardens is so far overgrown that the paths are seldom dry, and some few flowers of a perennial sort that are scattered about put forth but feeble blooms. Perhaps, though no spring is visible now, there is a natural moisture here, for Poplars flourish, and Lilacs and other shrubs are generally more leafy in autumn than is usual about London. According to a local tradition, on the morning of his execution, as Charles I. took his way to Whitehall attended by his escort, he pointed to a tree in the Spring Gardens, and said to one of the officers, "That tree was planted by my brother Henry." I find there now no tree of sufficient age to date back from the period when this might have been planted. It is rare to find any tree growing near London much more than a century old, and then it would be either an Oak or a Yew; but curiously enough, there are sundry Yew bushes in Spring Gardens which may be descended from some Yew that has been removed.

Amongst the evergreens we noticed a few somewhat stunted Spruce Firs, a species seldom met with in old London gardens, and across one path there hung festoons of Clematis, leafy till November, though not displaying those feathery seed heads so familiar to the rural stroller, and which are exceptionally abundant along many lanes this autumn. As a rule we find the Elder, of all the deciduous shrubs growing in London, retains its leaves the longest, which may be one reason why it was formerly so much planted, though its appearance is not specially attractive. In this garden are some of those ancient Hollies that one comes across, whose utmost annual effort at growth is the putting forth an insignificant number of spring leaves, but then they persistently retain their old leaves year after year perhaps, until they slowly waste away on the branches. Many years ago, it would appear, round one side of the Spring Gardens a mound was raised as a screen, upon which various shrubs were planted. In course of time much of this earth has washed down, leaving the roots of some of the bushes partly exposed, but these are still growing and seemingly thriving. Outside the enclosure, and within the Park, yet certainly a portion of the original Spring Gardens, is a grassy space, of almost triangular shape, which has a large Plane in its centre, and a few others of different sizes along its sides; here juveniles are occasionally permitted to gambol. This, it has occurred to me, may have been the site of the Spring Gardens bowling green, where princes once played.

Standing at the Spring Gardens gate of the Park we overlook Trafalgar Square, an open space which has received a large share of unkindly criticism, and one hesitates to add thereto, but really its trees are deplorable objects. Flowers the square has none, and its leafy display is limited to the foliage of the few Planes placed along three sides, the stems of which have a double casing of protective wood and iron. What leaves they have droop on branches high upon the lanky stems, and the removal of these trees would be no great loss. Doubtless the spot is ill adapted for horticulture, but might not something be done with the ponds? It would be no difficult matter to convert one of them into the semblance of a natural pond or lake by planting such species as the Flowering Rush (*Butomus umbellatus*), the great Reed Mace (*Typha latifolia*), the Arrowhead (*Sagittaria sagittifolia*), and others that could easily be selected as likely to flourish. Almost as bold in aspect as Trafalgar Square is the open space or esplanade to the west of the Horse Guards, which serves occasionally for military evolutions, undoubtedly the old tiltyard attached to Whitehall Palace, but this is relieved in a measure by the trees and shrubs of the adjacent enclosure. Not one in a hundred, perhaps, of those who cross this space skirt the side towards the Admiralty, where we come upon sundry plots of garden ground and Ivy-shaded walls, positively upon one line of wall covered with Vines. I do not suppose they would fruit here as once they did about Westminster, for the yet extant Vine Street was so named from a vineyard or Vine garden belonging to the Palace, and which is referred to in a warrant (temp. Charles II.) as if then under cultivation. Well sheltered from the north and east winds, shrubs and flowers of the common kinds flourish here. There were some large bushes of the ornamental Carrant, and fine Thujas, also we observed a species not usual in London gardens, the Bladder Senna (*Colutea arborescens*), and beside it the Laburnum also displaying its seed pods, seldom plentiful in a town atmosphere, which is quite as well, considering their very poisonous character. Another Cytisus, the bonnie Broom (*C. scoparius*) would have been an appropriate plant on ground of such historic fame as the precincts of Whitehall, and I believe this graceful plant might prove a desirable addition to many London gardens where it is now lacking.

Across Parliament Street, with the Thames once washing its edge, but now separated by the Embankment, was the Priory Garden—or private garden—of Whitehall, a space of between three or four acres. During the reign of Charles II., when gossiping Pepys was one of its visitors, the ground was laid out formally in sixteen square compartments, each having a central statue, and dispersed amongst the grass plots were some curious sundials. A high wall shut it off from the public gaze, and along one side was a row of tall trees that have long disappeared, Oaks or Elms perhaps. The houses of Whitehall Gardens and Richmond Terrace occupy part of the ground, part being still open and dotted over with flower beds, while on some portions of it are banks of evergreens. Of the trees interspersed, the principal are some notably large Poplars (*Populus nigra*) that must have made their growth under favourable conditions, also a few Planes and Limes.

Fronting New Palace Yard, and almost under the shadow of the venerable Abbey, is a small open space crossed by foot-paths, and within a low railing are sundry flower beds set in turf, and which during the summer are filled with a variety of flowers, Pelargoniums preponderating. The arrangement is geometrical, but much taste cannot be shown, as most of the beds are four-sided. The plan has been adopted of labelling the plants; not a bad one in a public garden, if the labels are so placed that they can be read.—J. R. S. C.

RENOVATING OLD STANDARD PEAR TREES.

OLD Pear trees may be transformed into young and fruitful trees by simply cutting the old fruiting branches to within 3 or 4 feet from the main stem. Some three or four years since I operated on some old trees of which the fruit had become distorted and undersized, they have now healthy young bearing wood full of fruit spurs. It is often a question with the owner of old trees whether to cut them down or from old associations to leave them standing. By this very simple treatment he can transform them into young trees. The old bearing wood appears to become too constricted and dense for the sap to flow freely. I have found that spur-pruned Vines, after seven or eight years, produce small bunches which gradually lessen. The same treatment applied to them furnishes young and vigorous canes.—T. FRANCIS RIVERS.



MR. SHIRLEY HIBBERD has in the press a volume of miscellanies addressed in the first instance to young people, but he assures us that people who are losing their teeth are allowed to read them, and they may hope thereby to renew their youth. The volume is to be entitled "The Golden Gate with Silver Steps."

— In reference to the note of "F. J.," on page 403, we are informed by the Hon. and Rev. J. T. Boscawen that he has gathered seed of CHIMONANTHUS FRAGRANS ripened in a garden in Kent from which he has raised plants. "An Old Subscriber," writing from Hampshire, says he has a plant of *Chimonanthus fragrans* against a wall occupying a space of 100 square feet, which in warm summers invariably produces ripe fertile seeds.

— "SCIENTIA" says—"I believe it is the natural habit of that most beautiful of Lady Slippers, *CYPRIPEDIUM SPICERIANUM*, to produce annually two flowers on one stem. The plants I possess were only small, imported a few years ago, and the first time they flowered only one flower was produced on each stem, but every season since two flowers have expanded on each stem. It grows luxuriantly under stove treatment, and requires abundance of water. It is also important that the compost be open, using plenty of charcoal in lumps, renewing it annually. The pot or pan in which it is grown should also be abundantly drained, and the plant rested in a temperature of 50° to 55° for a few weeks, say while in bloom. It must not be kept dry at its roots during this period, but water should not be given it. The compost used here is living sphagnum moss and peat fibre in equal proportions, with plenty of charcoal and crocks intermixed."

— MR. C. ORCHARD, Coombe Warren, Kingston-on-Thames, sends us a handsome bloom of *CHRYSANTHEMUM M. HENRI JACOTOT*, and remarks, "It is naturally rather an early-flowering variety, and the very early buds produce blooms with shorter petals and less bright in colour than the later flowers, having much more yellowish bronze in the centre, which is not so effective as the later flowers. The buds should be taken about the 16th to the 20th of August if possible. It is a bad variety to produce cuttings, but it is a good grower and certain in producing flowering buds. It was shown very fine this year by Mr. Lowry at South Kensington and the Aquarium."

— MESSRS. LUCOMBE, PINCE & Co. have a good display of *CHRYSANTHEMUMS* AT THE EXETER NURSERY this season, this year's display eclipsing any previous one in the quality of blooms and improved varieties. About 500 specimens are on view, and these form a beautifully coloured floral bank, the front row being composed principally of dwarf Pompons, and the unbroken mass of flowers and foliage rising gradually to 7 and 8 feet in the back row. All the leading varieties are represented.

— "THE ORCHID ALBUM for November contains four handsome plates of very distinct Orchids, the general execution, together with type and paper, continuing of the same high quality as hitherto. The plates represent the following:—*PHALÆNOPSIS SANDERIANA*, a form with large beautifully formed flowers of the *P. amabilis* style, the two petals and the upper sepal of a soft blush or pale pink tint, the lower sepals and lip white, the latter dotted with crimson in the centre. It also resembles *P. amabilis* in growth, but is usually regarded as a natural cross between *P. Schilleriana* and *P. amabilis*. It was found by one of Messrs. Sander and Co.'s collectors on an island in the Eastern Archipelago, and was recently introduced by the firm named.

— "A VERY pretty and distinct Orchid with the habit of a *Bletia* is *GOVENIA DELICIOSA*," says Mr. B. S. Williams, and he further observes, "This genus belongs to the terrestrial section of Orchids, a group which is too generally neglected by cultivators." He also considers that the chief cause of failure in cultivating such plants is "over-watering" them when dormant. The one figured is a Mexican species producing a slight erect stem with two large ovate leaves and a long terminal raceme with the flowers clustered near the apex. The sepals and petals are white, the lip being curiously curved and covered with round purple dots.

— THE deciduous *Calanthes* include some of the most useful Orchids in cultivation, the vestita varieties being particularly beautiful. A grand variety is that figured in plate 211, *CALANTHE VESTITA OCLATA GIGANTEA*, which has remarkably large flowers, pure white, with a rich orange red blotch at the base of the lip. It possesses "a remarkably showy character, and, like *C. Sanderiana*, *C. Williamsi*, and *C. Turneri*, produces its blossoms after *C. vestita* and *C. Veitchi* are over. The foliage of the variety, moreover, remains green during the time of its flowering."

— A SPLENDIDLY coloured variety is *CATTLEYA GUTTATA WILLIAMSIANA*, which was obtained from Messrs. W. Thomson & Son's nursery at Clovenfords, the whole of the stock, except a plant at Downside, Leatherhead, being now in the possession of Mr. B. S. Williams. The lip is of an intensely rich crimson purple hue, the sepals and petals being of a purplish rosy tint, the petals much darker than the sepals, on which there are numerous spots of crimson. The flowers are borne in a strong head, terminating the growths.

— WE have received some PACKETS OF GISHURSTINE from the Belmont Works of Price's Patent Candle Company, reminding us of coming winter and the necessity for providing against wet feet. Ever since this useful preparation has been introduced we have used it, and found it of the greatest comfort in protecting boots from the effects of wet. But there is another use we applied some of it to, which the proprietors of it may not be aware of. We added about one-third of petroleum oil, and in this mixture we rubbed up some red lead, forming a paste of the consistency of cream. This we rubbed on wooden labels before writing on them with Wolff's pencil, and we have found the writing last as long as the label. It soaks into the wood and enables the pencil to make an indelible stain.

— "LANCASTRIAN" observes—"EPACRIS MULTIFLORA is not generally known or very plentiful, for very rarely is this variety met with in private gardens, neither is it generally cultivated by nurserymen. This is to be regretted, for it is doubtless the best late-flowering variety in cultivation. It is perhaps not so profuse a bloomer as many varieties, but if its strong upright growths are well ripened it will not fail to give satisfaction in this respect. Its flowers are bright crimson and white, which render it one of the most showy varieties when in bloom. It is a strong grower, with rather large leaves, and therefore totally distinct from all varieties known to me. Its great value is its late flowering, and those who require good flowering plants for cutting or for decoration in pots should procure this grand variety. It is necessary after flowering to push it forward, or it will not complete its growth sufficiently early to ripen the wood, and if this is not accomplished it will fail to flower satisfactorily. It is also necessary to cut its growths close back after flowering, for if a few inches are annually left it will not be long before it is bare at its base."

— HORTICULTURAL CLUB.—The monthly dinner and conversation took place on Tuesday, the 10th inst., at the Club room, 1, Henrietta Street, Covent Garden, when there was a goodly attendance of members, including the Hon. and Rev. J. T. Boscawen, Rev. F. H. Gall, Messrs. Wheatstone, Loder, Wood, Ingram, Collings, Balderson, &c. The

subject for discussion was Grape-growing, opened by the latter gentleman, who detailed his method of cultivating ten varieties of Grapes in one house, and showed its success by exhibiting good, well-finished bunches of Mrs. Pince, Madresfield Court, Muscat of Alexandria, Foster's Seedling, Duchess of Buccleuch, Golden Champion, Black Hamburgh, &c., which were (especially Mrs. Pince) pronounced to be excellent. The Secretary then gave some account of the Castle Coch vineyards of the Marquis of Bute, near Cardiff, and by the courtesy of Mr. Pettigrew, his lordship's able gardener, the members were enabled to taste the produce of the vineyard, a bottle of the vintage of 1881 having been sent by him for that purpose. It was pronounced excellent, and bore a likeness to a good still champagne. The discussion was continued by Mr. Boscawen and others, and the thanks of the members were given to Mr. Balderson for his interesting paper, and also to Mr. Pettigrew for his courtesy. It was announced that the discussion for the next meeting would be opened by Dr. Masters.

— WE learn that CAPTAIN E. S. BAX (late 84th Regiment) has been appointed Assistant Secretary to the Royal Horticultural Society, in place of Mr. Henry R. Newport.

— WHEN difficulty is experienced in keeping GRASS GREEN UNDER TREES IN OPEN WOODS, particularly Pine woods where shade is continuous the year round, the "Journal of Forestry" recommends sowing a little nitrate of soda occasionally throughout the growing season when the weather is moist. This will bring a fine crop of verdure pleasing to the eye and agreeable to cattle.

— AN American contemporary states that during the past season there were put up 48,508,248 cans of TOMATOES in the United States, being one-third less than the pack of 1883, the decrease in acreage being heaviest in the eastern States. It is said that a farmer in Salem County, New Jersey, last season raised 83 tons of Tomatoes on 6 acres of land. The crop was sold in the canning establishment for 7 dollars (nearly 30s.) per ton.

EARLY TULIPS.

THESE merit special attention, as they are easily forced into flower, and are more showy than any bulb which blooms in winter. Early Roman and other Hyacinths are valuable, particularly on account of their delicate colours and delightful fragrance, but for conspicuous show the Tulips have merits all their own, and wherever a bright display of flowers is desired during the duldest and most cheerless winter weather the early-blooming varieties should be grown. They are easily managed, and bloom with great certainty.

The single-flowered sorts are the best for early forcing. They grow and expand more freely than the double sorts, and in my opinion they are more graceful, especially when in the bud and not fully expanded. Our best early varieties are Canary Bird, clear rich yellow; Bride of Haarlem, white striped with crimson; Pottebakker in three colours, scarlet, white, and yellow; Le Matelas, white suffused with bright rose, very fine, but not the cheapest. All the Duc Van Thol varieties are excellent for early forcing. They are red, crimson, gold, scarlet, rose, white, and yellow in colour. The common scarlet, which is exceedingly showy, may be bought at 4s. per 100 bulbs, but the white is very much dearer. We are very fond of the scarlet, as it is so very showy for floral decorations at Christmas.

I prefer the single flowers for early work, but some may like the double ones best, and the best of these are the double Duc Van Thol, La Précoce; the two Tournesols, red and yellow; Imperator Rubrorum, and Murillo, which is pale rose and white. When the sole aim of growing them is to cut them, the bulbs may be planted in batches in shallow pans or boxes, but where they are wanted for decoration in pots these should be used of various sizes. We sometimes pot the bulbs singly in 3-inch pots, others are placed in threes in 4-inch pots, and more in 5-inch and 6-inch pots, but no size larger than the last is used, and five or six bulbs in these make very pretty groups. The earliest may be potted in October, or as soon in November as is practicable. The soil used in potting should consist of three parts light loam, the other half-decayed manure and a dash of sand. A little drainage must be placed at the bottom of each of the pots. They may be filled to the rim loosely with soil, then insert the bulbs, and finally press the soil down firmly about them. When potting is finished the top of the bulbs should just be visible. When the soil is moderately moist no water need be applied, but they should be plunged at once under ashes, sawdust, cocoa-nut fibre refuse, or sand to the depth of 6 inches or more. Their position then may either be in a cool shed in a frame under a wall or out in the open. They must remain plunged until the growths are about 2 inches in height, and to attain this they must stay under the covering for three or four weeks, and when taken out they should be introduced to a temperature of 65° or more. There they will soon show the flower buds, and bulbs potted the first week in November will be in bloom by Christmas and the new year. The whole may be potted at once, plunged together and taken out on the same day, if the growths of the different varieties indicate that they are ready for

this. Successional flowers may be produced by placing a quantity of them in cool house or frame, and transferring a number now and again to the warmer quarters. The Duc Van Thols should be largely grown for Christmas decorations.—J. MUIR.

CANKER IN FRUIT TREES.

IN his note under this heading, Mr. Hiam says (page 404) that he has thought about it and written about it until he is tired. I, too, have thought about it for over four years, two years of which I spent in a situation where every Apple tree on the place was more or less cankered and almost barren, so that the fruit room was filled annually with bought fruit. Last year we were able to fill it with "home-grown," while this year we could sell some surplus. To be brief, my opinion, and it is a firm one, is this—Gardeners, as a rule, spoil their fruit trees by too much kindness in two ways: first, by digging and manuring annually; secondly, by a too frequent use of the knife, commonly called pruning, but which in many cases is simply cutting into some shape agreeable to the eye. This has more to do with canker than many will admit.

The remedies used here were not in any way elaborate. Lifting and root-pruning were adopted in most cases, in others all cankered wood was cut out carefully, the latter and syringing with petroleum mixture being purely out of respect to Mr. Hiam's insect theory. Might I be allowed to "blow my horn" I would say that if given healthy trees to start with (healthy trees should have stock and scion of an equal growth without rupture or blister) a moderately firm soil with good drainage, the roots being kept to the surface by mulching, and I venture to predict that canker would be a thing of the past.—C. L. RITCHIE, *Redhills House, Belturbet, Cavan, Ireland.*

CHRYSANTHEMUMS LA PURETÉ AND MDLLE. LACROIX.

WHILE perusing the interesting series of articles entitled "Amongst the Chrysanthemums" in the *Journal of Horticulture* for the 5th of November I was no doubt, in common with many other readers, struck with the curious coincidence concerning Mdle. Lacroix and La Pureté.

The former, or more accurately speaking a variety bearing that name, is in my collection, and a few weeks ago I was impressed very forcibly with the great resemblance that Mr. Owen's variety La Pureté bore to it.

This was at a recent floral committee meeting of the N.C.S., and the decision they arrived at that the two were identical did not surprise me when reported in a contemporary journal.

It now appears that there is abundant evidence that the Chysanthemums bearing the two names are everywhere proving to be the same thing, although both names have been recorded on the certificates granted to the flower. This fortunately is not of so frequent occurrence as might be the case, and there is probably no one flower except that with which I am now dealing that has been certificated so many times under two different names.

Last year we had almost a parallel instance in the case of Jeanne d'Arc and Mdle. Madeleine Tezier, the former of which, however, had happily received a certificate aright, although it was also discovered under the latter name. But these two varieties were subsequently found to be distinct, and so I venture to believe will those which properly bear the names of La Pureté and Mdle. Lacroix.

As in cultivation in this country, there is, as previously said, but little doubt that one flower passes under two names, and the question to be decided is, What is the proper name to be applied to it?

These varieties, La Pureté and Mdle. Lacroix, were raised by a grower whose name is not familiar to any great extent in this country, and were distributed by him as far back as 1882, if not two years before. The descriptions given in his list of novelties suggest the idea of two different coloured flowers, and it can hardly be imagined that any man would send out in the same set one flower under two names and with different descriptions. I do not of course say such is an impossibility, but still, prudence would certainly not commend a proceeding of this kind.

As far as I know few English nurserymen deal direct with the grower referred to, and in this fact lies the whole of the mystery, according to my way of thinking. Had La Pureté and Mdle. Lacroix been obtained in the first instance from the fountain head the first would, there is every reason to assume, have proved to be the white variety we now have, and the other would have been a flower of a rosy hue.

My belief is merely founded upon catalogue information, and is naturally put forward with the hesitation that such meagre information supplies, but in substantiation of this one of my correspondents in France, a large and able grower, gives the two as distinct varieties. Some readers may be interested in having the original description, which I append hereto.

"LA PURETÉ.—Japonaise; fleur énorme à longs pétales diversés, tuyautés d'une blancheur incomparable unique dans les Japonaises (extra belle).

"MDLLE. LACROIX.—Japonaise; fleur de toute grandeur, d'un blanc rosé, passant au blanc pur (superbe)."—C. HARMAN PAYNE.

GRAPES—JOHN DOWNIE v. ALNWICK SEEDLING.

AS Mr. Dunn and Mr. Downie have apparently deemed it unnecessary to give any reply to my question upon the above Grapes, therefore it is with some reluctance that I again revert to the subject. In the first place I wish it to be clearly understood that I impute no unworthy motive to either gentleman, everyone who, like myself, have the pleasure of their

personal acquaintance will, I am sure, agree with me in saying their integrity is beyond all question. But the fact of Mr. Dunn giving a high testimonial to a Grape said to be new, leads Grape-growers like myself to believe that by possessing such a one we should be adding to our collection a sterling novelty—a valuable late-keeping variety. It has now been proved by the Fruit Committee of the Royal Horticultural Society, Mr. Temple, and myself that this sterling novelty and invaluable late-keeping sort is none other than our old friend Alnwick Seedling under a new name. To be fair Mr. Downie should answer your important question, "Where and by whom the Grape John Downie was raised" (page 310). I think some explanation is also due to those who have invested their guineas in Vines of the same. Mr. Temple has been good enough to say he discovered last year that Alnwick Seedling and John Downie are identical, and drew Mr. Downie's attention to the fact, who, in reply, stated that he believed a mistake had occurred in sending out this Vine, and that the real John Downie was more like Gros Colman than Alnwick Seedling.

It appears odd that such an industrious writer as Mr. Temple should allow a whole twelve months to pass without mentioning the discovery. I would now like to know what has become of the John Downie that was said to be like Gros Colman, and if my memory serves me right it was also said to have a strong Muscat flavour; the variety supplied to me is clearly devoid of those qualities. Will Mr. Downie enlighten his customers, or must they conclude the description has been an exaggeration?—J. MCINDOE.

STRAY NOTES.

THE style of grouping now becoming general in houses, and especially in greenhouses and conservatories, is a decided advance on the old mixture system, for instead of seeing half a dozen or more plants of a kind spread over a whole stage, individually not striking enough to attract attention, they are collected together in a group not only showing to the best advantage themselves, but the groups may be more readily blended one with another. Groups of bedding Pelargoniums showing plenty of flowers are just now extremely attractive, the charming contrast of the large deep scarlet trusses, backed and intermingled with stray flowers of Chrysanthemum is really very fine, and well worth carrying out on a large scale. Rhodichiton volubile is also very attractive just now, hanging in graceful festoons from the roof, suggesting its use also on a more comprehensive scale, not only in the conservatory, but as it flowers well during the summer months in the open on south exposures, it will be found very useful for temporary rustic work.

Few pillar plants, except the Cestruums, can vie for present beauty at least with Begonia fuchsioides trained up a pillar, and although it has flowered all the year, it is just now as attractive, and certainly far more welcome than it was months ago. Coronilla corymbosa var. glauca, though in all probability hardy against a wall in the open, makes a first-rate pot plant, supplying a deep golden yellow shade not quite given by any of the Chrysanthemums we have yet seen. It seems to flower freely in pots, and may be treated along with the Azaleas, &c., during summer. Salvia Bethellii, which differs little, if any, from the S. involucrata, gives a rich rosy purple, certainly not surpassed at present, the curious hairy hoods of the flowers rendering them quite conspicuous among such species as S. Heeri, S. cacaliifolia, &c. A group of Bouvardias looks very well also. A good double white is Alfred Neuner, Vreelandi being amongst the best of the single whites, and perhaps the easiest to manage, while Dazzler, for a scarlet, can hardly be surpassed. A mixture of the commoner pink-tinted sorts, of which there are a good many, also looks well.

Salvia Pitcheri in groups is really fine, varying with two or three distinct tints, from pale to a very rich deep blue. It seems quite distinct from S. angustifolia in having larger flowers and broader leaves. Kennedy's Marryatæ, as a rafter plant for roofs, cannot be surpassed. It is just now literally covered with bunches of large Pea-like intensely scarlet flowers, and well clothed with trifoliate woolly leaves, with the margins beautifully crisped or undulated, giving it a very interesting appearance.—M.

CHRYSANTHEMUM "NOTES" AND CHRYSANTHEMUMS FOR DECORATION.

I AM sorry if not true Mr. Pithers should speak disparagingly of the judging at the Dublin Chrysanthemum Show of last year; and if true the matter is all the more to be regretted. I need not tell Mr. Pithers Dublin contains some as good judges, and I believe I may add as good growers as there are in the world, and the fact that through mistake or ignorance a cut bloom gets wrongly labelled is no reason whatever to twice repeat—last year and again this—the same strictures. Those who try to maintain Chrysanthemum or other flower shows in Dublin, or other towns in Ireland, to my mind—there being no comparison between the difficulties to be contended with in the two countries—should not be looked on with a censorious eye, but have their exertions handsomely acknowledged. A few local gentlemen here are getting up a Chrysanthemum Show this year for the 27th inst., and so far have met with the warmest encouragement, though the times are still in some respects "out of joint." Probably I shall be your reporter on the occasion, and I may as well tell you beforehand, I will not look too nicely—even if I were competent—whether some of my gardening friends made a mistake in labelling a cut bloom, or whether my friend Mr. Burridge, F.L.S. (who has been invited to come down as judge), gave a point more or less. Personally, I only grow Chrysanthemums for decoration and for my own amusement; a large

portion of them, at least one thousand, being trained against a southern wall, and capable of being protected should severe frost set in. As yet not even Dahlias have been injured with me. If such weather could be guaranteed every year, such a position and equal facilities, of course no one would bother growing Chrysanthemums for cutting in pots. I have larger blooms of the Christine and Mrs. George Rundle family, Empress of India, Refulgence, Cassandra, Lady Slade, Fingal, Prince of Wales, Golden Queen of England (at least 6 inches across), Dr. Sharp, and Emperor of China and so on, not to mention Japanese, Pompons, or Hybrid Pompons, thus planted out than those I have in pots. Some experts have seen and admired their unexpected size and substance, but especially the colours. As a matter of fact, the colours never come out as well indoors. Then whenever a lady visitor calls, I can always supply a large bouquet of blooms, and these outdoor-grown blooms last at least a week longer in vases than pot-grown forced blooms indoors, besides being much brighter. This, of course, may not apply to the same extent, in large manufacturing towns so well as in the country; but as a matter of fact, every country gentleman's residence, every villa and suburban garden, especially those with vacant spare southern walls, should have them bright and gorgeous during this dark and gloomy month.—W. J. MURPHY, Clonmel.

MOWING MACHINES.

How often in many gardens do we find, after the mowing season is over, the machines put away and left until the spring before any attempt is made to clean them; yet, what time is more convenient than the autumn or early winter months for the operation? Should the grass be wet the last time the machine is used the blades and bottom cutting plate would immediately become rusted. This, if left for any length of time, will act seriously on the most important part of the implement, and be sure to affect its working and lasting capabilities. It is a good plan to rub a little oil or grease over these parts before the machine is put aside when last used, as this would prevent rust. We choose the first wet day convenient, and take to pieces and clean every part of the machine thoroughly. An old table-knife and a spoke brush we find most useful for the purpose. The roller adjustments are generally the most difficult parts to dissect, but a man used to the machine and who takes an interest in it would soon surmount the difficulty. Twice a year is not too often to go through the process of cleaning if time could be found, but this is an exception, I think, rather than the rule in most places. The early winter months are preferred to the spring, as at this time the routine work is not of such importance as at the latter time, and it sometimes happens when so left that it is never done at all.—S. B.

IN THE VALLEY OF THE WILBERFORCE.

(Continued from page 409.)

FRIDAY morning broke brightly, and we made sure of a good day's collection in Happy Valley and Rebel Creek, which flows into the Moa River a short distance above the camp. Senecio Lyalli with pure white flowers and dark green foliage was growing near the water. It was evident that this valley has been filled with ice in winter, a mass remaining unmelted, with water running through a tunnel beneath. This valley bears due south, and the ice had but recently melted; so that vegetation was springing up. At one place in a bed of broken rock and shingle there was a grand Alpine garden. Both the yellow and white Mountain Lilies by the thousand were in full bloom, interspersed with the white Marigold (Senecio Lyalli); Ligusticum prolixa, with its highly ornamental foliage, was dotted about among the Lilies, and even the little Montias were represented in this natural garden. The most graphic description would fail to give an adequate idea of the purity and beauty of these Alpine flowers when seen in their natural habitat in broken ground among rocks and boulders, piled up in every conceivable position as the glaciers and floods have left them. Only one variety of Aciphylla grew in this cold valley which the sun never enters. Everything was frozen; indeed it was dangerous work, as we could get very little grip with our feet on the shingle slips, which had become transformed into ice slides. On a cliff we saw a fine patch of Edelweiss, far out of reach, also large plants of Ranunculus Godleyanus just coming into bloom. Polystichum cystostegium, the Alpine Fern, adds much to the beauty of the scenery, its green fronds contrasting with the rocks. On a bank of shingle and rocks were small patches of the pretty annual Euphrasia antarctica; Raoulia were represented by several varieties, australis and subcericea being the most prevalent. Mosses and Lichens grew on every rock, but few were in fruit. Of Acenas there were several species, adscendens and microphylla occurred very often in the Moa river bed. Coriaria thymifolia, the little Tutu, was plentiful, looking very much like the garden Thyme. Veronica linifolia with its delicate pink flowers grew in the river bed, also V. Bidwillii, which was in seed.

Arrived in camp at six o'clock, and shortly afterwards a nor'-wester set in, the wind blowing down the gully with great force. The hot wind of the plains is very different in the ranges; the rain came down in torrents, and by six o'clock next morning we could hear the boulders crashing down the creek. Looking out of the door of the whare on Saturday morning we saw what one night's rain from the nor'-west can do. The North Creek was full from bank to bank, the waves rolling up 2 or 3 feet high. It rained heavily nearly all Saturday, but cleared up on Sunday afternoon, and the rivers fell almost as quickly as they had risen.

In the bush we saw nine distinct species of Ferns. The Filmy Ferns were represented by *Hymenophyllum Malinzi*, one of the rarest of the family, which grew on dead Cedars with a north aspect, *H. multifidum* carpeted the ground with its bright green fronds, *H. polyanthos* grew on the trees, but was rather scarce, *H. villosum* was found on bare rocks in very exposed situations, *H. scabrum*, with its long drooping fronds, in damp places. *Asplenium Colensoi* (the Grove Fern) was prevalent, growing very large in the bush. *Polystichum vestitum* was very common; a forked variety of it was found by Mr. Brown. The Carpet Fern, *Asplenium Richardi*, and *A. flabellifolium*, were scarce. *Cystopteris novae-zealandiae*, which is one of the few deciduous Ferns, was very plentiful, its pale green fronds making it easily distinguished. Of *Lomarias* we saw *lanceolata*, *alpina*, and *discolor*. The little *Polypodium australe* grew on dead trees. *Goniopteris pennigerum* was very scarce. Of *Lycopodiums* *Billardieri* was growing in hollows of the Pitch Pine, and *L. Selago* covered patches on the ground 2 or 3 yards across, looking like a bed of seedling Conifers.

Mr. Brown, who devoted himself to the collection of Mosses, found several new species of *Andreaea*, *Weissia*, *Tortula*, *Orthotrichum*, *Eremodon*, and a *Polytrichum* with flat ovate capsules. *Dicranum clathratum*, a rather scarce variety, was abundant in this district. Of *Hepaticas* there were *Gottschia ciliata*, *Madotheca Stangeria*, and *Trichoclea tomentosa*.

Monday morning was fine, the sun shining on the distant peaks, so we said good-bye to our friends who had treated us so kindly at the camp. Mr. Lander gave us valuable information as to the habitats of the plants, and Mr. Slater and Mr. McClure, of the survey staff, were equally ready to be of service to the first party of botanists who had visited these remote ranges. The cook lent us his horse to carry our swags to the lower camp, and we were put across the main branch of the Wilberforce by one of Mr. Lander's men. It was 4 P.M. when we got over the river, but we managed to reach Fisher's whare, and remained there all night. Made a start at daybreak, and had some difficulty in crossing the Harper, as the ford had been washed away by the heavy flood; we had to go a long way up stream before we found a safe crossing place. Having crossed at a fork, we made good progress to Lake Selfe, where, during a short halt, we found a terrestrial Orchid, which with the Water Quillwort, we added to our collection. Reached the head of Lake Coleridge at dusk. One of the miners who had a horse came up with us near Lake Lyndon and carried our heavy swags to the hotel at the foot of Porter's Pass, where we arrived at 7 P.M. Next day we were fortunate in getting a lift in a dray going to Springfield, and were glad when we found ourselves in the train for Christchurch, where we arrived at 7.40 thoroughly knocked up, but satisfied with the result of our ten-days trip to the district of the quartz reefs of Canterbury.

SNOWDROPS.

THESE would appear to be unusually early this year, as quantities were to be seen the last week in October peeping through the soil. Large quantities are planted round the borders of the shrubbery here; where overhanging branches shelter them they are much in advance of the others less favoured. No doubt the long spell of dry weather this summer ripened the bulbs early, and this, coupled with a mild autumn and frequent rains, would favour an early growth; consequently, early flowering may be expected should the winter not be too severe. They are highly esteemed here when in bloom for house decoration in pots, and for this purpose clumps are taken up from the borders and reduced when necessary to a size sufficient to fill a 6-inch pot. When the buds are formed is the time we commence taking up plants for pots; these are placed in a warm greenhouse and kept well watered; some fresh green moss is put around them to serve the double purpose of giving a neat appearance and to keep the soil regularly moist. As soon as the flowers begin fading they are planted in the borders from whence they were taken and allowed to ripen naturally, others being lifted to fill their places. By these means only sufficient are potted for the use of the house, as limited glass space necessitates as little overcrowding as possible.—S. B.

HYDRANGEAS IN THE OPEN AIR.

I HAVE a very high opinion of these, which is no doubt produced by the specimens we have here. They are all over the pleasure grounds. Many are round bushy plants 6 feet high and 10 feet through. Sometimes I have counted 700 heads of bloom on one plant, and from 300 to 500 is about the average. In the lower part of the grounds the flowers are a bright pink colour, but farther up they are of a bright blue. Some prefer the first, others the latter. They come into flower about the beginning of August, and remain fresh and effective until frost cuts them off, which is never before December. They are very striking the whole of the time they are in flower, and they make as good a display in autumn as the *Rhododendrons* do in spring. The heads of bloom are hardly so large this season as I have seen them. I think the excessive drought we had in July and August hindered their development. In some seasons, when the blooms were at their largest, the whole plant has been such a mass of foliage that it was almost impossible to catch a glimpse of the green foliage anywhere, and I think they are prettier with the heads of bloom smaller and the foliage showing through between them than they were when one mass of colour.

They are very handsome, and might be planted out more often than we see them. Many consider they are tender and would not bear the

winter in all parts, but this is a mistake. I do not mean to say that they will withstand any amount of frost, but they will bear a low temperature, as those here have been exposed to a temperature 18° below freezing point for a considerable period, and they were neither killed nor checked. We generally allow the flower heads to remain on all winter, and these afford the stems much protection. I feel sure if those of your readers who have plants in pots would not coddle them during the winter, but keep them outside and harden them well, they might safely be planted out in almost any part of the country in spring. They would not grow very luxuriantly in bleak exposed positions, but in front gardens in town or country and sheltered parts of pleasure grounds and woodlands they would soon become the wonder of all who saw them. A rich soil suits them best at all times, and as the plants become large and have drawn a large amount of nourishment from the soil, liberal top-dressings should be put round them every autumn. In Scotland and the north of England I have often seen these plants matted for the winter, but we never practise anything of the kind here, and probably much harm is done by giving protection before it is wanted or in cases where it could be dispensed with altogether.—J. MUIR, *Margam, S. Wales.*

PLANT-GROUPING FOR EFFECT.

IN the paper read before the Dundee Horticultural Society by Mr. Williamson, appearing in the *Journal* September 17th (page 256), on "Tables of Plants," is very interesting and very ably treated. I may say the few remarks I now venture to make were penned the following week, but withheld in the hope that someone more able than myself might ventilate the subject.

Nothing, perhaps, has done more to enlighten gardeners than the styles of arrangements in grouping, and doubtless Mr. Wills is entitled to some gratitude, not only from gardeners, but the furnishing and plant trade generally. Mr. Williamson dwells at some length upon the wording of schedules, and certainly much pains is needed in order to convey a correct idea of what is to be the judging line; but, as careful as committees may be on this point, there is certain to be a great diversity of style and tastes displayed, because of the different plants at disposal, and a style of arrangement must be adopted to suit the plants. Therefore, in order to exhibit really high-class groups to harmonise in all points, considerable forethought is required. As in hedging out, the real object must be pre-arranged; each plant must be as near as possible the required size; and, again, each plant must be a specimen in itself. When this is done not many unsightly and almost useless plants will be retained. Such high-class groups certainly appear to be the most interesting feature of good shows, and when such interest is carried home the benefit must be general, and when groups are arranged at home prior to any particular show or shows young men derive considerable benefit and become more interested in the well-being of the plants. There is one very apparent benefit, that requiring a great number of Ferns in various sizes. These are also useful for cutting purposes, as thickly grown plants are not so light or effective, and a few fronds are no loss; and, again, when Ferns are thinly placed as a complete groundwork upon the stages, in a conservatory or greenhouse, what a pleasing effect is produced by having other well-grown specimens, large or small, also thinly dispersed, springing up in various heights.

Plants must be specially prepared; and, further, certain plants are almost indispensable for the purpose, having a goodly supply of Maiden-hair Ferns, *A. gracillimum*, *cuneatum*, and others in smaller quantities; also *Panicum variegatum*, *Selaginella caesia*, *arborescens*, *Kraussiana aurea*, and several equally graceful, and especially *Lygodium scandens*.

The next important point is a centre plant, and here is a point worthy of some discussion. Many use *Cocos Weddelliana*, but, rightly or wrongly, I have never admired this as a centre, often because many of the same have also been used in other parts of the group. *Dracaena Veitchii* is also, if employed, and if a well-grown plant, has fine effect. The best Palm for most forms of groups, in my opinion, is *Phoenix rupicola*. Centres must of course vary a little to suit the surrounding plants.

Crotons may be regarded as of next importance, as without a fair selection of well-grown *Crotons* a group can only be of average quality. This means that a gardener who has not a stove has no chance, and the only way would seem to be to offer prizes for groups of plants arranged for effect without stove plants, meaning, of course, such plants only that require stove all the year round. *Crotons* are so numerous in point of variety and colour, and I may also add reasonable in price, there is nothing to prevent anyone having a good collection, the drooping and narrow-leaved varieties being generally most effective, though some of the stronger growers, when well grown and coloured, are very useful. *C. volutus* at its best, on single stem, is one that is much admired; and, with regard to single stems, these are by far the best in nearly all varieties for grouping purposes. Nothing can excel in appearance a *Croton* 3 feet high, and yet retaining all its foliage; and to do this requires no small amount of skill. Regarding compost, has anyone tried an equal mixture charcoal, half-inch bones, and oyster shells crushed? We have, and shall continue it.

Of *Dracaenas*, old terminalis and *Cooperii* are among the best, on account of their free growth and rich colour, though many of the newer varieties are extremely effective when at their best. *Amabilis*, especially towards the back of some groups, is very telling. Another variegated and indispensable plant is *Eulalia japonica*, which is easily managed in all sizes. With a fair number of these it is almost impossible to have a group too stiff or too green. Then may follow Palms of various heights, such as *Cocos*, *Geonoma*, *Calamus asperimus*, and other choice forms.

To look well they should always be raised above the other plants, especially towards the centre or back. *Grevillea rohnsta* is another most useful plant. *Aralia Veitchii* and other choice varieties are most effective in any size and in any part of the group. Small plants towards the front make a good relief to Palms. *Acalypha musaica* from 1 to 3 feet high, on single stems, grown with Crotons, are very useful; but these must by no means become dry, or the leaves blister and fall. *Acacia affinis* and others of similar growth may be found a place, especially in large groups. *Pandanus Veitchii*, well coloured, in, say, 4 to 6-inch pots, give a great relief. Numerous other foliage plants may be used with advantage, yet those I have mentioned are hardly to be dispensed with in good competition. I have not mentioned *Caladiums* or *Coleuses*, each of which are telling, and *C. argyrites* in quantity renders a fine finish in the front line.—LATHYRUS.

(To be continued.)

JUDGES AND THEIR WORK.

I HAVE read with regret the letter of your correspondent, "J. L. B." in your issue of the 22nd October last upon the above subject, which it is quite patent refers to this town. I have been connected for many years with floral societies in Leicester. The remarks of "J. L. B." are absolutely untrue, and even if correct are a direct insult to the gentlemen referred to. "J. L. B." says, "There are but few examples worth going to see, as many of the best exhibitors do not show now." My experience is that the exhibitors of both vegetables and flowers at the shows in Leicester are equal and in many cases superior to other shows, and that the best exhibitors have not decreased, which has been proved only this week by both the quantity and excellence of the exhibits and the large attendance of the public at our annual Chrysanthemum Show.

The gentlemen referred to in "J. L. B.'s" letter are acknowledged to be thoroughly practical and experienced gardeners, as proved by the positions they hold, and also the excellent condition in which both the cemetery, public park, and the clergyman's rosery are kept and also admired by thousands. The superintendent of the cemetery has not acted as judge for two years. From the tone of "J. L. B.'s" letter he has evidently been a disappointed exhibitor; but if so, and he resorts to such a meanness as to endeavour to ridicule the decisions of the gentlemen mentioned, why the sooner he ceases to become an exhibitor the better, as such men are not worthy to be connected with flower shows.—L. V. HEATHCOTE, *Secretary of the Leicester Chrysanthemum Society*.

[Our correspondent did not name Leicester, but simply mentioned "a Midland town."]

VENUS'S EARLY DWARF CABBAGE.

I AM always glad to recognise any new or old varieties of vegetables when they come to the front if they are of sterling merit, but when any old variety is about to be distributed under a new name I think it is time to speak out. As we make vegetable-growing a specialty here, and early Cabbages one of our fancies, having grown most varieties I am not without considerable experience on the matter.

I see an article in your issue of November 12th from Mr. Oliver, Elington Park, in reference to a Cabbage that is in the possession of Mr. Venus, Allerburn House, Alnwick, and I also observe it is to be offered to the public shortly as a new variety under the above name in the advertising columns of the *Journal of Horticulture*. Now before it is sent out I would advise Mr. Oliver and Mr. Venus to make sure whether it is not a good old sort named Cook's Early, which has been grown in this locality for the last thirty years. As I understand, it was selected from Cook's Early. I myself feel certain it is nothing else than Cook's Early, which I have grown for years, and I believe I am the possessor of a better selection of Cook's than Mr. Venus, which is now in the hands of a first-class seedsman, and has been sold by them as Cook's Early for the last year at the usual retail price for Cabbage seed, it being one of the four varieties I exhibited at the meeting of the Fruit Committee in London on the 10th February last, and for which I received a vote of thanks. I herewith send you a few for your inspection, and I may say that I never had a single plant that bolted, when all other varieties have done so more or less.

The variety in question was sent out by Mr. Cook, who was gardener thirty years ago to Mr. Collingwood, Dissington Hall, Newcastle-on-Tyne, and I believe he sold the stock to Mr. Dewar, seedsman, Newcastle-on-Tyne, and has remained ever since almost a local Cabbage.

I am growing eighteen varieties this year, and intend sending a collection next spring to the Committee in London, and would suggest that Mr. Venus also send some of his for inspection, as I think it would be to the interest of the public to know before it is distributed whether it is a new or old variety.—DAVID INGLIS, *Howick, Lesbury, Northumberland*.

[Under whatever name this Cabbage may be grown we can testify from the specimens we have received that it is a variety of great excellence.]

CHESTERFIELD ROSES.

THE ancient town of Chesterfield boasts, amongst other attractions, of a church with a remarkable twisted spire. To a large number of travellers in this district probably the crooked spire is the only symbol by which they remember the town. The Derbyshire farmer is interested in its good market, and the rosarian and florist in the good Roses that are

grown and sent out, both plants for stocking the rosary, &c., and cut blooms for the exhibition table.

Having received an invitation from Mr. R. W. Proctor to inspect his nursery I took an early opportunity to run over and see, more particularly his stock of Roses, which I found to be an exceedingly good one. The soil in that portion of the nursery devoted to Rose cultivation is rich, felt slightly springy to the tread, and rests upon a bed of clay. I noticed a little hair, lime, and spent bark, indicative of the refuse of the tannery, peeping out of the soil in places. The elasticity of the soil may be due to the particles of hair, which is doubtless beneficial in strong or clayey soils. The Roses are planted in rows, and have a south-western aspect partially screened from the north winds. They are young plants full of strength, some of this season's growths being over 7 feet long, many about 5 and 6 feet, of strong firm wood. There were not many blooms open, but fine hard buds were plentiful. All the best varieties are grown, and with one or two exceptions are budded low down on the Briar stock, and when transplanted the base of the new growth would be below the surface of the ground, the result doubtless of causing many varieties to emit roots of their own from the base of the young shoot. Mr. Proctor has taken many first prizes for cut Roses at Sheffield, Handsworth, and most other local exhibitions. In passing through the nursery I noticed several beds of fine seedling Carnations containing many good varieties. There were also beds of healthy double Pyrethrums, which are somewhat of a specialty here, but at this time of the year the most attractive beds were made up of *Anemone japonica*, alba and rubra, both very floriferous. These plants are very serviceable for cut blooms at a time when the outside beds are getting very bare and forlorn, and are not, I think, seen in the open border as often as they should. In most large towns, particularly on Saturday nights, large numbers of bouquets and buttonhole flowers are sold, but in my ramble through the town and marketplace I saw very few flowers for sale, and concluded that their absence indicated a lack of interest in the working population for floral decorations. Chesterfield can boast of a few good florists who are successful cultivators. Let us hope that their example may be the means of stimulating in the inhabitants a love for that delightful occupation, floriculture.—J. H. S.

MR. E. MOLYNEUX.

WE consider this a fitting opportunity to present to the public, and more particularly the great body of Chrysanthemum growers, a portrait of one who has achieved such remarkable success in the culture of these flowers.

Mr. Molyneux was born near Helmsley, Yorkshire, his father at that time being gamekeeper to the Earl of Feversham, Duncombe Park, but the subject of this sketch evidently inherits some of the floral tastes of his grandfather, who lived for over forty years as gamekeeper at Nuneham Park, Oxford, where he was an ardent cultivator of florists' flowers, and was a successful exhibitor at many London and local shows, notably Oxford, where he frequently contended against the late Mr. C. Turner of Slough, and not always came off second best. Dahlias were his principal hobby, and he was the raiser of the "Nuneham Park" Onion.

We believe that Mr. E. Molyneux was never employed in a garden where Chrysanthemums were grown, except in the ordinary decorative way, neither has he had anyone to "coach" him; but seeing the splendid flowers produced by the Liverpool growers, and being impressed with their excellence, he was animated with a desire to equal them, and well he has succeeded, as his record will show, in winning such a large number of prizes in the best competition. This should be very encouraging to other young growers who desire to emulate him. He is a close observer of all small details in connection with the growth of the Chrysanthemum never over-estimating his own produce. He has received most valuable assistance from his brother, Mr. N. Molyneux, and from the young men employed under him, without which, he desires us to say, it would have been most difficult to achieve what he has done. He considers that by acting kindly, yet firmly, to those under him, he has contributed to his success. He receives much encouragement from his employer, W. H. Myers, Esq., who is a thorough enthusiast in all matters connected with the garden, which is admirably managed in every department, fruit and vegetables being produced in first-rate condition.

We presume that Mr. Molyneux, now having achieved his object in the challenge cup competition, will, in a series of articles, detail his practice for the benefit of others, as his experiments must now be about completed.

The following is the record of prizes won by Mr. Molyneux, and speaks for itself.—1880, Southampton, four firsts. 1881, Richmond, two first, one second; Southampton, two firsts and two seconds; Kingston, one first and one third. 1882, Southampton, five firsts; Kingston, five firsts, including the champion cup, and one second. 1883, Southampton, six firsts; Kingston, seven firsts, including the champion cup; Win-

chester, four firsts. 1884, Southampton, six firsts; Winchester, five firsts; Kingston, six firsts, including the champion cup, and two seconds. 1885, Southampton, one first; Crystal Palace, seven firsts, one second, and one third; Kingston, eight firsts, including the champion cup for the fourth consecutive time, one second, and one third; Winchester, five firsts and one second. This represents the astonishing total, in six years, of eighty-six prizes, seventy-four of which were firsts. Comment on such a record is needless.

CHRYSANTHEMUM SHOWS.

WEYBRIDGE.

THE eleventh annual Exhibition of the Walton, Weybridge, Oatlands, and Hersham Chrysanthemum Society was held in the Village Hall,

In the open class of twenty-four, incurved blooms, distinct, the competition between Mr. Carpenter, gardener to C. J. Abbott, Esq., Walton, and Mr. Burns, gardener to H. A. Rigg, Esq., Hersham, was very close, but the former won the foremost place by the freshness, symmetry, and solidity of his flowers, Mr. Burns staging some larger, including grand examples of John Salter, Lord Alcester, and Empress of India. Mr. Carpenter staged—back row—Princess of Wales, Lord Wolseley, Lord Alcester, Queen of England, Golden Empress, John Salter, and Golden Queen. Second row—Guernsey Nugget, Mr. Brunlees, Refulgence, Princess of Teck, Baron Beust, Lady Hardinge, and Barbara. Front row—Bronze Jardin des Plantes, Jeanne d'Arc, Prince Alfred, Mrs. W. Shipman, Mr. Jay, Venus, Cherub, and Eve; a fresh, even, excellent stand. In the members' class for the same number of incurved blooms Mr. Carpenter was again first; Mr. Plowman, gardener to C. L. Lavers Smith, Esq., Walton, a good second, and Mr. Burns third. Seven stands of twelve incurved blooms were staged, Mr. Goddard, gardener to C. Humby, Esq., Hersham, securing the first position with remarkably neat and well-finished examples of Empress of India, Golden



Fig. 69.—MR. E. MOLYNEUX.

Weybridge, on the 12th inst., and in the cut bloom department especially was a great success. The Society is fortunate in having as its President and Treasurer such excellent patrons of horticulture as H. Cobbett and H. A. Rigg, Esqs., and also many other supporters; the well-known and much-respected names of G. F. Wilson and James McIntosh, Esqs.; indeed the subscriptions equal the sum that is offered in prizes, "gate money" being relied on for meeting other necessary expenses.

Cut blooms, as above intimated, demand primary notice. So good were they, that but for Mr. Molyneux's exhibits the display would have been quite equal to that at Kingston, and there can be little doubt if Mr. Carpenter had concentrated his strength on the twenty-five-guinea cup class there, he would have equalled, if not displaced, Mr. Gibson. His blooms were characterised by symmetry, solidity, and "finish"—qualities that are bound to tell over mere size if accompanied by looseness. But to the classes.

Empress, Golden Queen, Lord Alcester, Mr. Jay, Beauty, Mrs. Shipman, Mr. Brunlees, Jeanne d'Arc, Empress Eugénie, and Prince Alfred. Mr. Millican, gardener to H. Cobbett, Esq., was a close second with larger but looser blooms, and Mr. Gardener, gardener to R. H. Turner, Esq., Walton, third with particularly neat flowers.

Japanese blooms were of great excellence, producing a brilliant display. In the class for twenty-four varieties Mr. Carpenter secured the first place with, in the back row—Elaine, Comte de Germiny, Meg Merrilees, Madame C. Audiguier, Fair Maid of Guernsey, Baronne de Prailly, Boule d'Or (grand), and Mdlle. Lacroix. Second row—Mons. Henri Jacotot, Hiver Fleur, M. Delaux, Soleil Levant, Garnia, Madame Eugène Pourquie, Album plenum, and M. Burnet. Front row—Thunberg, Daimio, Duchess of Albany, La Nègre, Criterion, Mons. Ardène, J. Delaux, and Peter the Great. Mr. Burns was an exceedingly close second, and Mr. Plowman third. Six stands were arranged in the class for twelve varieties, Mr. Goddard winning the

first prize with fresh bright full blooms of Japonais, Val d'Andorre, M. Burnet, J. Delaux, Mad. C. Audiguier, Mdle. Lacroix, Marguerite Marrouch, Meg Merrilees, Album plenum, Soleil Levant, Hiver Fleuri, and a grand bloom of Etoile du Midi. Mr. Millican, gardener to H. Cobbett, Esq., was only one point behind, staging among others grand examples of Boule d'Or, Meg Merrilees, and Balmoreau.

Mr. Carpenter was once more to the fore in the class for reflexed flowers with splendid examples; Mr. Plowman a good second, and Mr. Millican a close third. In the large-flowered Anemone class the prizes fell to Messrs. Carpenter, Plowman, and Millican for stands of nearly equal merit. Mr. Plowman staged the best Anemone Pompons, one of the most beautiful stands of the season, followed by Messrs. Millican and Lavey. In the class for Pompons Mr. Plowman was first, Mr. Lavey second, and Mr. Millican third; but it is a question if all the varieties staged were Pompons, and the Judges, assuming they represented the intentions of the Committee, awarded the prizes to the best stands.

"Three Friends" provided the means for offering prizes for the best six blooms of incurved and best six of Japanese of any one variety. The response was most satisfactory. In the incurved section Mr. Burns won with grand examples of Lord Alcester, Mr. Carpenter being second with Empress of India, and Mr. Goddard third with Jeanne d'Arc. Japanese.—First, Mr. Burns, with remarkable blooms of Mdle. Lacroix; second, Mr. Reeves, with about equally fine examples of Madame C. Audiguier; third, Mr. Carpenter, with Fair Maid of Guernsey.

Plants.—In the class for six dwarf-trained Mr. Plowman was first, fine specimens, but not quite in perfection, and sticks too obtrusive; Mr. Millican second with smaller and better flowered examples; third, Mr. Lavey.

In the class of four plants Mr. Cante was the only exhibitor of good specimens. He had also the best of two standards, Mr. Millican having the best four with stems $3\frac{1}{2}$ feet high and beehive-like heads, with nearly 100 flowers; he also secured the chief prize for dwarf Pompons, Mr. Plowman showing the best standard Pompons.

The President's prize for two plants worked with not less than two varieties, and for six large-flowering on single stems untrained, were obtained by Messrs. Plowman and Millican, who each had at least four varieties flowering on each plant. The President's prize for six untrained plants and the Treasurer's prize for a similar number, not to exceed 3 feet 6 inches in height, and also untrained, were well won by Mr. Reed, gardener to E. Petit, Esq. Mr. Goddard staged the best Primulas and Mr. Reeves the best table plants, among them Aralia Chabrieri and Jacaranda mimosæfolia, showing how well they are adapted for this purpose. Mr. G. Masters continues the Secretary of this excellent Society, and the value of his services has been recognised by the members.

WESTON-SUPER-MARE—NOVEMBER 12TH.

THE first Exhibition of this newly formed Society was a decided success, and under the able management of Mr. W. Pain, and an active committee of gardeners and amateurs, there is no doubt the autumn Show will soon attain to the same importance as that held during the summer. A fairly liberal schedule was framed, but as it was decided to localise the competition the number of exhibitors was somewhat limited, and next season with various open classes, as well as the experience gained by local growers, we may safely anticipate a great advance in both numbers and quality of the exhibits. The Victoria Hall is well adapted for such a show, but at times was scarcely large enough to hold the numerous visitors. The best six plants of large-flowered varieties of Chrysanthemums were staged by Mr. W. Brooks, among these being very creditable specimens of Mrs. Dixon, Gloria Mundi, Plenipo, and Mrs. Glenny; Mr. W. Hughes, gardener to H. Pethick, Esq., was a close second, his best being Julia Lagravère, Pink Christine, and Jardin des Plantes. Mr. W. Holland, gardener to W. Ash, Esq., was first with four specimens in which Japanese varieties were admitted, having untrained freely flowered plants of Mrs. Rundle, Mr. Glenny, Source d'Or, and Elaine; Mr. W. Horstman was second, and Mr. J. Matthews, gardener to S. S. Knyfton, Esq., third. Mr. W. Brooks was easily first with four plants of Japanese varieties, these consisting of beautifully flowered Bouquet Fait, Source d'Or, James Salter, and Baronne de Prailley; Mr. W. Hughes was second. Mr. Brooks was also successful with trained Pompons, standard large-flowered varieties and pyramids, other successful exhibitors being Messrs. H. B. Farington, W. Holland, and W. Hughes. The best group of miscellaneous plants was arranged by Mr. S. J. Day, gardener to W. P. Emerton Esq.; Mr. Brooks being second, and Mr. H. Hughes third; and with other plants and Ferns Messrs. W. Holland, W. Brooks, S. J. Day, and H. Hughes were the principal prizewinners.

Many of the cut blooms shown were most creditable to the growers, some of whom were amateurs, but all the incurved especially would have been improved by a little "cupping up" and "dressing." With twelve incurved Mr. W. Brooks took the lead, his best blooms being of Golden Empress of India, Jardin des Plantes, Nil Desperandum, Prince Alfred, Princess of Teck, and White Venus. Mr. W. Hughes was a close second, his best being Empress of India, Cbernb, Barbara, and Empress Eugénie. Mr. Ash staged the best six incurved, Empress of India, Princess of Teck, and Venus being the most perfect; Mr. H. Horstford was a good second, and Mr. E. J. Day third. Mr. W. Hughes was first with twelve Japanese, his stand including Fair Maid of Guernsey, Baronne de Prailley, Bronze Dragon, Yellow Dragon, and Comtesse de Beauregarde in good condition; Mr. W. Brooks was a close second, and Mr. J. Fox a good third. The last two were respectively first and second with Anemone-flowered varieties. Mr. W. Brooks had the best bouquet; Mr. S. J. Day being second, and Mr. W. Pain third, all showing creditably; while Messrs. Brooks, Hughes, and Pain had the best epergnes of choice flowers. The last named arranged an extensive display of dried natural Grasses and artificial wreaths, as well as lovely wreaths and crosses of natural flowers and Ferns, not for competition, and which fully deserved the admiration bestowed upon them.

The display of fruit was not a large one, but included good examples of Grapes, Apples and Pears. In the class for black Grapes Mr. W. Daffurn, gardener to Mrs. H. T. Walker, was easily first with very well finished Alicante; Mr. T. Palmer being second with the same variety, and Mr. E. J. Day third, each showing creditably. Mr. W. Daffurn staged, but not for competition, three grand bunches of Gros Guillaume, these weighing in the aggregate about 18 lbs., and were beautifully finished, and the Judges

recommended that a special prize be awarded for them. With four dishes of Pears Mr. E. J. Day was first, and Mr. Knight second. The best single dish of Pears, Marie Louise of good size, was staged by Mr. E. Wheeler, gardener to Miss Charrington; and Mr. C. Rowe, gardener to J. C. Capel Cure, Esq., was a good second with Benrre Diel. Mr. J. Tilley, gardener to Col. Cotgrave, was first with four varieties of dessert Apples, and Mr. J. Matthews second, the last named being also successful with four varieties of culinary sorts. The best single dish of culinary Apples, Warner's King in good condition, was shown by Mr. J. Jakeway, and Mr. E. J. Day was second. Several very excellent collections of vegetables were shown, Mr. J. Tilley being a good first with really fine dishes of Veitch's Autumn Giant Cauliflower, Sutton's new Intermediate Carrot, Magnum Bonum Potatoes, Sutton's Sulham Prize Celery, good Seakale, Perfection Tomatoes, White Stone Turnips and Onions; Mr. J. Day was a creditable second, and equal thirds were awarded to Messrs. W. Hughes and W. Jullick.

BATH.—NOVEMBER 11TH AND 12TH.

ALTHOUGH as far as specimen plants were concerned this Exhibition scarcely equalled preceding ones, it was, on the whole, highly successful, and it is to be hoped would to a certain extent lessen the ill effects of the great loss experienced by the Bath Floral Fêtes Committee at the September Show. So well attended was this Chrysanthemum Show that we were unable to take a detailed report, especially of the classes for cut flowers, while it was no easy matter to critically examine the grand lot of fruit and vegetables in competition.

The best six trained large-flowered Chrysanthemum plants were exhibited by Mr. E. Silcox, gardener to W. Vowles, Esq., these consisting of Venus, Mrs. Rundle, Lord Derby, Empress of India, Mrs. Dixon (this plant gaining silver medal of National Chrysanthemum Society), and Princess of Wales, all in fairly good condition; the second prize going to Mr. J. C. Morris, gardener to R. B. Cater, Esq., who had a very creditable lot; and Mr. G. Tucker, gardener to Major W. P. Clarke, was third. In a corresponding class for four plants Mr. R. W. Southard, gardener to F. J. Walker, Esq., was first, Mr. Henry Scott second, and Mr. A. A. Walker third, some of the specimens shown being very praiseworthy. The first prize for three standards trained was awarded to Mr. W. Taylor, gardener to S. P. Budd, Esq., who was followed by Mr. W. J. Browne, both exhibiting creditably; and Mr. H. Marchant, gardener to T. Jolly, Esq., was third. A grandly flowered plant of Mrs. Rundle staged by Mr. J. Lee, gardener to T. M. Miller, Esq., gained that exhibitor the first prize for a single specimen and also a special prize of £2 2s. Equal seconds were awarded to Messrs. Silcox and J. Morris, the former having a good plant of Mrs. Rundle, and the latter a huge flatly trained Japanese Peter the Great. The latter exhibitor was also first for a pyramid of the same variety, and Mr. Silcox was first for a pyramid Pompon. The best six trained Pompous were staged by Mr. Tucker, but these and the other exhibits in that class gave evidence of the severity of the early frosts experienced. The first prize for six trained Japanese was awarded to Mr. W. J. Brown, who had Hiver Fleuri, L'île des Plaisirs, Album Plenum, Duchess of Albany, Madame Bertie Rendatler, and Mons. Plancheneau in excellent condition. Mr. J. Southard was second, and Mr. W. Nash third. With six conservatory plants the prizewinners were Messrs. J. Morris, E. Silcox, and A. Hawkins, who were placed in the order named, all having formally trained plants of incurved sorts. A special prize of £5, offered for six Chrysanthemums, three to be incurved and three Japanese varieties, combining best foliage and bloom with natural growth, was well won by Mr. J. Southard, who had medium-sized freely flowered examples of Prince Alfred, Golden Empress, Queen of Whites, Peter the Great, Madame Bertie Rendatler, and an unnamed variety. Four fine groups of Chrysanthemums were arranged, all being nearly equal in merit, and as a consequence the Judges' decisions were not generally considered satisfactory. Mr. Gay, gardener to L. Daubeny, Esq., was placed first, his group comprising much the finest blooms, though these were not so plentiful as in the other groups. Mr. J. Morris was a good second, Mr. W. Taylor third, and certificate of merit was awarded to Mr. A. A. Walters.

Classes were also provided for various flowering and fine-foliage plants, and in every case the competition and quality of the exhibits was good. The best miscellaneous group was arranged by Messrs. Cooling & Son, Bath, who had an excellent assortment of fine-foliaged and flowering plants, rather too neatly arranged, however, the pots being somewhat conspicuous. Mr. W. C. Drummond was second, his group including larger plants, but lacking finish in the arrangement; and the third prize went to Mr. T. M. Miller. Bouvardias were well shown by Messrs. G. Garraway, E. Miller, gardener to F. Tagart, Esq., and Messrs. Cooling & Son; Poinsettias by J. Durbin, gardener to J. Tredwell, Esq., E. Miller, and B. Hopkins, gardener to John Bailly, Esq., Frome; Cyclamens by Messrs. A. A. Walters and G. Garraway; Primulas by Mrs. Walker, Mr. H. Lord, and Mrs. Howe; six ornamental-foliaged plants by Messrs. W. C. Drummond, E. E. Bryant, and H. Mardon; and table plants by Messrs. G. Cooling & Son, E. Miller, and B. Hopkins, who received the prizes in the order named in each instance.

There was a marked increase in the number of cut blooms in competition, and in many cases the quality was good, though not yet up to the form displayed at the shows held around London. In the class for twenty-four blooms of large-flowered varieties in not less than twelve varieties there were about twelve competitors, the first prize going to Mr. C. W. Cook, gardener to J. Taylor, Esq., Cirencester, whose stands included excellent examples of Queen of England, Jeanne d'Arc, J. Salter, Lord Alcester, Princess of Wales, Mrs. Heale, Prince Alfred, Nil Desperandum, Jardin des Plantes, Princess Teck, Lady Hardinge, and Mrs. Rundle. Mr. E. Miller was second, several rough blooms somewhat marred his exhibit; and Mr. W. Iggulden third, the latter's stands including rather too many whites; and Mr. J. Marshall was highly commended. The class for twelve blooms, from which exhibitors in the preceding class were excluded, was a poor one. Mr. Gay was first and Mr. R. Richards second, while for six blooms Mr. Waite was first, B. Hopkins second, and W. Taylor third. There were eleven stands of twelve Japanese blooms, the majority of them being meritorious. Mr. W. Iggulden was placed first, his stand including fine fresh examples of Fair Maid of Guernsey, Madame C. Audiguier, Thunberg, Comte de Germiny, Belle Paule, Val d'Andorre, J. Delaux, Meg Merrilees, and Grandiflorum; Mr. E. Miller was a close second, and Mr. J. Marshall

third. The best twelve Anemone-flowered were staged by Mr. E. S. Cole, gardener to W. Pethick, Esq., who had good blooms of Madame Berthie Pigny, Sœur Dorothee Souille, Lady Margaret, and Empress; Mr. E. Miller was second, and Mr. H. Derham third. The latter was first for eighteen blooms in six varieties, and shown with long stems and foliage, Mr. Gay being second, and Mr. J. Hobbs commended. The best stand of twelve incurved in four distinct colours was shown by Mr. E. W. Cook, Queen of England being very fine; Mr. J. Marshall was second, and Mr. H. Derham third. Mr. F. Hooper was first with Pompons, Mr. H. Hooper second, and Mr. Jolly third. The silver medal of the National Society for best bloom in the Show was awarded to Mr. W. Iggulden for a fine example of Empress of India. Vases and bouquets of cut flowers and baskets of autumn leaves and berries were shown in the usual excellent manner, the latter being very numerous and beautiful, and with these Mr. G. Head was first, Mr. E. T. Hill second, and Miss H. Ashman third. The prizewinners with bouquets were Messrs. G. Garraway, W. H. Mould, and Mr. E. Thomas; and with vases Messrs. E. T. Hill, H. Mardon, and E. S. Cole.

It is in the fruit section where the Bath Show is in advance of the majority of kindred societies, Grapes, Pears, and Apples being the most conspicuous. The prizes are by no means liberal, and a considerable number of fruiterers invariably take a proportion of the prizes, but in spite of these drawbacks a grand show of fruit and vegetables was formed. With a collection of six varieties of fruits Mr. W. Nash, gardener to the Duke of Beaufort, was placed first, his Alicante and Muscat of Alexandria Grapes, Golden Gem Melon, Medlars, Hacon's Incomparable Pears, and Harding's Nonesuch Apple being all very good. Mr. W. Iggulden was a close second, his collection including a good dish of Bananas, Doyenné du Comice Pears, and Alicante Grapes. The third prize was won by Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq. Mr. Nash was easily first for four bunches of Grapes in two varieties, having fine bunches of Alicante and fairly good Muscat of Alexandria. Mr. W. Taylor, gardener to Alderman Chaffin, was a good second, his bunches of Alicante and Gros Colman being rather small but well finished. Mr. Nash was also first in the class for any black Grapes, but was somewhat favoured, as his bunches of Alicante, though very fine, were not well coloured. Mr. W. Taylor was again second with the same variety, small in bunch, but beautifully finished; and Mr. E. Chedzey, gardener to W. Duck, Esq., was third with fine bunches of Alicante, which many seemed to think should have been first. Not many white Grapes were shown, Mr. J. Ellicott, gardener to H. W. Tugwell, Esq., being easily first with beautifully coloured Muscat of Alexandria; Mr. G. W. Shelton, gardener to W. K. Waite, Esq., being second with the same variety. There were nine lots of six varieties of Pears staged, and in this class the Judges followed the rather unusual course of awarding the prizes to the generally evenest in appearance, all being fit for the table, and as a consequence much the finest collection, staged by Mr. W. Bannister, was passed. Mr. W. J. Smith was placed first with fairly good dishes of Marie Louise, Louis Bonne of Jersey, Beurré Bosc, Beurré Diel, Beurré de Capiaumont, and Beurré d'Arenberg. Mr. E. Smith was second, and Mr. E. Hall third. Sixteen collections of four dishes of Pears were staged, Mr. F. Lord leading with Marie Louise, Glou Morceau, Beurré Bosc, and Duchesse d'Angoulême. Second Mr. W. Bodman. Third Mr. W. Bush. Thirty-four entered in the class for one dish of Pears, Mr. A. Hall winning first prize with Marie Louise, Mr. Bush following with the same variety; and Mrs. Howe was third. Dessert Apples were very numerous and well shown, such sorts as Cox's Orange Pippin, King of Pippins, Kerry Pippin, Blenheim Pippin, Ribston Pippin, and Cornish Gillyflower being the most popular. Mr. G. Hallett was first with six varieties; Mr. Garraway second; and Mr. E. Hall third, while other successful exhibitors of Apples were Messrs. Biss, E. Ford, W. Evry, W. Webber, W. J. Smith, H. Taylor, Mrs. Deane, and Col. Grant. The collections of vegetables were highly creditable, immense heaps of the different sorts being shown. The prizewinners were Messrs. Garraway, T. Evry, and W. Tylee.

LEICESTER.

The sixth annual Show of this Society was held last week at the Freeman's Arms Hotel, Aylestone Road, and was opened by the Mayor (Alderman Hart). The room was tastefully decorated with evergreens and flowers by Mr. W. J. Iliffe, florist, Market Street. The table decoration of Mr. W. J. Iliffe was very highly commended by the Judges, and awarded a special prize; and plants for decoration were kindly lent by Mr. G. Boyes, Aylestone Park, Mr. John Sargent, Mr. J. Read, Mr. H. Jordan, Mr. J. Burn, and Mr. J. D. Harris. The blooms were a great advance on last year, and special mention should be made of a box of eighteen incurved of Mr. S. Collett, which was deservedly awarded the first prize, and which contained splendid specimens of the Empress of India, Lord Wolseley, General Slade, Refulgence, John Salter, and Golden Empress. Mr. Collett's box of twelve Japanese also obtained the honours—viz., Lady Selborne, James Salter, and Madame Audiguer. The three blooms in Class 7—viz., Lord Wolseley, Empress of India, and Prince Alfred—were especially fine, for which Mr. Collett obtained the first prize. Mr. R. A. Rundel of London exhibited for non-competition a box of Pompons, and also a box of incurved varieties, which were very fine. Mr. H. Woodfield of Thurmaston Pottery exhibited a collection of fancy pots, and Mrs. Grocock several baskets of dried flowers. The Judges were Messrs. G. R. Faire, Barkby; Mr. John Bunn, Abbey Park; and Mr. A. Angus. The Mayor complimented the Secretary upon the result of the Show, and said great credit was due to him for the efforts connected with the working and carrying out in such a successful manner the arrangements. At least 2000 persons visited the Exhibition during the afternoon and evening.

The following is the prize list:—

Open to all England.—Class 1 (eighteen blooms incurved, distinct varieties).—First, S. Collett; second, C. Kitchings, gardener to W. B. Paget, Esq. Class 2 (twelve blooms incurved, distinct varieties).—First, C. Kitchings; second, Landsell, gardener to Thomas Brooks, Esq., Barkby Hall. Class 3 (twelve blooms, Japanese, not less than six varieties).—First S. Collett; second, Landsell; third, C. Kitchings.

Open to Amateurs within Four Miles of Leicester.—Class 4 (twelve blooms incurved, distinct varieties).—First, S. Collett; second, Jno. Bird. Class 5 (six blooms incurved, distinct varieties).—First, S. Collett; second, R. Maine; third, H. Bell; fourth, F. Saun; fifth, C. Day; sixth, H. Jordan;

seventh, C. Scotney. Class 6 (six blooms Japanese, not less than three varieties).—First, S. Collett; second, H. Bell; third, F. Saunt; fourth, A. Maine; fifth, H. Jordan. Class 7 (three best incurved blooms, distinct varieties).—First, S. Collett; second, C. Day; third, A. Maine; fourth, H. Bell; fifth, John Bird; sixth, F. Saunt. Class 8 (basket of Chrysanthemums).—First, S. Collett; second, A. Maine; third, C. Day. Class 9 (bouquet of Chrysanthemums).—First, H. Jordan; second, John Sargent; third, Mrs. Grocock. Class 10 (three best plants).—First, H. Jordan; second, John Sargent; third, John Bird. Class 11 (best single plant).—First, H. Jordan; second, John Sargent; third, John Bird. Class 12 (best single bloom, any variety, staged separately).—First, S. Collett.

GRAVESEND AND NORTH KENT.

The twelfth annual Exhibition of the above Society was held in the Milton Hall on the 11th and 12th inst., and was as usual well patronised. The first prize for twenty-four cut blooms, incurved, was gained by Mr. Phillips, The Deodars, Meopham, Kent; the first for twenty-four blooms Japanese going to the same exhibitor; the first for twelve blooms of incurved to Mr. Armstrong, gardener to N. S. Dunbar, Esq., Greenhithe. The majority of the first prizes for trained plants was won by Mr. Richardson, gardener to Sir James Fergusson, Bart., Singlewell. In the fruit classes Mr. Phillips was first for the collection of eight varieties; Mr. Armstrong securing the first for three good bunches of Grapes, Alicante. Mr. Findly, gardener to Willowby Brown, Esq., staged not for competition three large bunches of Grapes, Black Alicante, the largest bunch weighing 8 lbs. The collections of vegetables were superb, the first prize going to Mr. Phillips, the second to Mr. J. Pope, gardener to John Russel, Esq. Among the miscellaneous exhibits were some fine Chrysanthemum blooms, shown not for competition by Mr. W. Etherington, The Gardens, Swanscombe, Kent. One board which attracted great attention contained new Japanese varieties M. Ghys, clear gold frosted silvery white; Souvenir de Haarlem, violet centre, reverse yellow, very large; M. J. H. Laing, creamy white, yellow centre; Jupiter, fiery red, shaded crimson; M. Garnier, orange, shaded chestnut; L'Aube Matinale, salmon red, shaded gold, very fine; Eugène Mizard, amaranth, gold centre; M. A. Vilmorin, crimson orange and gold; M. Vintouski, crimson and chamois, shaded brown; L'Adorable, very large, canary yellow, shaded violet and red, a fine bright variety; Cœur Fidele, silvery white, shaded violet rose, very fine light variety. The arrangements were all that could be desired, and great credit is due to the Secretary, Mr. Fairey.—S.

PORTSMOUTH.—NOVEMBER 12TH AND 13TH.

The first Exhibition held by the Portsmouth Chrysanthemum Society took place on the dates named above in the new Drill Hall in Alfred Road, a spacious place, well suited to the purpose, there being abundance of room for visitors to wander about and admire the exhibits. Chrysanthemum-growing in this neighbourhood has become very popular judging from the number of entries received for the Show in question. The Hon. Secretary, Mr. F. Power, had spared neither time nor pains to make the Exhibition what it was—a great success. Groups of Chrysanthemums were staged in large numbers and of fair quality, the best coming from Mr. J. Kimber, The Asylum, Wilton; second Mr. T. Short, nurseryman, Southsea. Plants of Chrysanthemums were not of good merit, mostly grown on the old-fashioned principle of tall unstopped plants, which must be lanky specimens under this system of treatment. Of these Mr. J. Byerly, Landport, had the best.

Cut blooms made far the best show, of which there was a considerable number, the competition being keen in the various classes, of which sixteen were provided. A prize of £5 as first for thirty-six blooms, eighteen to be Japanese and same number of incurved, brought out several collections, all of good merit. Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, was an easy first, his blooms throughout being particularly fresh, of large size, good form, and well staged. Particularly handsome were Japonaise, Mdle. Lacroix, Thunberg, Album plenum, Agrements de la Nature, and Fanny Bouchard among the Japanese, while among the incurved specimens were Empress of India, Lord Alcester, Princess of Wales, Princess Teck, and Mrs. W. Shipman. Second Messrs. W. & G. Drover, florists, Fareham, who staged very fine flowers of J. Delaux, Triomphe de la Rue des Chalets, Criterion, Hero of Stoke Newington, and Empress of India. Third Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant. Mr. Flight again led with twelve Japanese and same number of incurved, with fresh and very neat specimens, followed by Messrs. Penford and Drover. For twelve reflexed blooms Mr. Penford was first, showing superior quality, as also he did in the class for twelve Anemones, his blooms of Empress, Gluck, Fabian de Mediana, and Fleur de Marie being specially noteworthy. Mr. Flight was first for twelve sprays of Pompons, followed by Mr. N. Fuller, gardener to Sir J. C. Jervoise, Idsworth House, Havant. Amateurs showed in strong force with cut blooms, principal among them being The Rev. Wells, Rockhampton, W. Lang, Esq., Havant, and Tucker, Esq.

The best table plants, Primulas and Cyclamens, were staged by Mr. Fuller. Mr. Fuller staged the best Grapes, two bunches of Alicante well coloured. Mr. Fuller was second, he also staging Alicante. For two bunches of white Grapes Mr. J. Read was first and Mr. Penford second, both showing fine produce. For three dishes of Apples and three dishes of Pears Mr. A. C. Smith was first and Mr. J. Taplin was second.

Prizes were offered for the best bouquet of Chrysanthemums and Ferns. Most of them were very much too large. Mr. Short took first prize with a neat arrangement. Mr. Hatch of the Victoria Park, Portsmouth, staged a capital group, "not for competition," consisting of the leading varieties, well grown and tastefully arranged.

CHISWICK.—NOVEMBER 17TH.

THOUGH small, the Chrysanthemum Exhibition held by the Chiswick Horticultural Society in the Vestry Hall, Turnham Green, on the above date, was one of the neatest we have seen this year. The Society is a small one, and not in a position to offer very valuable prizes, consequently the competition in most of the classes was chiefly confined to local growers; but their exhibits on the whole were good, and the schedule of classes was judiciously arranged. Appended are details:—

GROUPS.—Three classes were provided for these, and although no prizes were offered for competition, four handsome collections were staged in Class 1, for a group of Chrysanthemums (any class) to be arranged on a

space not exceeding 60 square feet. The most noticeable of these were that shown by Mr. J. May, gardener to the Marquis of Bute, Chiswick House, Chiswick, which was admirably arranged, and the flowers of exceptionally large size; and that from Messrs. W. Fromow & Sons, The Nurseries, Chiswick, in which the flowers were more plentiful, but a little smaller. Mr. Harding, gardener to J. R. Starling, Esq., The Chestnuts, Gunnersbury, and Mr. Davis, gardener to H. G. Lake, Esq., Fairlawn House, Acton Green, also showed handsome groups. There was only one entry in the class for trained specimens, and also in that for Pompons, Mr. Chadwick, gardener to S. M. Nelson, Esq., Hanger Hill House, Ealing, staging fair plants in each.

CUT FLOWERS.—For eighteen blooms, nine incurved and nine Japanese, Mr. Collyer, gardener to Mrs. Murrell, The Elms, Ealing, was an easy first, showing very fair blooms of the following varieties:—Incurved.—Lord Alcester, Alfred Salter, Empress of India, Hero of Stoke Newington, Barbara, Princess of Wales, Bendigo, Mrs. Heale, and Mrs. Shipman. Japanese.—J. Delaux, Mdle. Lacroix, Mdme. C. Audiguier, Duchess of Albany (Jackson's), Baronne de Prailly, Meg Merrilees, Mons. Astorg, Thunberg, and Mdme. de Sevin. Mr. J. Baird, gardener to C. A. Daw, Esq., Homefield, Ealing, was second, his stand including fairly good blooms of Guernsey Nugget, Princess of Teck, Mdme. Audiguier, and Mdle. Lacroix. The third prize fell to Mr. Davis. E. Sanderson, Esq., St. Mary's Road, Harlesden, was first for twelve incurved flowers, his stand containing good blooms of Lord Wolseley, Emily Dale, Barbara, and Princess Beatrice. The others, though small, were neat. Mr. J. Beasley, gardener to F. A. Fraser, Esq., Eastbourne House, Ealing, and Mr. Long, gardener to E. B. Ridges, Esq., Orchard Dean, Ealing, were placed equal second, the former showing Queen of England, Lord Alcester, and Golden Empress very well, the latter being represented by Jardin des Plantes (very good), Bronze Jardin des Plantes, Venus, and Mrs. Heale. Equal third was awarded to Mr. Davis and Mr. Stanton, gardener to H. Smith, Esq., Chiswick. Mr. Long was first for twelve Japanese, showing Criterion, Thunberg, Hiver Fleuri, and Mdme. Audiguier well. Mr. Harding and Mr. Woods, gardener to Mrs. Sanderson, Chiswick, were placed equal second, and Mr. Davis and Mr. Stanton equal thirds. For six incurved flowers of one variety Mr. J. Baird was placed first for small but very neat blooms of Barbara; Mr. Collyer second for Bendigo, and Mr. Davis third for Venus. In the corresponding class for Japanese Mr. Long was first with Mdle. Lacroix, excellent blooms; Mr. Harding second with Mdme. Audiguier and Messrs. J. Coombs, The Gardens, Sheen House, Mortlake (Mdme. Audiguier), and Davis (Fair Maid of Guernsey), equal third. Messrs. Chadwick, Collyer, and Beasley were awarded first, second, and third prizes respectively for six Pompons. Some fine blooms were also shown in the amateur classes, and charming bouquets of Chrysanthemums were shown by Mrs. Rust (first prize), Chadwick (second), Baird (third).

PLANTS.—In the class for six table plants Mr. Hudson, gardener to J. Atkinson, Esq., M.P., Gunnersbury House, Acton, was first with nice plants. We observed no other award. Mr. Woods received the premier award for six Primulas, showing good plants; Mr. J. Coombs was a good second; and Mr. Stanton third.

FRUIT.—Four splendid dishes gained the first prize in the class for that number of Apples, with the following sorts:—Golden Noble, Blenheim Pippin, King of the Pippins, and Dumelow's Seedling. The second was awarded to Mr. Chadwick, who also showed fine fruit, the varieties being Hanwell Souring, Rihston Pippin, Blenheim Pippin, and Dumelow's Seedling. Four dishes of Pears.—First Mr. Chadwick, with Glou Morceau, Beurré Diel, Beurré Bosc, and Gansel's Bergamot. Second Mr. Coombs. Finely coloured bunches of Alnwick Seedling were shown by Mr. Hudson in the class for two bunches of black Grapes. There was no competition, and he was awarded first prize. This was also the case in the class for a white variety, good bunches of Muscat of Alexandria gaining him the award. Baskets of black Grapes and large collections of Apples and Pears from the Royal Horticultural Society added a great feature of interest to the Show. For six dishes of vegetables Mr. Coombs was first and Mr. Stanton second. Several handsome groups of plants from Messrs. Fromow & Sons were greatly admired.

BRIGHTON AND HOVE CHRYSANTHEMUM SOCIETY'S SHOW.—NOVEMBER 11TH.

The third annual Show of the above Society came off on the 10th and 11th November, and proved in every respect a brilliant success. In proof of the rapid progress this comparatively young Society is making, it will be sufficient to state that in addition to the Dome (which on the two previous occasions held the exhibits) they have on this occasion filled the greater portion of the large Corn Exchange adjoining. This arrangement is a great improvement both for exhibitors and visitors. The groups—a great feature—were seen to better advantage in the better light of the Corn Exchange, while the greater part of the Dome was left for promenade. The arrangement of the Dome was very effective. The cut blooms were arranged on tables round the room. A handsome trained standard Chrysanthemum was placed in each break in the tables (caused by their circular arrangement) so as to show about a foot above the boxes of cut flowers. These trained specimens, between forty and fifty in number, were part of the general decoration of the room, including a fine mass of Palms and other foliage plants, interspersed with standard Chrysanthemums arranged in the orchestra were contributed by Mr. W. Balchin, nurseryman, seedsman, &c., Brighton. These plants were from their Hassocks Nursery, and the production of such a large number of good plants, and the effective way they were arranged, is highly creditable to their energetic manager, Mr. Richardson.

There was a good competition in the classes for groups, and the quality and brightness of the flowers very good, but in some cases the arrangement was rather formal. Mr. J. Bunney, gardener to W. H. Campion, Esq., Danny Park, Hurstpierpoint, was placed first in both classes with very good groups. For six trained standards, J. Rolfe, gardener to A. G. Atkerman Hatch, Esq., Beauchamp House, Worthing, was placed first with neat plants, models of precision in training, and the brightness of the flowers and the vigorous foliage showed excellent culture. J. Hill, gardener to Marriage Wallis, Esq., Springfield, Withdeane, was second with larger, less formal and well-grown plants. The class for six dwarfs were also good, Mr. J. Hill being first and Mr. Rolfe second. There was a strong and close competition in the leading classes for cut blooms, and for size, finish, and freshness,

and especially the brightness of the colours when seen under the electric light, was particularly noticeable. In the class for forty-eight, twenty-four incurved and twenty-four Japanese, C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, Surrey, was first, closely followed by Mr. Russell, gardener to Dr. Lewis, Henfield. The other class for cut blooms were equally well contested. Classes 12 and 13 provide for trusses not disbudded to show 6 inches of stem with foliage above the stand as cut from the plant (one wire support only). This is a step in the right direction, but it can scarcely be said that they were a success, chiefly because of their being crowded on too small boxes. Another year, no doubt, it will be entered into with more spirit.

The fruit on the whole was a good show. The Grapes could scarcely be said to be first-class. Mr. Spottiswood's Muscats, awarded first in both classes, were rather thin, but clean, plump, and well coloured. Mr. Godhy staged two lots of Black Hamburgs, was awarded first in open class and second in the "county," and it would have been something wonderful had not the question of judging, lately so well discussed in these pages, cropped up. I think the decision was fair. The competition for Apples and Pears was very good. There were twelve entries in the class for four dishes of dessert Apples, and a like number in the corresponding class for culinary. Mr. Bunney's winning lot in the latter class were very fine, they were Peasgood's Nonesuch, Waltham Abbey, Tower of Glamis, and Dumelow's Seedling.

Much interest was taken in the show of vegetables. The trays were numerous and good. The Carrots and Onions in Mr. Bunney's winning trays were remarkably fine, as were the Cauliflowers in Mr. Duncan's. Brussels Sprouts were rather inferior. A special prize for two dishes of Onions brought a good competition. The irrepressible Mr. Bunney was again first with Deverill's Anglo-Spanish and Bunney's Onion. The latter, I understand, is a variety of his not yet in the trade. It is certainly a splendid Onion and deserves to be put in the hands of cultivators. Nothing, I think, on the vegetable tables attracted more attention than this Onion, and I think it ought to have a more taking name—Bunney's Champion for instance.

The whole arrangements for the Show were excellent, and the Committee and their able Hon. Secretary, Mr. Longhurst, are to be congratulated on their success. The Show was crowded on both days, over 2000 persons having paid for admission on the first day. Promenade concerts were given each afternoon and evening, the Band of Coldstream Guards being in attendance.

BASINGSTOKE.

It would not be easy to imagine a more suitable building for a Chrysanthemum show than the volunteer drill hall at Basingstoke, as it is spacious and well lighted from the roof. The Exhibition to be noticed was held on the 10th inst., and as regards cut blooms was very good indeed; the groups also were of average merit, but the specimen plants were poor; in fact, there appears to be a general falling off in these at the majority of shows this year. The first-prize group of Mr. T. Holdaway was in every respect meritorious, while those of Messrs. Champion and W. Thompson, gardener to Capt. Boland, were creditable arrangements. Of the specimen plants it need only be said that the best large-flowered were staged by Mr. J. Dauncey, and the best Pompons by Mr. Thomson.

CUT BLOOMS.—Of these there was an excellent display. The leading class was that of twenty-four blooms distinct, eight Japanese (in the back row), and sixteen incurved. Four lots were staged, J. W. Flight, Esq., Twyford, Winchester (Mr. Neville, gardener), well winning the first prize with Japanese—Balmorean, Comte de Germiny, Striatum Perfectum, Mdle. Lacroix, Baronne de Prailly, Margaret Marronch, M. Astorg, and Japonaise; incurved—John Salter, Alfred Salter, Empress of India, Prince Alfred, Lord Alcester, Princess of Wales, Lord Wolseley, Jeanne d'Arc, Hero of Stoke Newington, Golden Empress of India, Beethoven, Mr. Bunn, Mr. Brunlees, Princess of Teck, Queen of England, and Mrs. Shipman. With few exceptions the blooms were of excellent quality, John Salter, Empress of India, and Jeanne d'Arc being very superior. The second prize was awarded to Mr. J. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, for extremely fresh and neat examples; Mr. Holdaway, gardener to Major J. M. Hawkfield, third, with larger examples. In the class for twelve incurved blooms Mr. Flight distanced all competitors both in size and quality of blooms. Mr. Bowerman was again second; and Mr. Knellen, gardener to Wyndham Portal, Esq., Malshanger, third.

Excellent stands of Japanese blooms were staged, Mr. Flight being again in the premier position in the class for twelve blooms, Agreement de la Nature being in superb condition; a beautiful bloom like a mass of gold threads. Mr. Holdaway was a good second; and Mr. Dauncey, gardener to J. Bramston, Esq., Buckfield, third, with not large, but fresh and bright examples. The prizes offered for twelve blooms in eight varieties to exhibitors who had not previously won a prize were won by Mr. T. Holdaway and Mr. T. Chapman, gardener to Col. Knatchbull, Clatford, Andover, respectively.

In the miscellaneous classes Primulas were very well shown by Messrs. T. Weaver (Oakley Hall), J. Bowerman, and W. Thompson, and table plants by Messrs. Bowerman, Kneller, and Best in the order named. The best black Grapes (Alicante) were staged by Mr. Best, Messrs. Weaver and E. Crump, the successful exhibitors of Muscats being Messrs. Weaver and Bowerman. Kitchen Apples were admirably represented, Messrs. Chapman, Kneller, and Bowerman securing the prizes. Dessert Apples were also numerous and good, the prizes falling to Messrs. Thompson and Weaver in the order named. Messrs. Bowerman, Chapman, Thompson being the successful exhibitors of Pears.

Vegetables were splendidly shown, and never perhaps were five collections seen more equal in merit. It was only by careful point judging that a decision could be arrived at, and the totals were 37, 36, 35, 35, and 34; the first prize fell to Mr. Bowerman, who staged Cauliflowers, Brussels Sprouts, Mushrooms, Canadian Wonder Beans, Potatoes, Onions, Tomatoes, and Celery, the last two only a trifle weak; the second to Mr. J. Dauncey, who had splendid Onions, Potatoes, Brussels Sprouts, and good Carrots, Tomatoes, Beans, and Cauliflowers; equal third prizes fell to Mr. G. Best, gardener to C. W. Chute, Esq. (grand Carrots, Cauliflowers, and Potatoes), and to Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmon Court, Newbury, who had fine Celery, a remarkable dish of Asparagus, and other

excellent products. There remained one other collection, that of Mr. Kneller, which included splendid Onions, Cauliflowers, and large Brussels Sprouts, and other vegetables so good that the Judges were constrained to put their hands in their pockets and in that way provide an extra prize. The Committee are to be congratulated on their Show, and the Secretary, Mr. A. E. Holdaway, on its good management.

FINCHLEY.—NOVEMBER 13TH AND 14TH.

In addition to the usual summer Show the Finchley Horticultural Society this year held an autumn exhibition of Chrysanthemums, fruit, and vegetables on the date above given. The exhibits were not very numerous, and two small school-rooms sufficed to hold them without the slightest approach to crowding, and but for two or three contributions the Show would have been very unsatisfactory, and much inferior to what should be expected from such a district. As a Chrysanthemum Show it was far surpassed by the Lambeth Amateurs' Exhibition and it will be necessary to take some steps to procure a more thoroughly representative display before the Finchley Autumn Show can claim a good place amongst the suburban productions of a similar kind.

The leading stands of cut blooms were contributed by Mr. J. J. Lowry, gardener to J. MacAndrew, Esq., Belmont, Mill Hill, who secured the premier prize with incurved, Japanese, and Anemones, the blooms being similar to those which he had at the Westminster Aquarium on the preceding days. Mr. H. Oliver, Alexandra Green, Finchley, and Mr. H. Mobbs, gardener to W. T. Linford, Esq., Elm Grange, Church End, also showed blooms in several classes. But the most interesting exhibit was, however, a group of Pompon Chrysanthemums from Mr. W. T. Stapleton of Finchley, which included some of the prettiest little plants we have ever seen. They were all in 48-size pots, bushy specimens about 1 foot high, and bearing two to three dozen blooms of the C do Nulli varieties. The decorative value of such plants could not be over-estimated, and either on the stage of a conservatory or on a margin to groups of plants they would be invaluable. Groups of Chrysanthemums, not for competition, were staged by Messrs. Cuthush, Williams, and Dixon; Mr. Mobbs also having two tasteful groups.

In the fruit classes the Grapes were the principal exhibits, Mr. P. E. Kay, Long Lane, Finchley, leading in the black Grape class with beautiful examples of Gros Colman, the berries large, the bunches well proportioned and finely coloured. Mr. T. Stapleton was second with Alicantes of excellent colour, and Mr. G. B. Shoults, Oakley Nursery, Finchley, was third with Gros Colman, very large, but not quite so well finished as the first. Mr. P. S. Kay also had a basket of grand bunches of Alicantes and Gros Colman, not for competition. Mr. J. J. Lowry was first with white Grapes, showing Muscat of Alexandria well ripened. Apples were numerous and Pears were well represented, the principal exhibitors being Messrs. G. Dyke, gardener to H. C. Stephen, Esq., Avenue House, Finchley; J. J. Lowry; H. Jarvis, gardener to H. M. Bishop, Esq., Hendon Park, Mill Hill; Berse, gardener to J. H. Lermite, Esq., Knights, Finchley, and J. Pulling. Two clean collections of vegetables were staged by Mr. G. Agate, gardener to A. Taylor, Esq., Priory House, Southgate, and Mr. Mobbs, who secured the first and second prizes as named.

LINDFIELD.

This Show was held on Thursday and Friday, Nov. 12th and 13th, when there was a grand display of the Autumn Queen, the groups, both gardens and amateur, being exceptionally good, there being some very fine flowers in the first and second-prize lots. The competition for cut flowers was very good; also for extra prizes offered for Apples and Pears, vegetables, &c., by some of the well-known nurserymen. We must not forget the collections of Potatoes staged by Messrs. Sutton & Sons, which were much admired; also numerous other exhibits were sent by the gardeners of the district not for competition. The Show reflected great credit on the Committee and the Hon. Sec. for the arrangements.

The following were the winners of the principal prizes:—For the best group staged for effect.—First, Mr. A. J. Brown, gardener to W. Savill, Esq., Finches; second, Mr. Venn, gardener to W. Sturdy, Esq., Paxhill; third, Mr. Hodges, gardener to S. C. Gibbons, Esq., Walsted; fourth, Mr. Horscroft, gardener to R. Soltis, Esq., Ardingly; fifth, Mr. Braysher, gardener to Mrs. Catt, Leete House. For the best group staged by amateur and single-handed gardeners.—First, Mr. Brook, gardener to Descon, Esq., Lythe; second, Mr. R. Dnrrant. Twenty-four cut blooms, twelve Japanese twelve incurved (five entries).—First, Mr. Gibbons, gardener to Evans, Esq., The Chalet; second, Mr. Venn; third, Mr. A. J. Brown. Best twelve Japanese (five entries).—Messrs. Venn, Brown, and Hodges in that order. Best twelve incurved.—Messrs. Gibbons, Venn, Hodges, as named. Best six reflexed, six Anemone.—Messrs. Venn and Gower, gardener to Miss Davis. Best single blooms, the prizes given by Mr. Davis of Camberwell (seven entries).—Messrs. Gibbons and Venn. Best incurved.—Messrs. Venn and Gibbons. Best collection of Apples, eight dishes and eight entries, prizes given by Messrs. Laing and other friends.—First, Mr. Venn. Best collections of Pears, four dishes (six entries).—Prizes given by Messrs. Cheal & Son. First, Mr. Kemp. Two best bunches of Grapes (three entries).—First, Mr. Hodges. Best collection of vegetables, prizes given by Messrs. Sutton & Sons, Reading (seven entries).—First, Mr. T. Venn.

LINCOLN.—NOVEMBER 17TH AND 18TH.

The third Exhibition of the Lincoln Chrysanthemum Society opened on Tuesday last in the spacious Corn Exchange of the ancient city. The Show, though decidedly attractive, was not considered quite equal in merit to that of last year. Early frosts appear to have done much injury to the buds, for two of the leading local exhibitors, Messrs. Wipf and Caulling, left the field open to other competitors. The bulk of the prizes for cut blooms was secured by Mr. Bugg, gardener to W. Ashley, Esq., and Mr. Mitchell, gardener to W. J. Waverer, Esq. In the open class for forty-eight blooms there was only one collection, and for this Mr. Mitchell was awarded the second prize of £5. His Japanese blooms were of fair merit, but the incurved were very small. He was quite satisfied with the decision. In the class for twenty-four blooms Mr. Bugg was well ahead, followed by Mr. Mitchell, and they had the same positions in five other classes, while in three more—twelve Japanese, Anemone Japanese, and Pompons—Mr. Mitchell took the lead. The best Japanese bloom in the Show was Fabian

de Mediana, in Mr. Mitchell's stand; the best incurved flower, Empress of India, staged by T. C. Bourne, Esq. Groups of Chrysanthemums were gay, but as a rule defective in quality of flowers and in the finish of the front row. Groups of mixed plants were much better; indeed, very good indeed, especially those of Mr. Mitchell and Mr. Foster, gardener to H. Greenham, Esq., who had the first and second prizes, Messrs. Harding and Bugg following. Mr. Pennell arranged a handsome group, not for competition, which was highly commended by the Judges, and Mr. Illman was commended for meritorious assortment. There was a great and good display of Apples and Pears, and good Grapes were staged by Mr. Allis, gardener to Major Shuttleworth, Old Warden, Biggleswade, who had the chief prizes. The Show was well managed by Dr. George Lowe and his assistants, and the public attendance promised to be great.

READING.—NOVEMBER 13TH.

A LARGE and very meritorious Show was held in the Town Hall on the date named. Groups were remarkably good, the prizes going to Mr. Baskett, gardener to W. J. Palmer, Esq., and Mr. Parham, gardener to H. J. Simonds, Esq. Specimen plants were not of special noticeable quality. Cut blooms were very fine. In the class for eighteen incurved the prizes went to Mr. Neville, gardener to F. W. Flight, Esq., Winchester; Mr. Wildsmith, Heckfield; and Mr. Pope, gardener to the Earl of Carnarvon. There was great competition also in the Japanese class for twelve blooms, no less than nineteen stands being placed in position. After much deliberation the prizes were awarded to Mr. Holdaway, gardener to Major May, Mr. Nevill, and Messrs. Wildsmith and Baskett, the latter being placed equal third, extra prizes being further awarded to Messrs. Strong and Pope. Anemones were good, Messrs. Wildsmith, Kendall, and Elliott being the prizewinners in the order named. Fruit was well shown indeed, the prizes falling mainly to Mr. Turton, gardener to J. Hargreaves, Esq., and Mr. Perkins, gardener to W. H. Smith, Esq. The attendance of visitors was very large, and the Exhibition promised to be financially successful.

HUDDERSFIELD.

THE second annual Show was held in the Town Hall on the 13th and 14th inst. With the liberal prize list of over £35 devoted to four classes of cut blooms, open to all, it is much to be regretted that so few exhibitors responded. The absence also of exhibitors not for competition was felt and regretted; nevertheless, as a whole the Show was an attractive one. The improvement that has taken place was most noticeable in the plants exhibited; indeed, the first-prize group of Chrysanthemums in half a circle of 54 square feet, shown by Mr. F. Hatch, gardener to Alderman J. F. Brigg, was made of really splendid examples of cultural skill. The table plants and cut blooms of Chrysanthemums exhibited by Mr. William Daniels, gardener to Mrs. Cooke, Hall Croft, Mirfield, were of a high order of merit, justly gaining first prizes in their several classes. In the class of six table plants some of the exhibitors had entirely spoiled their chance of success by, as it were, varnishing the foliage over with what appeared to be some preparation of glycerine; the Judges very properly discountenanced such malpractices. In the open class for best bouquet much condemnation was expressed of the Judges' award. It would be well if more attention was given to this matter.

The principal prizes were secured by the following exhibitors:—Mr. A. R. Cox, gardener to W. H. Watts, Esq., Liverpool; Mr. F. Stoker, gardener to Mrs. Charles Crosland, Crosland Moor; Mr. Mark Chambers, gardener to J. Vickerman, Esq., J.P., Taylor Hill; and Mr. F. Hatch, gardener to Alderman J. F. Brigg, J.P.

EARLY-FLOWERING CHRYSANTHEMUMS.

ANOTHER season of the early-flowering Chrysanthemums has gone. Upon the whole it has been a good season in this part of the country, for though too hot and dry during the summer, where the plants have had water enough the sun has well ripened the wood and perfected them.

Perhaps it will be well for me first to deal with the Show at the Crystal Palace, Sydenham. This time there were four competitors—viz., Mr. N. Davis of the Lilford Road Nurseries, Camberwell, S.E.; Mr. H. James of Castle Nursery, Lower Norwood; Mr. A. Luff, gardener to R. R. Hetherset, Esq., Leigham Court Road, Streatham; and myself. It must be understood that the schedule offered prizes of £4, £3, and £2 for a collection of early-flowering "Chrysanthemum indicum" (to be sufficiently in flower for decorative purposes), not less than six varieties, three plants of each, and grown in pots not exceeding 8 inches—that is, measured across the top inside the rim. These are what are called 24's, and are really too small to do full justice to the plants; still a rule is a law, and ought to be complied with; but many of Mr. Luff's pots were too small, and some of Mr. James's were too large. The latter showed a very fine group of Madame Desgrange, but his other sorts were inferior plants in comparison with Mr. Davis's and my own. If eighteen plants were only shown that would comply with the regulation, but Mr. Davis last year not only complied but did much more, and he obtained first prize; and as I saw that there was no objection raised to his doing so, and as I only on that occasion had second prize, this year I not only complied with the rule, sending eighteen plants to regulation, but sent nearly fifty. Of course from last year's experience I thought that the authorities of the Palace not only were willing to give the prizes, but were desirous to make a good show, and if we had no pot larger than a 24 we thought we were right, and so far we were, for I took the first prize; but there was much dispute about the others, although Mr. James had second and Mr. Davis third. I do not know how Mr. Davis failed, but chiefly, I think, because the plants were not quite early enough. He was, however, I think the first person to publicly exhibit plants of the yellow sport of Madame Desgrange. It is very beautiful in its new colour, and deeper in the open air than under glass. The winning varieties on this occasion were Madame Desgrange, Mrs. Cullingford, Madame Jolivart, Lyon, Early Late Flora, and Nanum. We were also able to put up for show the new varieties La Bien Aimée, Surprise,

Salter's Early Blush, Mons. Dufoy, Fiberta, Bronze Early Cassy, White Crouts, Frederick Marronet, Yellow Zénobie, and Petite Marie. To these will probably be added next season at least two sorts—viz., Blushing Bride and Piercy's Seedling.

One of the most important incidents this season has been the general appearance of the yellow Madame Desgrange for yellow; it is not golden as some say. I have grown plants from two distinct sports of it this season, and cannot see the least difference in them; they are exactly the same shade—bright pale yellow. I know of two more sports, and shall try to see them if possible. No doubt that we shall have a deeper sport in time, one that we can truly call golden. Mrs. Rundle produced the sport George Glenney before Mrs. Dixon, so we may feel almost sure that a deeper coloured Madame Desgrange will come, especially as the yellow is already so widely distributed and largely grown.

Salter's Early Blush upon a second season's experience proves all I thought of it last season, and is certainly the best of its colour.

Fiberta, too, has in no way fallen from its place as the very finest pale bright yellow early Pompon upon a second season's experience. It was said last season that this was sometimes labelled incorrectly Jardin des Plantes, but I do not think it was. The one called Jardin des Plantes was wrongly so named, first, I think, at Parker's nursery at Tooting, but that was the poor old thing Madame Domage, or a yellow Madame Dufoy, for the white Madame Dufoy was there called White Jardin des Plantes. These names were and are quite wrong, for neither of them is like the proper late sort, Jardin des Plantes.

Early Late Flora.—It is perhaps well to say a little more about this excellent and important yellow Pompon. It came here with the title Late Flora, which was so absurd that I gave it the prefix of Early, because it was difficult to preserve its identity any other way. Now somebody has called it simply Flora, and as I can hear of no other Flora there can be no objection to the simplification. It is a truly excellent plant; the market men are beginning to think so, and it has made its appearance in the shops in and about London. Mrs. Cullingford, too, is growing, still growing, in public estimation, as is also White St. Crout's, but Petite Marie is generally found to be a very weak plant, somewhat difficult to keep.

The new early sorts of this season are very various both in colour, merit and earliness. The first in importance is Blushing Bride. This variety came from the continent late in the season much damaged by packing, and among wrongly named plants, by reason of which we do not know its proper name, but as we cannot work without one Mr. Davis of Camberwell and myself have given it the above title. Doubtless in due time we shall discover its original designation. I say all this that no one may think that there is any desire, either on the part of Mr. Davis or myself, to rename plants unless it is unavoidable. Blushing Bride is of real value to be put beside Lyon, Flora, and Madame Desgrange, unless in future we should find some fault in it we have failed to discover this season. I always feel it necessary to make some reservation in speaking from the first season's experience, though I have little doubt that this will show better next season. As to its earliness, it had just come into bloom on the 15th of September, which was on the second growth, the first having come very imperfectly through its injuries in transit. At that time it was 2 feet 4 inches high, of stiff, stout habit, with the flowers held well apart on separate stalks, so that each flower had room to come out without any trouble to take off buds, and this is necessary in garden plants, or where they are grown in large quantities for decoration or cutting. The flowers are 2½ inches across, of a bright transparent blush or pinkish colour, very much like old Aureole, but the form of the flower is much better than that, being very full. A flower counted had 394 petals, each one curving in, of a long spoon-bowl shape. I regard it as one of the finest Pompons ever seen in England, either early or late. Of course it will be scarce the first season, there only being two plants in this country as far as I know, and it is very probable I should have heard had there been more.

PIERCY'S SEEDLING.—This is the first good seedling I have raised, and up to this season I think the useless varieties in that line have been about 500 from seed from various sources and indifferent years, so no one need be discouraged at their produce from seed being bad. The seed was sown in heat on March 1st, the leaves appeared in six days, and the plant was in bloom on September 11th. This fully disposes of the tales I heard years back that seedlings did not bloom till the second year, though some I have raised seemed as if they would never bloom, and certainly did not so the first season. Out of 100 seedlings no two had foliage and habit alike. A The plant under consideration grew 21 inches high, bushy in habit, and very floriferous, the top of the plant being a solid mass of flowers all good, and showing no eye. The flowers are from 2 to 2½ inches across, slightly reflexed when full out, the petals being short, stout, and thick. The colour is red orange to yellow. It is a real good open air plant.

LA BIEN-AIMÉE.—This is a pretty little Pompon growing 17 inches high. It came into bloom June 22nd from a top cutting inserted March 13th. It resembles Model of Perfection in the form of the flower being very full and a little reflexed, measuring 1½ inch across, and being a reddish violet in colour. It makes a pretty small pot plant.

ROI DES PRÉCOCES (King of the Earlies).—I do not consider this the king of the earlies by any means. It is a crimson Japanese of very bright colour, but not quite pure. It came into bloom at the end of September from cuttings inserted at the beginning of May, so it is quick in coming to perfection. It was then 2 feet 6 inches high. The flowers are 3½ inches across, the petals narrow and reflexed. It is valuable on

account of crimsons being scarce, but would be much better for disbud-ding. It is of stout habit.

SURPRISE.—This is a Pompon much like the late variety called Laciniata superba. It has a very stout flower with a short thick petal, giving the flower a button-like form of a dull pink colour 1¼ to 1½ inch across. It is a quick robust grower, though rather slender in habit, about 32 inches high. A top cutting put in March 13th bloomed by the 29th of July. The foliage is very dark.

PETIT MIGNON.—There must be some mistake about this. It was sent here from France this spring as quite new, but when it came into bloom it proved to be one we had last season with the name Mons. Dufoy. It came into flower at the end of September, and grows about 3 feet high. The flowers are about 2 inches across, composed of short thick petals, forming almost a ball of a lilac colour.

BOUQUET ESTIVAL.—This is a Japanese; grows about 32 inches high, and has flowers of a ragged structure 3 inches across, which come in clusters on thin wood, so that it wants care to keep it up. It would be better for some of the buds being taken off, as it is a profuse bloomer. The colour of the flowers is a deep lilac, but some branches are much darker than the others, of a bluish crimson tint. It came into flower September 15th from March-struck cutting.

JEANNE COUSINIE flowered September 18th. Its height is 15 inches, and the blooms are 1½ inch across; red violet in colour. L'Immortello and Madame Prilleux both turned out Old Illustration syn. Marie Longarre.

TOREADOR.—This is a red, and a valuable plant because reds are scarce. It resembles Frederick Pélé in habit, but is, I think, rather better as well as brighter red. Its flower is 2 inches across, and the plant grows about 2 feet high, with rather slender habit and spare foliage. It bloomed September 6th.

MAD. BLANCH PERTUZES.—A very nice dwarf plant, growing 1 foot to 18 inches high, bearing a white flower, about 2 inches across, of exquisite form, the petals being short and thick.

MIGNON.—I did not receive this plant till late in the season, and so may have to qualify the character after a full season's culture. As it appears to me this time it closely resembles Fiberta, only that it does not grow more than half the height of that, being only 18 inches high, having the flowers not so large, only 1½ inch across, very bright yellow indeed. It bloomed September 12th. If it should grow no higher next season it will be one of the best small pot plants ever imported. It is a most profuse bloomer, and, I think, of stouter habit and better to propagate than Fiberta.

Bronze Early Cassy has now sported this colour from the yellow sport of the pink one in all my plants, and only becomes yellow when it is fading. Higham.—This is a blush sport of St. Mary, and resembles it in every way except colour. White and yellow bedders are both poor varieties.

I have to thank Mr. F. W. Burbidge, Curator of Trinity College Botanical Gardens, Dublin, and author of "The Chrysanthemum," for his kind assistance and the introduction of these varieties into Ireland; and also Mr. William Dick, garden superintendent of Phoenix Park, Dublin, for his introduction of them there; also I must specially thank Mr. John Thorpe, of the firm of nurserymen Messrs. Hallock, Son, & Thorpe, Queen's, New York, U.S.A.; Mr. T. S. Ware of Hale Farm Nurseries, Tottenham, London, N.; Messrs. Laing & Co., nurserymen, of Stanstead Road, Forest Hill, S.E.; Mr. Watson of Whitlington Road, Bowes Park, London, N., and his son, Walter Watson, of The Grange, Walthamstow, Essex; and last, but not least, for the kind, friendly, and very efficient aid of Mr. N. Davis of Lilford Road, Camberwell, London, S.E.—W. PIERCY, 89, West Road, Forest Hill, London, S.E.

ESCALLONIAS.

THESE are generally regarded as half-hardy evergreens, suitable only for planting to cover walls in southern aspects or sheltered positions, and even then require protection in winter. This, I am fully aware, is the experience of many, and it is without doubt their true character when planted inland, more especially in the northern parts of the country. Those who have only seen these plants in the positions indicated where they are struggling hard to exist and furnish the space allotted to them—that is, growing strongly and vigorously in summer, only to be cut down in winter, can form no idea of their real beauty. I have seen these plants cut down annually to the ground in only ordinary winters, but they do not die, but spring freely and vigorously again from the base, and grow rapidly the following summer. Those who have planted and been disappointed would condemn them even for furnishing walls, and would doubtless advise, as many have done, the space they occupy to be filled with other plants that would prove more ornamental and useful.

In spite of these drawbacks, however, Escallonias are amongst our most effective flowering shrubs in positions where they prove hardy and grow luxuriantly. I do not believe these are adapted for inland planting, for they are really seaside-loving plants. They are perfectly hardy by the coast, and thrive amazingly on the shore fully exposed to the sea, and flower profusely. I have seen them both in Wales and in the Isle of Man fully exposed where many trees were stunted and unsightly. They are most beautiful on walls, where they do well. E. sanguinea, with its less robust habit, is most suitable for this purpose, but both this and E. macrantha are much more conspicuous when planted singly and allowed

to develop into natural bushes. They are admirably adapted for this purpose, and when good bushes are seen in flower they are not easily forgotten. I would strongly recommend them to be planted largely in all gardens and grounds by the sea, both in shrubby borders and as single specimens on lawns. They will grow where some of our hardiest Hollies suffer dreadfully and present a very wretched appearance as the result of the cutting winds of the sea, but Escallonia appear rather to enjoy these winds than otherwise. *E. macrantha*, with its large, bright, dark green shining foliage, when well developed will compare most favourably as single specimens with Hollies.

These plants will bear hard pruning; in fact, I have seen them annually cut in closely with the shears. In certain positions they look very well when subject to this treatment and the surroundings harmonise with such formal specimens. I do not admire these formally trained specimens when they can be kept shapely and at the same time present a natural and beautiful appearance by a judicious use of the knife. Even when trained to develop into symmetrical specimens they should be allowed a little freedom of growth, and when pruned their outline should present some little irregularity, which adds materially to their beauty as naturally grown specimens. The best time to subject these plants to whatever pruning they require is after they have flowered, and even then close cutting back is not needed. By regulating and pruning what is necessary after flowering, the plants are ready in spring to make again a strong vigorous growth. These plants flower on the young wood, and should not be cut during the growing season further than may be necessary to check too luxuriant growth.

Escallonia are propagated by means of cuttings, which root readily and quickly if the end of the young growths are selected when half ripened. They can, however, be rooted at almost any season of the year, but late summer or early autumn is preferable; in fact, I have inserted numbers of them after that date and with very marked success. The portion of shoot selected for the cuttings should be about 2 inches in length, and cut close to a joint with a sharp knife, the lower leaves being removed for about half their length. If inserted during late summer or early autumn the cuttings should be placed thickly together in sandy soil, and covered with handlights or small glass frames situated behind a wall or hedge. Give a good watering, and keep the handlights close until the cuttings have formed roots, when they should be gradually hardened by admitting air, and then placed singly in 3-inch pots. If inserted later in the season we prefer placing them in sandy soil in 8-inch pots, then have bellglasses over them, and stand them in a shady part of any house kept moderately close where the night temperature will range about 50° to 55°. They are not particular, for they will root more quickly and equally as well if they can be placed in a close frame where a bottom heat of about 75° can be given; but I prefer the first method if only the cuttings are inserted early enough. They are not so liable to become checked when rooted under cool conditions as is the case when heat is employed. They are not so long forming roots as many plants, and whichever system is adopted they should be placed in the pots named and wintered in them.

If rooted early they will be established before winter and must have the protection of a cold frame. As soon as the small pots are full of roots they should be placed into others 2 and 3 inches larger, and then when the weather is favourable they can be plunged outside, covering the pots to save labour in watering. These will be by the following autumn good plants about 1 foot high, and can be planted out early in favourable localities to become well established before winter. In uncertain localities planting had much better be deferred until the spring, and the plants protected in a cold frame.

In nurseries where these plants are raised for sale they are grown in the size pots referred to and plunged out in them during the summer, so that they can with safety be obtained and planted at any season of the year. During winter they keep them in good condition by lifting the pots and protecting them in cold frames.

There are several varieties of Escallonia, but I am only thoroughly acquainted with the two mentioned, the flowers of them both being bright red. There is a white-flowered variety, I believe, named *E. montevidensis*, but I have never seen it in flower, and shall be glad to learn from those acquainted with it if it is as hardy as *E. macrantha*, and equally as beautiful and free-flowering.—B.

TORENIA ASIATICA.

THIS lovely plant when first introduced was supposed to require stove treatment, but fortunately, although the plant needs a warm atmosphere in the winter season, it will during the summer months bear a considerable reduction of temperature below that originally believed to be necessary for its healthy condition, growing luxuriantly in the greenhouse or the window of an ordinary apartment, and under certain conditions in the open air.

As its specific name implies, it is a native of Asia, "growing throughout Bengal, in Amboyna, Ceylon, Merqui, Chittagong, Sylhet, on the Madras Peninsula, and it is also widely diffused in alpine regions." By some writers it is said to be an annual plant; but as it may certainly be preserved, in a proper temperature, one or two winters at least, this designation can hardly be correct, though it may be raised from seeds and treated as an annual.

Its pale green serrated foliage is not devoid of interest, but its chief

attraction resides in its charming violet flowers, which are produced profusely through the summer months up to a very late period. They are of a peculiar rich velvety tint, especially in the two lateral lobes of the corolla, where it is most intense. After the flower has been some days expanded it loses a little of its depth, particularly if exposed to strong sunshine.

It is of the easiest possible propagation, cuttings 2 or 3 inches long, planted under a glass in a pot of light moist soil, and placed upon a warm window, rooting with even greater readiness than the well known *Cuphea platycentra*, which is one of the quickest-rooting plants with which we are acquainted. The plant affects a vegetable soil, and will do well in a mixture of peat or leaf mould and sandy loam, with well-drained pots of moderate size.

When grown as a window plant it is best trained upon a flat trellis, which from its growth it will speedily cover, and to induce its lateral extension the extremity of the shoots should be frequently pinched off, or the pot may be suspended, and the branches allowed to trail down-



Fig. 70.—*Torenia asiatica*.

wards, in which position the elegant habit of the plant, combined with its lovely blossoms, renders it a highly interesting object.

The genus *Torenia* commemorates the name of Olof Toren, a Swedish botanist of some eminence. About six other species have been introduced, one of which, *T. scabra*, a plant well known to gardeners, may be cultivated as a half-hardy annual. *T. concolor*, introduced a year or two before *asiatica*, is an interesting species, the flowers of which are entirely of a deep bluish purple, and, coming from Hong Kong, it is rather more hardy than *Torenia asiatica*.—W. T.



HARDY FRUIT GARDEN.

CORDONS.—Special attention should be given to the value and utility of cordons for all gardens great and small, and preference be given to them for many purposes. First of all we should turn to account every foot of wall space, especially for Pears, a wall covered with cordon Pear trees being now recognised as one of the most useful and attractive features of a fruit garden. We altogether prefer single cordons, planting them 18 inches apart, and training them either vertically, diagonally, or horizontally, as may be necessary; the first method being most suitable for high buildings, the second for walls and fences, the third for the base of lofty walls and buildings and for the margins of paths, in which last position we have seen them laden with fruit. Another method admirably combining the ornamental and useful is to plant them along each

side of a broad path and train them to an arch overhead. Apples, Pears, Plums, and Cherries may all be so used, and on walls and buildings we have cordons of Peaches, Nectarines, and Apricots that in all favourable seasons are laden with fruit. The special advantages of cordons are early and persistent fruitfulness, the ease with which the blossoms may be sheltered, the small amount of space required—given 18 inches width from wall or fence and you have ample space for a cordon. Pray bear this in mind when you see spare nooks and angles of buildings which may be turned to account and afford you much fine fruit, for remember a cordon is no mere toy, but a valuable fruit tree. Some of the finest fruits at the recent Pear Congress were from cordons, and we can say that for several years our wall of cordon Pears has never failed us, a fair crop of fruit being always forthcoming when pyramids, palmette verriers, and standards all failed us. To owners of small gardens cordons are a great boon, enabling them to have fruit in much greater variety, in longer succession, and greater excellence than was possible from other trees. In connection with cordons we may call attention to the value of a wall for the development of flavour in fruit. Repeatedly have we had fruit of the same sort worthless from pyramids yet excellent from wall trees. Wall fruit, once a luxury only to be had by owners of walled gardens, is now obtained from cordons on a lodge or dwelling-house. A lofty chimney is one of our very best supports for vertical cordons. A border 6 feet wide and 2 feet deep of sound rich loam is all that is required for them, and it can easily be enriched before the trees show signs of exhaustion by the application of surface-dressings of manure; or, better still, by the regular use of liquid manure every summer while the fruit is swelling.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest-forced Trees.*—The house will by this time have been cleansed, the trees dressed, and the shoots tied in. The lights, if not already replaced, must at once be seen to, and assuming that ripe fruit is wanted before the end of May it will be necessary to close the house at once, as it is advisable not to apply fire heat for at least a fortnight after closing. Old trees that have been judiciously managed and forced for a number of years are more easily excited than young ones, but in either case it is well to exercise patience through the early stages, and on this account an early start is of great importance. When the weather is so cold as to necessitate fire heat to raise the day temperature to 50°, it should be so applied as to allow the pipes to become cool before nightfall. The lights having been off the house, the inside borders will be sufficiently moist, but they should be examined and watered with tepid water if necessary until all the soil is moistened down to the drainage. A ridge of fermenting material placed on the inside borders composed of Oak or Beech leaves and stable manure, will answer the twofold purpose of saving fire heat and giving off genial atmospheric moisture. The manure and leaves should be well fermented before being taken into the house, and if a portion of it is turned every day very little fire heat will be needed for the first three weeks. Ventilate a little every day to sweeten the atmosphere, syringing the trees, walls, and paths with tepid water about 9 A.M. and 2 P.M., when the weather is seasonably fine, but when there is a danger of the buds not getting dry before night the second syringing must be given earlier in the day or omitted. The temperature should range from 40° to 45° at night, and 45° to 55° by day, with a few degrees more from sun heat, or 5° to 10° until the buds are starting, when a slight increase on fine days may be allowed. Where the roots have the run of outside borders the latter should be well protected with some material for throwing off heavy rains and snow, and keeping the surface roots in action, as nothing can be gained by the mistaken practice of starving the roots while the branches are in a state of activity.

Succession Houses.—Take advantage of unfavourable weather for outdoor operations to have all pruning and cleansing operations brought to a close, seeing that the roots of trees under fixed roofs do not suffer from want of water, otherwise the blossom buds will fall when the time arrives for forcing, a season being thereby lost, and root-pruning will in all probability have to be resorted to to check the undue vigour which loss of crop on otherwise healthy trees entails. If the trees have been infested with red spider or scale they should be washed twice with a solution of softsoap, 4 ozs. to the gallon of tepid water, and afterwards dressed with an approved insecticide, that will not leave a thick deposit as some compositions do, closing the pores of the wood, and often disfiguring the fruit when it is washed off by the syringe. When finished allow a free circulation of air through the houses until the time arrives for starting the trees, and where practicable they should be kept clear of plants of all kinds subject to insects, or which are liable to be injured by a few degrees of frost, as it is important the trees have perfect rest, and be not excited by heat foreign to their requirements. Young trees that have become too strong may be improved by lifting and relaying the roots in new loam free from animal manure, training them afterwards upon the extension principle, and allow them to grow into a fruitful state. Old trees that lack vigour may be strengthened by the removal of the surface soil, and watering thoroughly with liquid manure not too strong, prior to giving a dressing of new compost of rich turfy loam—preferably of a calcareous nature; if not, add a tenth of old mortar rubbish, a twentieth of burnt refuse, and a fortieth of bone dust thoroughly incorporated. Surface-rooting should be encouraged by rich surface dressings of manure during growth.

Pines.—It is of the greatest importance at this time of year to have the plants so placed as to obtain all the light possible, deriving all the benefit possible of every ray of sunshine, therefore keep the glass clean, and let the plants be placed as near to it as can be done consistently with

safety. Fermenting beds settle through decomposition, and newly made ones, unless well trodden, subside very rapidly; in either case the necessary attention should be given to raising the plants into a position so as to afford the benefits indicated. It is a good practice to assort the plants according to their respective needs before the winter, and to give the fruiting plants the best places for swelling their fruit properly at a time when natural means do not afford much help. Fruiting plants under any conditions should have a night temperature of 65°, and 70° to 75° by day, with an advance of 10° from sun heat. Successions need only have 60° at night and 65° by day, with 5° to 10° rise from sun heat. Other stock, which are not prepared or intended to make much growth, need only be kept at 60° at night, falling 5° on cold nights, with 60° to 65° in the daytime. Fruiting plants will need a genial condition of the atmosphere, atmospheric moisture being necessary at all times, therefore sprinkling must be seen to regularly, and syringing in a light house will be needed at least two or three times a week. Successional plants and suckers will only need an occasional dash from the syringe, but anything like an acrid condition of the atmosphere should be avoided, as it stunts and cripples the growth irretrievably. As Oak and Beech leaves are now available, and being the best and most durable, new beds should be made as necessary. It is a good plan to free the pits of all the plants, make the beds, and not put in the plants again until they are in a proper condition, as more injury arises from the plants being shifted about, and placing on cold, or its opposite, very hot beds, than is considered creditable. The less check given these, indeed any plants, the better; and although Pines may not show it immediately, as do some softer-textured plants, yet they will show it, and at a time when they are wanted to make growth, which they are unable to do from the results of the check given some time previously.

PLANT HOUSES.

Cypripediums.—The old *C. insigne* should be placed in a temperature of 50° to 55° to unfold its flowers. It will open them very well under cool conditions, but a little heat draws up the flower stems well above the foliage, which gives to the plants a much more effective appearance for decorative purposes. When the flowers are expanding the plants should be removed to the conservatory or any similar position while in flower, and they will be found to last in good condition for nearly three months. The plants intended to succeed these should be retarded by keeping them as cool as possible, or they will come forward too early. At this season of the year they will bear cool treatment without the slightest injury. The useful *C. venustum*, with its dark ornamental foliage, is now showing its flowers—that is, those that have been grown in heat, while those grown under cooler conditions are not yet showing. This variety forms a good succession to the preceding, and can be retarded or brought forward according to requirements or circumstances. *C. Spicerianum* is a gem amongst autumn and winter-flowering Lady's Slippers, and it appears to stand moderately cool treatment after growth is completed, or while in flower, without injury; in fact the lower temperature of the conservatory is beneficial to it while in flower, and growth afterwards is more robust. *C. Sedeni* is very beautiful, and its rose-coloured slippers render it very telling and effective at this season of the year, for the colour is distinct from any others. The flowers being produced in succession for several months renders it a very useful variety. *Cypripediums*, whether under cool or warm treatment, should not be allowed to suffer by an insufficient supply of water at their roots, for they have no pseudo-bulbs from which they can draw support. Less water will be needed than during the growing season, but the compost about their roots should never be allowed to become really dry. At this period of the year watering over the foliage should not be practised, or the foliage of some species is liable to become spotted. The atmosphere must not be kept too moist, or the same results are liable to follow. The structure in which the warm varieties are grown should be kept about 60° at night, with a rise of 5° by day, while those under cool treatment should not be subjected to a lower temperature than 45°. Those that it is anxious to retard may be kept 5° lower for a time without any injury to them, providing the atmosphere is not too moist.

Laelias.—Some of these, such as *L. purpurata* and others of that style of growth, must be kept in the same structure as Cattleyas. The plants should be arranged at the coolest portion of the house, according to the condition of their growth. The treatment for these during the resting period is similar to that advised for Cattleyas. *L. anceps* and its varieties will be in various stages of development according to the treatment, as regards heat, that they have been given during the season of growth. Those that have been grown warm will have their flower spikes well advanced, and may be kept in a temperature of 60° until the flowers expand, and then be removed to a cooler and drier atmosphere while in bloom, a temperature of 50° to 55° being very suitable for them, and if kept dry they will rest well under these conditions after flowering. All that have been growing in an intermediate temperature for the purpose of giving a succession will, although growth to all appearance has been completed, now be making roots freely. These must be regularly supplied with water as they need it until root extension ceases, for fine large well-coloured flowers and plump pseudo-bulbs cannot be expected if those in this condition are sent prematurely to rest by withholding water. Smaller-growing kinds on blocks and in small pans that are suspended at the warmest end of the cool house, should be watered until growth is thoroughly completed; then water should be gradually withheld and the plants kept as dry as can be done without allowing the pseudo-bulbs to shrivel.

Odontoglossums.—Such species as *O. Roezlii*, *O. vexillarium*, *O. cirrhosum*, *O. citrosimum*, and others, require a little more heat during the

winter than such species as *O. Alexandræ*, *O. Pescatorei*, *O. triumphans*, and others, and should now be removed from the coolest house. We place our plants with the *Cattleyas* for the want of a better place. They will do well and pass the winter safely in any structure where a temperature of 50° to 55° at night can be maintained. These varieties should be watered at their roots as they need it. If kept as dry during the winter season as is necessary for many *Orchids* they will be seriously injured, if not entirely ruined. These plants should never suffer, not even during the winter, by an insufficient supply of water at their roots. The temperature of the coolest house should range from 45° to 50° at night, according to the weather. The lowest figures given should only be allowed in the morning during cold or severe weather. Nothing is gained by starving these plants during winter, but, on the contrary, the following season may be required to recruit them.

THE BEE-KEEPER.

THE GENERAL MANAGEMENT OF BEES.

A RETROSPECT.

It is now a long time since this *Journal* commenced. It is, perhaps, the first journal that devoted a portion of its pages to apiculture, and allowed free discussion on all relating to it, which was continued by many of the most eminent writers and practical apiculturists. Weekly its pages had something new and interesting, which was eagerly read by most of the bee-keepers in the kingdom. To the contributors to the pages of this *Journal* at that time are we indebted for the advanced state of apiculture at the present. "A Scotch Bee-keeper" thirty years ago, or thereabout, explained the Stewarton system of insensible upward ventilation. Mr. A. Neighbour, of Messrs. G. Neighbour & Son, spared neither time nor expense in obtaining any and every thing that was likely to advance apiculture. To that gentleman alone are we indebted for the introduction of comb foundation and foreign appliances, as well as the different races of bees, and in which Mr. T. W. Woodbury joined. He also exerted himself to construct a hive for the cottager that would combine utility and cheapness, but, after a fair trial, found that to possess a really useful and lasting hive, a certain sum must be expended if success was to be looked for. He wisely abandoned the idea, giving his opinions and experience instead, so that the cottager might benefit thereby. It is rather a difficult task to direct others to attain the simplest yet most effective and cheapest article. For example, when I recommended angle or T iron for use with the "best hive in creation," it is not what I use, but I recommended it only as an example of what it should be, and that no mistake could be made. Common hooping is all that is necessary, that placed between two rails and fastened with screw nails is more easily managed and cheaper. The introduction of comb foundation by Mr. A. Neighbour, as well as the foreign varieties of bees, also completely revolutionised bee-keeping; and there have been various other advances and improvements which have been duly recorded in these pages.

USEFUL HINTS.

Winter is upon us, but has brought mild weather, the temperature being as high as 57°, therefore our bees have at the last moment had an airing without which it would have probably proved fatal to many bees, as breeding was carried on briskly during October, wherever there were young queens. Where it had ceased the bees had been already confined for six weeks. One hive having a year-old Syrian queen had ceased labour and breeding during that time, but with the milder weather they have started breeding afresh, and are as busy collecting water and what pollen they can get as if it was May. This is rather early should the winter be severe. November-bred bees are not so injurious or risky in a hive as October-bred ones; still it is inadvisable to have bees breeding in November. To stop it, the ventilator beneath should be drawn, and perhaps some of the covering, but the present being an exceptional season, it may be as well to let them alone, only the hint may be taken.

A very important thing at this season is neither to alter the site nor appearance of the hive unless the distance be several miles, then bring them back after two months. I have a hive now of which I had occasion to shift the entrance from one side only to the other about six weeks since; though that time has elapsed since, on the bees airing themselves during the mild weather, every one of them, on re-entering the hive, went to the side they had been accustomed to before it was altered. Had the hive been shifted a few yards many of the bees would have been lost; for, remember, though the temperature is high, the air is damp, and whatever they rest upon soon draws the heat from their bodies. If the weather keep mild, and the bees on the wing, attend to keeping the floors clean and dry.

Little more than a month will bring us to the time bees begin breeding, gradually extending as the season advances, and consequently nearer the outer edge of the cluster, but seldom to the extreme unless in small hives and during warm weather. If the hive is of sufficient size, and well provisioned, they require little or no attention until swarming is expected or supers are wanted. In fact, bees, where properly managed, only require close attention from May till September. However, the majority of hives in use are so small that it is impossible to bring bees to the swarming point without feeding, thus incurring both extra labour and expense, with a much less yield of honey.

The subject of brood-spreading has been so well threshed out of late that, but for one or two things, it might be allowed to rest. The late Mr. Pettigrew, though he differed from us in opinion on some things, was right in his argument to have large hives with plenty of bees. These are the two essentials towards successful bee-keeping, and the proper way to spread brood, and when the British Bee-keepers' Association took it upon themselves to fix a standard hive of about half the size, it ought to be run counter to common sense and sensible and profitable bee-keeping. I wonder if it ever occurred to the advocates of brood-spreading to think about what they were teaching. In the first place, advising the spreading of brood at a time the hive ought to be full to overflowing. A better plan would have been to advise that brood-spreading was neither necessary nor possible. Otherwise it points directly to previous bad management. How often has the *British Bee Journal* told us of the loss of three thousand eggs daily by some neglect or other in not giving sufficient breeding space. It is very well if other things had been in keeping, but we find what they recommend stultifies their argument. Hives half the size they should be will be filled with eggs in eight or nine days, and when brood-spreading takes place, according to the number of frames already tenanted, as recommended, and to insure the three thousand eggs daily the whole operation of brood-spreading would have to be performed in about a week, and this with the weakest hive recommended. Can anything be more absurd?

Feeding does good to bees approaching want, but none whatever to well-provisioned hives. The evils of feeding are many. In an apiary where feeding is never resorted to robbing seldom occurs; the bees never being enticed out are safe from cold, the hive is kept stronger and progresses more steadily and quickly than those fed. Feeding weak hives draws the bees from the stronger ones to rob. Feeding strong hives gives bees an appetite for more, annoying every hive in the neighbourhood, losing themselves in great numbers by fighting or cold. Then the damp engendered in fed hives is so prejudicial to the welfare of bees that it should never be resorted to unless when it cannot be avoided.

Feeding swarms when honey is scarce is a great advantage, and a swarm so attended to will give a large return of honey when swarms on an equal footing at first, but neglected, will give nothing. The evils of feeding are that some of the sugar may get amongst the honey, and the sugar-fed combs are more brittle and more liable to decay than combs made in the natural way from honey.—A LANARKSHIRE BEE-KEEPER.

A YEAR'S RECORD.

THE falling leaves as they fall from the parent bough, and the dying verdure of the fields and woodland glades, give warning that a time of rest is near, and that Nature is quietly passing to her annual repose. The solitary bee as it leaves its hive and returns with but a slender little load gives evidence that even these, the busiest of insect tribes, finding the season over in which they are able to gain an increase to their store, are carefully husbanding their strength in order that another spring may find them the more ready to take advantage of its flowers. Not so, however, the bee-master, who is indeed at all times busy either scheming how to assist his insect labourers in their toil or planning some new device or form in which to take the surplus he hopes to obtain in the future season.

This is the time when a most fitting opportunity is presented of calculating the result of the season now gone by before looking far into the time which is to come. If—and that it is so there can be little doubt—a good nett profit is the aim of the bee-master, now is the time to strike the balance of the year, to correct or to examine causes of failure in the past, and to lay a sound foundation for the future. To pass on then let me shortly review the year, but before doing so give some account of my own experience, not so much because it shows a strikingly handsome profit, as that it may prove that an average bee-keeper may from even a small—and, alas! mine is all too small—an apiary gain not only an infinity of pleasure, but a good round sum of money as a practical memento of his year's attention.

It is impossible to set out in full—in fact, it is not necessary—a detailed account of the capital expense incurred, but current expenditure and income are given in detail in order to give those who have no experience in such matters some idea of the expenditure and income under these heads during the season now almost passed.

Capital Outlay on Four Stocks, Hives, &c.			Income.		
Current expenses, 1885.					
	£	s. d.		£	s. d.
Sections and foundation	0	12 5	251 lbs. Honey sold.. .. .	15	10 0
Sugar	2	2 6	Prizes.. .. .	1	0 0
Zincs	0	0 6			
Quilts and veils.. .. .	0	2 0			
Bottles, labels, &c	1	1 7			
Bees	1	10 0			
Time and interest on money.. .. .	1	12 6			
	£7	1 6		£16	10 0
Nett profit on the year				£9	8 6
Average per stock				£2	7 1½

Such is the statement of facts, relative to which I may add that in certain columns several statements of profits have appeared, but in not one of them did I see any charge made under the head of current expenditure for time and labour expended in management, nor yet a deduction made for interest on the money expended as capital outlay. If such deduction had not been made in the above statement the profits would have appeared greater—viz., £11 1s. instead of £9 8s. 6d. It is, however, only reasonable to make a full allowance for time, and to allow such interest, as it is but poor encouragement to a cottager to be told he can make a certain sum of money if he will count his own trouble and time as of no value. Fictitious balance-sheets—and any with such vital omissions must be fictitious—are misleading, and do not prove of the value which they might otherwise have been by giving data to which one who desires to influence another in the way of becoming a bee-keeper may turn for assistance.

It may be noted that the sum paid for sugar is high, but the explanation is that it is my custom to form sugar-fed stocks early in August, and so the consumption of syrup is somewhat greater than would be the case if such stocks were formed in September. Another circumstance needs some comment, and this time I refer to the price paid for bees. These bees, it may be said, are used each autumn to strengthen the stocks for another year, because as the non-swarming system suits me best in the majority of cases there are no surplus bees taken from honey stocks to add to those set apart for the following year. It is, I am convinced, a great mistake to be niggardly in strengthening stocks; the return is such that, as far as my experience goes, the somewhat decreased profit of the one year is amply repaid by a corresponding increase in the next, and so on.

The year itself has, on the whole, been favourable, but one great drawback has been the often repeated changes from hot to cold; one day bright genial honey weather, the next borrowed as it were from early spring. Around the district swarms have been numerous, but the yield of honey has not been anything more than ordinary. One thing is most satisfactory, and that is that my own stocks—two large Pettigrew's and two bar-frame hives—have all yielded a weight of honey nearly equal, and so the profit does not arise from one stock done a prodigious amount of work so much as from a general efficiency. And this must be the one great aim of all, the constant care of everyone who has bees to manage—to keep up all stocks to the highest point of excellence, not to allow the slightest deterioration, and if any becomes perceptible at once to set it right out of the profits of the year. Until the stock is of the same value, as it was at the preceding year's valuation there can be no profit. Many complaints have been made of honeydew having been collected in somewhat large quantities, and so the quality of the honey deteriorated, but this misfortune was here escaped, and the honey was of a good uniform quality, and in my opinion, if anything rather above the average in this respect. For the year now fast speeding on to its close we may well be very thankful, and if in the future no more adverse time shall fall upon us we may rest assured that the harvest will be greater still each year as it comes that though the price of honey will go down the larger quantity

gathered by each stock on the average, taking the country through, will bring up the profit to the same satisfactory amount as it was in the days of clumsy devices and bad management, when where one man kept bees on intelligent principles ten keep them now; when bees by their thousands were stilled to rob them of their store; when that store was presented for sale in unwholesome form contaminated with bee bread and brood; when but a few men were able to point with pride to their better system and management, and could with pride and just pleasure consider themselves to be almost, shall I say, the sole representatives and supporters of a just, reasonable, and humane system of management, whereby, although their store is taken, the hives are spared and kindness takes the place of heartless cruelty.—FELIX.

BEES AND BEE-KEEPING.—An essay on this subject was read at the Wakefield Paxton Society's meeting on the 7th inst. by Mr. Frank Eccles, a young and enthusiastic apiarist of Newmillerdam, who in the course of a very practical paper showed the method he adopted for successful and profitable bee-keeping. The essay was made more interesting by a large number of appliances, the use of each being clearly explained, also specimens of the various kinds of bees which are kept, and the recommendations they severally possess being fully treated. A hearty vote of thanks to Mr. Eccles brought the meeting to a close. To judge by the interest shown in the essay the number of bee-keepers in this neighbourhood will no doubt be increased.—H. C.

TRADE CATALOGUES RECEIVED.

Ernest de Schampheleer, 32, Rue de la Station, Wetteren, Belgium.—*Catalogue of Fruit Trees, Roses, and Ornamental Trees and Shrubs.*

Ketten Frères, Luxemburg.—*Catalogue of Roses.*

Robert Owen, Castle Hill, Maidenhead.—*Pocket Guide and List of Tuberos Begonias, Pelargoniums, Chrysanthemums, &c.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (G. Reading).—The address you require is M. Louis Van Hontte Royal Nursery, Gendbrugge, Ghent, Belgium.

Fungus on *Chrysanthemums* (C. H. M.).—We have referred the matter to an expert, and will give you a reply in the next issue.

Distilling Water (C. S.).—We are not able to state any special "economical method of distilling water on a large scale," this not being a horticultural question.

Peach Trees Diseased at the Roots (John Boulder).—You are quite right in your opinion as to the cause of your Peach trees failing. The soil you have sent is permeated with the mycelium of a fungus as thoroughly as a brick of Mushroom spawn, and this in all probability is due to the leaf soil and perhaps decayed wood which were mixed in the border when it was made. The only cure is to remove the soil entirely from about the roots and have it replaced with some of a more loamy description mixed with chalk, lime, or lime rubbish.

Free-growing Grapes (C. G. S.).—Three varieties of Grapes that grow well, bear freely, and are as little liable to "disease" as any others, are the Black Hamburgh, the most useful black Grape for summer; Foster's Seedling, of which a few Vines will suffice; and Alicante for late use. The fruit of this is by no means equal in quality to Mrs. Pince's Muscat or Lady Downe's Seedling, but the Vine is a more certain bearer. If one end of your house is warm enough you might try a rod or two of Muscat of Alexandria, which is by far the best of all white Grapes. It is for obvious reasons impossible for us to recommend dealers.

Good Rhododendrons (J. W.).—The following are twelve excellent hardy, free-growing and flowering varieties that will probably suit you:—Charles Dickens, scarlet crimson; Charles Bagley, cherry red; Countess of Normanton, white, mauve blotch; Fastuosum flore-pleno, pale lavender, semi-double; Joseph Whitworth, lake, with cluster black spots; Lady Armstrong, pale rose, pink-spotted; Lady E. Cathcart, bright rosy carmine, dark blotch; Michael Waterer, brightest scarlet crimson; Mrs. Thomas Wain, pale rose, brown blotch; Mrs. John Clutton, white, good; Mrs. R. S. Holford, salmon pink, beautiful; and Sir Thomas Sebright, purple, hrenze blotch.

Wintering Cannas (J. C. E.).—Cannas that have been taken up from beds in the London parks are packed closely together in soil under the stages of greenhouses in which Zonal Pelargoniums are wintered, and little or no water is given to them, nor is there any drip from the plants above. Your plants may be wintered just as well in pots in a greenhouse having a night temperature of about 45°, falling a few degrees in damp weather. They must be kept dry rather than wet, but not dust dry. Moisture is needed to keep the crowns fresh, not to support nor encourage growth in the winter.

Pears on a West Aspect (Surrey Amateur).—In good loam 3 feet deep on chalk we should not hesitate to plant any varieties of Pears or Plums we desired to cultivate against a wall in Surrey, on which the sun does not shine till 12 or 1 o'clock in the day; and, instead of having three trees only on a wall 40 feet long, we shall have more than twenty, training them a diagonal cordons. These are the cheapest trees of all (maidens), and this is the quickest method of covering a wall.

Scale on Pear Trees (W. J.).—The spurs you have sent are seriously infested with oyster scale (*Aspidiotus ostreiformis*), and it is impossible that trees in such a state can flourish. The wood is quite encrusted with the scale. You had better scrape them without injuring the bark, then dissolve three or four ounces of Gishurst compound or soft soap in a gallon of water, stirring in briskly while hot a wineglassful of petroleum, and apply with a brush, rubbing well into the crevices. Great good would be done by well syringing the trees with the petroleum mixture, but many parts would not be reached, and brushing would be more effectual. The preparation should be kept constantly stirred during its application. The name of the shrub of which you have sent a spray is *Leycesteria formosa*.

Growing Chrysanthemums (A Novice).—Every man who becomes successful was a "novice" some time, but by attentively picking up hints from others, an aptitude for learning by reading and observation, and thoughtful and persevering attention to small details of culture, many "novices" have become "masters" in Chrysanthemum growing, and other work in which they have been engaged. You will find on perusing the notes relating to Mr. Molyneux in another column that that renowned cultivator was entirely "self-taught" in the production of large and highly finished blooms. You will also perceive that there is a probability of his publishing the details of his method of culture, and these when they appear you had better read. Much has been published in the past, and we are informed that some of the largest blooms that have been exhibited this year were the result of the cultivator having turned to account the instructions that have appeared in this journal.

Preparing Beds for Roses (Merchant).—The preparation of the beds is of primary importance, and you seem to have set about it in a proper manner, only we think the manure should have been used more freely as well as the turfy loam. We have recently made a Rose border. First we put in 6 inches of drainage, bricks, and other loose material at hand, securing this with a layer of turves grassy side downwards; then a layer of manure 3 inches thick, and on this a layer of the old soil taken from the border, which was a good friable loam, and on this a layer of turf cut about 2 inches thick from a roadside and chopped up roughly only. Upon this a layer of manure, then the old soil and turf again, and so on to the top, the depth above the drainage 2 feet. This was done early in October, and it will lie until early January, when we shall put on an inch thickness of bones (half-inch) and 3 inches thickness, if possible, of charcoal, and then have the border turned over from end to end and the whole of the materials thoroughly mixed. The turf over the drainage will not be disturbed. We shall then plant and mulch with 3 inches thickness of short manure. We ought to state that this is for Roses under glass, though we make similar provision for the outside border. We should add more turfy loam to your beds, and add manure to the extent of a fifth of the other materials, incorporating them together. If your plant be a *Theophrasta* you may make cuttings of the ripe young shoots in spring, inserting in sandy soil with a surfacing of sand, and place in heat, covering with a bellglass. The *Araucaria* we are afraid you can do nothing with, only tolerate it as long as you can, and then obtain a young plant.

Pyramid Apple and Pear Trees not Fruiting (C. E. Bolton).—Judging from the wood sent, and your account of the trees, we think they make too much wood—i.e., are too vigorous, and do not ripen the wood sufficiently to insure the perfect development of the fruit. We know but one remedy, which is to restrict the root-action, and encourage surface roots by rich top dressings. We should form a trench a yard from the stem all round, and cut off all the roots, going down as deeply as the roots to make sure of severing all that extend beyond a yard distance from the stem. The trees against the wall should have the trench taken out at a distance of 4 feet from the stem. Before filling the trench the surface soil should be removed from the roots with a fork, and if they are deep carefully raise them and relay in fresh soil nearer the surface; but as the trees have not been disturbed at the roots for some years, it will not answer to interfere too much with them, therefore confine the lifting to the uppermost roots. The trench should be filled up again and the soil trod firmly as well as that over the roots, which should not be covered deeper than 3 or 4 inches with soil. When the work is complete mulch with 3 inches thickness of well-decomposed manure. The Apples you name are free bearers, and so are the Pears. Are you in a smoky locality?

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*A. J. Brown*).—All three Pears are *Beurée* Diel. (*N. H. Pownall*).—Apples: 1, Norfolk Stone Pippin; 2, Lewis' Incomparable. Pear: No. 1, Duchesse d'Orleans; 2, Epine du Mas. (*F. J.*).—1, *Beurée* de Wettren; 2, *Doyenné du Comice*; 3, *Beurée* Superfin; 4, *Probably Doyenné du Comice*; 5, *Carel's Seedling*; 6, *London Pippin*. (*E. M. B.*).—1, *Ribston Pippin*; 2, *Doyenné Defays*; 3, *Knight's Monarch*; 4, *General Todleben*; 5, *Red Doyenné*. (*J. Watson*).—1, *Beauty of Kent*; 2, *Cockle's Pippin*; 3, *Brad-dick's Nonpareil*; 4, *Marie Louise d'Uccle*; 5, *Glou Morceau*; 6, *Chauumontel*. (*L. G.*).—1, *Golden Reinette*; 2, *Bess Pool*; 3, *Uncertain*.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*B. J. B.*).—*Laurus nobilis*. (*John Cameron*).—1, *Retinospora ericoides*; 3, *Retinospora filicoides*; 4, *Thuopsis dolabrata*; 5, *Cupressus Lobbi*; 6, *Cupressus Lawsoniana*; 7, *Arbutus Unedo*. 2 will be named next week. We do not undertake to name more than six specimens at one time. (*S. W., Yorks*).—As you supposed, the specimen received was completely crushed, but it is evidently a *Streptocarpus*, probably *S. Rexi*.

COVENT GARDEN MARKET.—NOVEMBER 18TH.

BUSINESS at a standstill.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0	to 3 6	Oranges	100	0 0 to 0 0
Canadian	10 0	15 0	Peaches	per doz.	0 0 0 0
Cobs, Kent	per 100 lbs.	22 0	Pears, kitchen ..	dozen	0 6 1 0
Figs	dozen	0 8	„ dessert	dozen	0 4 1 6
Grapes	lb.	0 6	Pine Apples English ..	lb.	2 0 0 0
Lemons	case	15 0	Plums	1/2 sieve	0 0 0 0
Melons	each	1 0	St. Michael Pines ..	each	1 6 5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney	lb.	0 3 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	1/2 sieve	2 6 3 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 1 0 0	Potatoes	cwt.	4 0 5 0
Capiscums	100	1 6 2 0	„ Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 4 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	2 0 2 6
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 0
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0



WINTER DIET. THE FLOCK.

If we were asked for a golden rule for guidance in feeding animals our reply would be, "Avoid extremes." Plain teaching is our aim, and we strive to avoid a too scientific or technical tone; yet we are bound to keep well in view the importance, nay, the absolute necessity, of combining science with practice, and no farmer can have clearness of aim and purpose unless he has a sufficiently clear understanding of cause and effect in its relation to his work. Take, for example, the well-known fact that a diet of Turnips or Swedes frequently causes abortion in ewes. Why? In cold, often very wet weather, a pregnant ewe will consume from 20 to 30 lbs. of Turnips, which if not frozen are certainly at a very low temperature when eaten. In point of fact, it is a dietary consisting of nine-tenths of water so cold that the temperature of the body is lowered; there is a falling off in condition, the foetus lacks nourishment, is chilled, starved, dies. Cause and effect are surely before us here. The remedy is equally clear—reduce the quantity of roots by one-half or two-thirds, according to the condition of the sheep; substitute sound dry food in the form of mixed straw and hay chaff with bran or crushed Oats if the condition is very low, and see that the sheep are able to rest in comfort. Very simple all this, is it not? yet of such vital importance that it marks the difference between success or failure. Do not forget that exposure to cold and wet, as well as the consumption of half-frozen Turnips, lowers the temperature of the body, causes an unhealthy strain upon it because so much heat is absorbed, and much food is wasted in raising the temperature of the superabundance of cold water contained in the Turnips.

We desire to call particular attention to this important matter now, for the critical time for the breeding flock is

upon us. To fold pregnant ewes upon Turnips or Swedes now, or rather from the present time till after the lambing, is to court failure; it is a reckless proceeding of which no really intelligent man can be guilty. It is still done, however, and last year we again had urgent inquiry for a remedy for abortion after the mischief was done. A mixed diet, kindly gentle treatment, rest upon a sound dry pasture; in a word, let us follow the dictates of common sense in feeding the ewes, and in our own care for their external comfort. May we go a little farther, and ask our readers to try and see what food does for animals? Food consists of two distinct parts—organic and inorganic. Organic food consists of combustible substances divisible into two classes—nitrogenised and non-nitrogenised. The office of the first is to form tissue and blood; of the last to maintain heat and promote respiration. Inorganic food, really the residue of the other, supplies bone and enters into the juices of the body and into the composition of the blood. Our object here is to show that food does something more than form tissue, bone, and blood. It maintains heat, without which no animal of the farm can be in a healthy thriving condition. To expose animals in a bleak wind-swept field, to keep them penned up in a fold, standing hour after hour in a mud puddle several inches in depth, to give them nothing but cold wet food; all or any of these things tend to exhaust the strength, to waste the heat, to lower the condition.

A short time ago mention was made of the use of unthreshed Oats as an economical article of food, and we may here strongly recommend the chaffing of unthreshed Oat sheaves for sheep. In analyses of grain and straw we are shown the various proportions of constituents in one hundred parts, and Oats certainly compare favourably with other cereals, the grain containing of water, 13.09; flesh formers, 11.85; heat and flesh producers, 63.34; and the straw of water, 12.06; flesh formers, 1.63; heat and fat producers, 39.98. Compare these proportions with those of Swedes, which give of water, 89.40; of flesh formers, 1.44; of fatty matters hardly an appreciable proportion, and we see how admirably chaffed grain and straw of Oats is calculated to correct the deficiency of the roots. It is undoubtedly true that we have repeatedly advised that ewes should be kept off the roots till after lambing, and this course has been adopted as the only safe one while so much careless practice is known to exist. But in safe hands both Swedes and Turnips may be used at any time in moderation, and carefully mixed with other food.

The value of other straw must not be overlooked. Barley, Pea, and Bean straw are all nutritious, and are used unchaffed in racks, affording a frequent change and much wholesome nourishment to the sheep. We have strong faith in keeping pregnant ewes in high condition, our aim being to obtain fine sturdy lambs early in the season, so that we may draft a certain number to be brought on for market as fat lambs, and to select the best ewe lambs for breeding in the first year. Two flocks of such lambs of the current year have taken the tups, and we have reasonable hopes of obtaining good lambs from them, for they have been well fed to bring them forward in growth, the tups being put with them a month later than with the older ewes. These lambs have had some cake, but now that corn is so cheap it is used instead of cake, a mixture of Barley, Peas, and Beans being ground, and forming excellent nourishing food, a fair amount of which will be used for them throughout winter, and we believe that this gain of a year in breeding will well repay us for the extra outlay in food which it involves.

(To be continued.)

WORK ON THE HOME FARM.

The killing and curing of bacon hogs is now being done at the home farm, nice compact animals of about 250 lbs. dead weight being selected for this purpose, and we have plenty to choose from, our stock of pigs being considerably enlarged to consume cheap corn, which just now at any rate answers best if turned into pork, and so passed into the market, such

pigs producing about £6 apiece under the auctioneer's hammer. We regret having had to expend a considerable sum of money in stocking the five farms which we have in hand with pigs. This is undoubtedly bad practice, but in our case it was unavoidable for this winter. Another season we hope to do better by having enough breeding sows on each farm. Whether pork is cheap or dear pigs bring a quick return for money expended upon them, no animal growing or fattening so fast. Perhaps stubble pigs answer best. We saw a fine herd out upon the stubbles of a large farm this autumn that at a reasonable rate must have brought the wise owner considerably upwards of £1000 by this time. Swine fever is still rampant at many farms, and the sale of young store pigs is prohibited in open markets. Why should pigs be kept in the filthy state in which so often see them? We have had the walls of all our piggeries thoroughly cleansed with washings of fresh-slacked limewash, the yards cleared of any accumulations of old manure, and plenty of fresh straw kept littered about yards and beds. We use large sheds, opening into yards of proportionate size, for pigs, from forty to sixty pigs being kept together in each of them, and we find this plan answers well, the feeding and littering being much less laborious than when the pigs are in separate styes.

Turkey poults are now in season, and we have plenty of nice forward birds that for several weeks after harvest were out upon the corn stubbles daily. The important thing in turkey breeding is to have plenty of forward broods, to which end there must be kept plenty of breeding stock, old birds always commanding high prices if fattened specially for Christmas, for it is size that tells in the turkey market—the larger the kind the higher the price. For home consumption we try to have enough full-grown plump young hen birds, which are considered to be best for the table of a connoisseur. An excellent supply of eggs is now afforded by the early chickens which were saved from the March and April broods. It is only by having this done regularly year by year that we are able to insure plenty of eggs in winter, when old hens have ceased laying and do not begin again till spring.

MR. W. J. MURPHY, CLONMEL.

THIS is a familiar name to readers of horticultural and agricultural literature. A portrait of Mr. Murphy appeared in *The Irish Farm* of the 14th inst., with the following appreciative remarks:—

“Mr. W. J. Murphy, whose portrait we give to-day, has been one of our correspondents in both the farming, gardening, and industrial departments for many years. He is a graduate of the Government Farming Institute at Glasnevin, where, in open competition, more than twenty years ago with eighty others, he won one of the first places. The Albert Farm, as it was called, had then for superintendent Dr. Kirkpatrick, who was succeeded by Professor Baldwin, now of the Land Commission. Here for more than two years Mr. Murphy had the benefit of seasonal lectures also from W. K. Sullivan, Ph.D., now President of the Cork Queen's College; Dr. Hodges of Belfast; Dr. Moore, Ph.D., R.D.S., Botanic Gardens; James McDonnell, M.A., and many other eminent men in various spheres and subjects. A machine accident at this time deprived him of his left hand and seriously interfered with some ‘high hopes and pious intentions’ then entertained. A man of less energy and independence of character would have gone home to his father's farm in Carlow, looked after the cattle, or ended his days in some listless occupation. He faced the world, took the first position that offered, and was appointed head master and agriculturist to the Local Board of Clonmel just twenty years since. Instead of settling down to a hum-drum official existence, Mr. Murphy has spent his vacations in acquiring topographical and other knowledge, and adding to a well-stocked fund of general information, especially on gardening, farming, and collateral matters. He wields a versatile, graphic, and fluent pen, combined with considerable grasp of observation. In all his correspondence, so far as we know, it may be repeated of him, he never lost a friend or made a foe—if he cannot serve mankind in general, or individuals in particular, he will do them no harm; and this is no small commendation in those exciting times.”

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min	In sun.	On grass		
1885. November.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday 8	30.366	41.2	40.1	N.E.	43.5	46.2	32.1	48.1	23.5	—	
Monday 9	30.313	44.6	43.3	N.E.	43.7	46.0	41.3	47.4	41.1	0.046	
Tuesday 10	30.317	44.2	43.9	E.	44.2	47.2	42.9	48.6	42.0	0.049	
Wednesday ... 11	30.292	41.6	41.3	N.E.	44.7	47.4	40.8	48.6	40.9	0.010	
Thursday 12	30.230	42.8	41.4	N.E.	44.6	44.7	41.2	45.3	41.0	—	
Friday 13	30.045	43.4	42.8	N.	44.3	48.8	41.7	52.6	49.4	—	
Saturday 14	29.741	46.4	45.6	S.W.	44.8	49.2	43.1	54.1	37.4	0.112	
	30.180	43.5	42.6		44.3	47.1	40.4	49.2	38.0	0.217	

REMARKS.

8th.—Dull, with a little drizzle in evening.
9th.—Dull morning; drizzly afternoon and evening.
10th.—Drizzly day and evening.
11th.—Drizzly all day.
12th.—Very dense high fog; gas necessary all day.
13th.—Cloudy, with fog in morning; fine afternoon; foggy evening.
14th.—Wet up to noon, then fair; fine evening.
An exceptionally dull week, with fog and cloud, and of course very small range of temperature.—G. J. SYMONS.



COMING EVENTS

25	TH	Royal Society at 4.30 P.M.
27	F	Quekett Club at 8 P.M.
28	S	Royal Botanic Society at 3.45 P.M.
29	SUN	FIRST SUNDAY IN ADVENT.
30	M	
1	TU	
2	W	Society of Arts at 8 P.M.

WREATH-MAKING.

I HAVE been tempted to offer a few remarks on making memorial wreaths, seeing that their use has now become so popular. It is indeed a prominent branch in almost every nursery establishment, and one which is rapidly on the increase. It is not my intention in these few remarks to lay down any hard-and-fast rule, as this is next to impossible, and will depend to a great extent on the taste for floral arrangements which the operator has acquired. I wish to assist the younger members of the gardening community, especially those who, being in private establishments, do not get the insight into this work as do those who are educated in nurseries. Thus a few remarks on the rudiments of wreath-making generally from a practical worker may prove helpful.

The first step after having decided the required size of the wreath when completed will be to form a circle, which is most frequently used, and for which I have adopted the name of "skeleton." These skeletons are very deceptive, and it is one of the commonest errors with the uninitiated to make these much too large, and if the supply of flowers be somewhat scant the wreath in turn will present a very lean appearance. With a view of overcoming this I will briefly cite one or two examples. Presuming, then, that a wreath when complete is required to be about 12 inches in diameter, the size of the skeleton on which to build it should not exceed 6 inches in diameter when flowers such as Chrysanthemums and Camellias are in season, but which may be increased to 7 or 8 inches when choice flowers, as double Primulas, Bouvardias, Roman Hyacinths, and Lily of the Valley, are employed. The diameter of the first-named may be a surprise to many; it is, however, fully justified by experience, and is more readily understood if the breadth of a very ordinary Chrysanthemum, Camellia, or Eucharis be taken into account; with a moderate-sized flower of either of these, and some smaller sprays to furnish the sides, and with Fern fringing the inner and outer margins, it will be seen how easily the size may be increased twofold. My idea of a full-sized wreath when finished and ready for use is 15 or 16 inches in diameter (above that size I term them specials), and for this size a skeleton of 9 inches diameter will be ample.

Having shown, then, something of how the size may be gauged, we must now construct the skeleton, and for this purpose galvanised iron wire will be found to answer well. Having got this into shape and of required size, next secure a hazel or willow to it and round the interior. This will prevent the wire revolving in the hands of the operator, and which frequently misplaces a flower or two, thereby causing inconvenience and annoyance. Having secured the hazel or willow to the wire, some fresh green moss should be bound tightly over it with small twine, which when finished should be slightly flattened. When this is done a firm surface about an inch wide will be the result, and all will be ready for placing the flowers. There are several other ways of preparing these skeletons, some binding them with cotton wool,

which I object to, on the ground of a green base for the flowers to rest upon being more suitable. Further, when the bulk of the flowers are arranged it frequently happens that by inserting small choice bits here and there a great improvement is made in the wreath. This may be done easily where moss is employed as a foundation, having a piece of stem wire to pierce the moss, and doubling it back as it emerges from the opposite side secures it in position. When cotton wool is used it will not allow of wire passing through it. For these reasons, and for the fact that moss retains the moisture considerably longer than cotton wool, which robs the flowers of the little moisture which is about them, I am strongly in favour of a moss foundation. Wreath skeletons made in various sizes are sold by horticultural sundriesmen, but all I have seen are anything but suitable for the purpose. They consist of two wires arranged in circles at about 1½ inch apart, and fixed by about four cross wires. This leaves a large cavity with which it is difficult to deal, and also uses an immense amount of binding wire in the work of arranging the flowers. One of the simplest contrivances I have seen is made of block tin cut in circles about three-quarters of an inch in width, or they may be made of scraps and soldered together. In the latter way, though a little more trouble in making, they are firmer than when cut out in one piece. Any tinman will make them. I have used these in quantity in sizes ranging from 5 to 12 inches in diameter.

It may not be out of place for a moment to refer to the arrangement of a wreath, though, as I before remarked, much will depend on individual taste. Presuming, then, the flowers are cut, such as Bouvardias, Lily of the Valley, Roman Hyacinths, Gardenias, Tuberoses, Eucharis, Azaleas, and double Primulas will need wiring, and Camellias and Roses will need piercing, the former on account of the custom to twist off the flowers with no wood attached, hence stemless, and to prevent them from falling; and the latter to keep them from becoming too gaping. If at hand some small sprays of Cupressus Lawsoniana will be serviceable, and assist in the economising of Maidenhair Fern, which is generally a scarce article at this time of year. Begin the arrangement, then, by laying a spray of Cypress, and upon which place a frond of Maidenhair, the latter somewhat protruding and not too flat; then comes a Camellia, Eucharis, or Gardenia—or, in fact, any of the larger and more prominent flowers to occupy the centre, filling in the sides with smaller flowers. Lily of the Valley, Deutzia gracilis, and Roman Hyacinths do well for fringing the sides. Continue the use of the Cypress, and insert here and there a small spray of Fern, firmly binding them as you proceed, and using a small pinch of moss on the stems of the flowers. This will keep the wire from cutting the stems, and will also supply moisture to them. Always avoid a heavy arrangement and overcrowding, and allow as far as possible the flowers to assume their natural position. Use the flowers in as much variety as possible, and, if procurable, a few well-coloured sprays of Panicum variegatum will be found very pretty and effective jutting out here and there. It is productive, too, of lightness and elegance, which should characterise the arrangement throughout, and with it and Maidenhair Fern interspersed among the flowers a very pleasing and elegant wreath may be formed. In case of packing this is easily done by placing a stick across the skeleton, allowing it to rest on either side under the flowers, and attach a string to its centre; then make two holes in the bottom of the box, pass the string through and fasten securely underneath. It will travel safely thus, and the person unpacking it will see at a glance how it is secured.—J. H. E.

THE ONION AS A REMUNERATIVE CROP.

I AM induced to make the following remarks from reading the paper by "Utilitarian" in last week's issue of the Journal, "Estimate of Vegetables—Onions." He says:—"As a crop for

market Onions are important, if, indeed, it is not one of the most valuable from a paying point of view." I quite agree with him in this. The Onion has been a universal favourite from the remotest period of history, and at the present time there are few gardens in this country, or indeed in Europe, but where it is cultivated and enjoyed by all. Its cultivation is well known, and great crops are raised annually by market and private gardeners all over the country; and yet, to judge from the enormous quantities that are imported from the Channel Islands, France, Spain, and Portugal, we do not grow sufficient to supply the home demand. As a field crop I think there are few that pay better. When well grown the produce will yield from £50 to £60 per acre, with not much more labour than that required to grow Turnips. I think that farmers in the present depressed state of agriculture should turn their attention to this crop. If it pays market gardeners to grow Onions at a rent of £8 and £9 per acre it will surely remunerate farmers who have only to pay from 30s. to 40s. per acre.

The Onion succeeds best in rich ground deeply tilled, but with generous treatment it can be grown successfully for years in succession on light soils when heavily manured. To insure a good crop it is necessary that the seed should be sown as early in February as the state of the soil and weather will permit. When the soil has been thoroughly prepared the seed should be sown thinly in shallow drills 1 foot apart. After it has been covered in, and the ground raked over all the labour the crop will require after until ripe is frequent hoeings between the rows to keep weeds down. The plants will be much benefited by a sowing of soot or wood ashes. Some time in May it will also act as a preventive against maggots injuring the crop.

For the field or the principal garden crops there is no system I know equal to that of thin sowing and allowing every seed that germinates to grow. When this method is adopted the labour of thinning is saved, and the produce is greater in weight and as good in quality and keeping properties as those sown thickly and thinned out afterwards. I have practised thin sowing for the last fifteen years, and can thoroughly recommend it to others. Several market gardeners in this neighbourhood have adopted the system, and prefer it now to all others. They find it pays them better to sow thinly and allow the plants to fight the battle of life for themselves in preference to thinning them out to any given distance.

Onions can be grown to a greater size by sowing the seeds in pots, pans, or boxes in the middle of January, and placing them in a gentle heat, and keeping the plants growing in frames till the middle of April, when the weather is mild, and then planting them out in rows 1 foot apart, and 6 inches apart in the rows. The finest Onions I have seen grown in this country were exhibited at the Edinburgh International Show some three years since by Mr. Murray of the Gardens, Culzean Castle, Maybole, Ayrshire. The seed was sown in boxes in January as described—the variety Crauston's Excelsior, and for size and finish they equalled the best imported Spanish Onions.—A PETTIGREW, *Castle Gardens, Cardiff*.

NEW CHRYSANTHEMUMS.

LAST week a review of the principal French varieties of the past six years was given, and this may be now supplemented by a list of those that have been certificated in England during the same period. It may be noticed in passing that some of the French raisers have occasionally sent out different varieties under the same name, a practice which cannot be too strongly condemned, as it obviously must lead to much confusion. We have an instance this season in Roseum superbum, for which Messrs. Jackson & Son obtained a certificate at Kingston in 1883 for a variety bearing the same name, but quite distinct from it if my memory serves me rightly. Referring to the list given by M. Ghys and noted last week, it appears that in 1880 Lacroix sent out a variety named "Rosa superba," described as soft rose-coloured, and in 1883 Delaux announced a variety named "Rosea superba," "rose lilac shaded and pointed with yellowish buff." It is probable that the one certificated at Kingston in 1883 is Lacroix's variety, and that of this year is Delaux's, but I should like to have some more information on this matter. L'Aurore Boréale of Lacroix (1881) and of Delaux (1884) seems to be another instance of the same kind. Carmen de de Reydellet (1884), a Japanese, and Carmen of Delaux (1884), a Chinese, afford another example; Flocon de Nieve of Lacroix (1881) and the same name of de Reydellet (1885), Tendresse of Lacroix (1881) and of de Reydellet (1885) furnish other examples of the same practice. According to the descriptions given by M. Ghys these are all distinct, but I have not the raisers' descriptions to refer to.

Sending out the same varieties under different names is certainly much more culpable, and Mr. Harman Payne has done well in

clearing up what appeared very much like a case of this kind in Mdle. Lacroix and Pureté, which seemed to be identical. From his note it may be fairly supposed that there are two distinct varieties under these names, but what has been generally grown as Mdle. Lacroix is really the true Pureté, while the former is either not in cultivation here or scarce.

Turning to the records of varieties certificated in England we find that in 1879 no Chrysanthemum was so honoured at the leading London shows, while in 1880 there were only two, both English raised—namely, Lady Selborne (Japanese) and Angelina (incurved). In 1881 also there were only two certificated—Lady Selborne again and Rex Rubrorum (Japanese). Five were certificated in 1882—incurved, Lord Wolseley; Japanese, F. A. Davis, since found to be identical with Jeanne Delaux and M. Desbrieux; Pompons, La Petite Marie; and reflexed, Crimson King. The year 1883 saw twelve additions to the list of certificated varieties, comprising the following—Incurved, Bendigo, Jeanne d'Arc, and Lord Alcester; Japanese, Comet, M. Astorg, Mdle. Lacroix, Mons. Dufour, Mons. Henri Jacotot, Salteri, and Roseum superbum; Pompons, Mons. Darnaud; and reflexed, George Stevens.

A most rapid advance was made in 1884—a greater number of French varieties was imported and brought before the Floral Committees of the Royal Horticultural Society and the National Chrysanthemum Society, no less than twenty-five being deemed worthy of certificates as follows—Incurved, Lord Wolseley (also certificated in 1882); Japanese, Beauté des Jardins, Carmen, Criterion, Fernand Féral, Flamme de Punch, La Bien Aimée, La Pureté (now decided to be identical with Mdle. Lacroix), Madame de Sevin, Mdle. Lacroix, Mons. Astorg, Mons. Tarin, Roseum Pictum, Souvenir du Japon, and Val d'Andorre; reflexed, Cullingfordi (also admitted this year as a Japanese at the National Society's Show); Japanese Anemones, Fabian de Mediana, Mdle. Cabrol (raised or sent out by M. Marrouch in 1879), and Sœur Dorothee Souille, still older according to M. Ghys, having been sent out in 1877; Pompons, Anais, Nellie Rainford, Star of Whyke, and Val d'Or; single, White Perfection.

After such a number as this it might have been expected that a lull would follow, but this has not been the case, for twenty-four have been certificated up to the present time this year, and it is quite possible that the National Society will find some others worthy of honour at their last two meetings of the season. The awards of the Floral Committee during the past two years have added materially to the number of certificated varieties, and it is an open question if they have not distributed these honours too liberally.

It is at least evident that other societies have been more sparing in this respect, for in 1884 the National Society's Committee certificated thirteen varieties, two of which were honoured elsewhere; this year the same body has certificated nineteen varieties, four gaining similar awards at other shows and meetings in London. Thus out of a total of thirty-two certificates only six have been confirmed by other societies. Of course it may be represented that many more novelties have been submitted to this Society than elsewhere, which is undoubtedly true, but in any case it behoves the Society to be economical with their certificates, or they will soon lose the standard value they ought to possess.

CHRYSANTHEMUMS CERTIFICATED IN 1885.—JAPANESE.

BELLE PAULE (E. Molyneux and Jackson & Sons).—This has got into cultivation under the erroneous name of Belle Pauline, that given above being the title under which it was sent out by M. Marrouch in 1881. It was not, however, until this season that it attracted much attention, Mr. Molyneux having shown it exceedingly well at the Crystal Palace and Kingston, six grand blooms being staged at the latter Show in the class for six of one variety, Japanese. The florets are flat, drooping or twisted, white margined with lilac-purple very clearly defined, and this gives a most distinct character to the variety. It will probably be in great demand this season. Certificated at Kingston.

BRISE DU MATIN (Forbes).—The blooms of this are well adapted for exhibition, being large and of fine substance; but it has been shown in few stands. It is one of Delaux's 1884 varieties, and has broad recurring florets of a bright rose tint. Certificated by the National Society.

JUPITER (J. Veitch & Sons and N. Davis).—Of rich colour, a fine shade of reddish crimson, the florets slightly fluted and twisted in the centre, the under surface being purplish. (Delaux, 1885). Certificated at Kensington and by the National Society.

L'ADORABLE (J. Veitch & Son and N. Davis).—A large bloom with flat broad florets, opening bronze and coming bright yellow afterwards. Certificated by the National Society.

LAKME (N. Davis).—A decorative free-flowering variety with blooms of good substance, golden-orange in colour. Very orna-

mental as a conservatory plant. (Delaux, 1885). Certificated by the National Society.

L'ÉBOURIFFÉE (H. Cannell & Sons).—Blooms large and effective, very bright yellow. I have seen very little of this, and cannot express an opinion as to its merits. It is one of de Reydellet's 1885 varieties. Certificated by the National Society.

L'ILE DES PLAISIRS (Forbes).—A pretty variety, with blooms of medium size, the florets fluted or nearly flat, bright bronzy red on the upper surface, and with a golden reverse. Certificated at Kensington.

MADAME JOHN LAING (J. Laing & Co.).—An excellent variety. The blooms large and full, with broad flat florets, white, with a tinge of rosy purple or blush. It is a capital exhibition variety. (Delaux, 1885). Certificated at the Crystal Palace.

MAIDEN'S BLUSH (G. Stevens).—A seedling raised from imported seed at Mr. Stevens' Putney Nursery, and has been there tried for two seasons satisfactorily. The florets are broad, flat, forming a full, large, handsome bloom blush-tinted or creamy white. The plant is strong in habit and free. Certificated at Kensington and by the National Society.

MANDARIN (N. Davis).—An early-flowering variety, very floriferous, and will prove useful for decorative purposes. The blooms are of good size, creamy tinted, with a tinge of rose. Certificated by the National Society.

MARGOT (Forbes).—This variety (Delaux, 1883) was certificated last year, and this award was confirmed at the meeting of the National Society on October 14th this year. It is a charming variety with fluted florets of a rich rosy colour. The bloom large and of good form.

MONS. FREEMAN (Wright).—Very distinct in colour, a peculiar lilac pink or peach, the florets slightly fluted and recurved, except at the points, which are indented or turbinate and turned upwards. In the early stages the florets are incurved so much that the variety resembles a small incurved bloom. When first shown it did not appear first-rate, but it improved later in the season, and though not large it is of good substance, and would make a telling colour in a box of Japanese. Certificated by the National Society.

MONS. JOHN LAING (J. Laing & Co.).—Florets fluted, recurved, and twisted, bright bronze red, very rich and dark in some blooms, but occasionally lighter with a yellowish tinge. The blooms are of good substance, and it will probably make a useful exhibition variety. (Delaux, 1884.) Certificated at the Crystal Palace.

MONS. MOUSILLAC (Forbes).—One of Delaux's varieties sent out in 1883. The blooms are large and full, of a most brilliant reddish crimson colour. Certificated by the National Society.

MONS. A. VILMORIN (J. Veitch & Sons).—A medium-size bloom with fluted slightly recurved florets, varying from orange-red to nearly yellow. It is pretty and free, but appears rather too small for exhibition; more after the style of *L'Or du France* or *L'Or du Rhin*. (Delaux, 1885). Certificated at Kensington.

ROSEUM SUPERBUM (Jackson & Son).—This is referred to in the former portion of these notes, and, as there remarked, seems to be distinct from the variety previously certificated under the same name. The florets are fluted and recurved, or slightly twisted, forming a medium-sized bloom, the colour rose with a yellowish tint. Certificated at Kingston.

VAL D'ANDORRE (Wright).—A handsome variety, which has come out remarkably well in some of the best stands of Japanese at the leading shows. The florets are flat and broad, or sometimes slightly fluted, bright red on a yellowish ground, the blooms large, full, of good substance, and the distinct colour renders it valuable both for exhibition and decoration. Certificated at Kensington and by the National Society.

MISCELLANEOUS VARIETIES.

All these were certificated by the National Society.

BELLE NAVERAISE (Wright).—A hybrid with something of the incurved character, but the florets erect, pure white, forming a good-sized bloom.

BRONZE QUEEN OF ENGLAND (J. Carter & Co.).—Exactly the same style of bloom as the ordinary Queen of England, but of a true bronze colour.

FIBERTA (H. Cannell & Sons).—A Pompon; flowers bright golden yellow, of moderate size.

MRS. MARDLIN (Mardlin).—This is a pretty Pompon of a clear pale rose tint. It is a sport from President.

POMPONUM (N. Davis).—An early-flowering free Pompon with orange-coloured blooms of medium size.

YELLOW GLOBE (W. Martin).—A bright golden yellow sport from White Globe, exactly the same style of bloom, and very promising.

As a selection of the best of the preceding I should name the following:—*Belle Paule*, *Brise du Matin*, *Jupiter*, *Madame John Laing*, *Maiden's Blush*, *Margot*, *Mons. John Laing*, and *Val*

d'Andorre. These are excellent varieties, which have been well proved this year for exhibition purposes. All the others are useful for decoration, the early Japanese particularly so, as they afford blooms most abundantly. There is no doubt that the Japanese are rapidly gaining popular favour, and while the florists still attach the greatest value to the incurved, the public admire the less formal and brighter coloured type. For cutting or general decoration the Japanese much surpass most of the incurved, freely grown specimens of the former being exceedingly ornamental. Several of the *Anemones* are much appreciated for this purpose, and the single varieties are also very graceful.—LEWIS CASTLE.

ESTIMATES OF VEGETABLES.

CELERY.

TAKING the cost of manure, preparation of the plants, and labour entailed, this is not a very remunerative crop, at least not as far as I have experience; still, its cultivation is one of the very best preparations of the ground for the succeeding crop, as the ground gets well manured, deeply stirred, and exposed to the ameliorating influences of the atmosphere. Besides, it can be taken, and usually is, after *Broccolis*, spring *Cabbage*, or early *Peas*, so that between the two crops the result for the year is not discouraging. In some districts it is a practice to make the trenches in spring, and plant the spaces between with early or Ash-leaved *Potatoes*, which crop is off before the Celery needs much cultural attention; indeed, the *Potatoes* are earthed from the trenches intended for Celery in some instances. In the fen districts the trenches are so arranged as to be flooded with water at will from the dykes; and as Celery likes nothing so much as a broiling sun and plenty of water, it makes rapid progress in the months of July and August, when that in gardens can barely be kept growing in hot weather. The fen Celery is prime in late summer and on to early winter, bringing prices that the garden-grown produce fails to reach, though entailing twice the labour in cultivation, especially in watering. I do not find garden Celery pay until winter is fairly set in, and the later the better the returns. It is tantalising to hear of Celery bringing 3d. per head to the retailer, whilst the grower gets 6s. per dozen bundles of a dozen heads each. He has rent, taxes, manure, and labour to provide out of a halfpenny, whilst the middleman with not a tithe of the outlay pockets 2½d. Even if the retailer gets his penny to the grower's halfpenny it is not difficult to discern on which side is the advantage, and form no slight indication of what presses unduly on the industrial energy of the grower.

The varieties of Celery are numerous. The best for market are those combining size with high quality. I find none equal to Wright's *Giant White*. It is large, robust, solid, crisp, superior in flavour, and very hardy, good alike as an early and late variety. Of pink or pale reds *Ivery's Nonsuch* for autumn and early winter use carries off the palm, being large, solid, fine-flavoured, in every respect excellent. *Leicester Red* or *Major Clarke's* is an excellent variety, and keeps well, being the best red Celery in cultivation for any purpose. Those three I can strongly recommend, along with *Sandringham White*, where a white Celery is required late in spring, as I find it the Celery for keeping a long time fit for use, having had it good as late as April. I ought to state that *Williams' Matchless Red* is a capital variety and one that winters well; indeed, last year it brought 9s. per dozen bundles of six each, when other varieties had to be rejected from the number of their decayed heads. *Winchester Red* is also apparently an excellent variety, and for private consumption is the one chosen to go with *Sandringham*, as I find these stout short-growing sorts in better repute than the larger varieties, and as a pink is sometimes wanted I have it in unimpeachable quality in *Sulham Prize*.

White Plume I had this season for the first time, but I can say but little in its favour; indeed, I had not a plant in a score, hardly one in fifty, that was *White Plume*, though I had the seed from one of the best seed firms, and who have served me very satisfactorily for many years. The crop turned out well. I had nearly a thousand of it, and setting aside the plants of *White Plume* which were of no account from a marketable point of view I found it gave solid heads, crisp and good, blanching readily. In what it differs from *Cole's Superb Crystal White* I failed to discover, and whoever has grown this need not be long in finding *White Plume*, especially if he will take to sowing old seed. In fact, I sent you over twenty years ago a white Celery found amongst plants of the then noted *Manchester Celeries* which you were good enough to state in your correspondents' column might be useful for decorative purposes. If *White Plume* is no better than I have it in the miserable self-blanching plants I fail to see its use or in what way it is likely to be ornamental, and it certainly will not be grown again by—UTILITARIAN.

JUDGING PEARS AND GRAPES AT THE BATH SHOW.

In the report of the above excellent Show your reporter says that "Mr. Nash was also first in the class for any black Grapes, but was some-

what favoured, as his bunches of Alicante, though very fine, were not well coloured. Mr. W. Taylor was again second with the same variety, small in bunch, but beautifully finished, and that Mr. Chedzey was third with fine bunches of Alicante, which 'many' seemed to think should have been first." As one of the Judges who made the awards in the fruit classes I cannot allow this statement to pass unnoticed, although I would, for obvious reasons, prefer not being called upon to justify our decisions. Mr. Nash's bunches were very fine, compact, and even, but slightly deficient in colour in the lower part of the individual bunches. On the other hand, Mr. Taylor's bunches were, as stated, smaller—considerably smaller—less compact, being gappy, and better coloured, but slightly rubbed. Hence their being placed second instead of first, which position they would have occupied had the bunches been more compact irrespective of size, or of the fact of their having been rubbed. In short, the point or two which Mr. Taylor's gained over Mr. Nash's bunches in colour they more than cost in size and symmetrical appearance; and what Mr. Chedzey's bunches gained over Mr. Nash's bunches in size they more than lost in their "dirty" and somewhat loose appearance, as well as want of colour. Yet these are the bunches which your reporter says were "fine" and should have been first, a position which, curiously enough, he had already hinted ought to have been accorded to the second-prize stand. It may be interesting to note that Mr. Taylor and Mr. Nash occupied the same positions with the same Grapes at Bristol the following week, the awards being made by such noted fruit-growers as Mr. Austin of Witley Court, and Mr. Bethel of Ashton Court.

Now for the "Pear question." In reference to the awards in the Pear classes your reporter says that the "Judges followed the 'rather unusual' course of awarding the prizes to the generally evenest in appearance, all being fit for table;" adding, "As a consequence that much the finest collection, staged by Mr. Bannister, was passed." The fact is, the collection referred to consisted of six dishes of six fruits each, the fruits on three dishes, including good examples of Pitmaston Duchess, were large, while those on the other three, including one of unripe Easter Beurré, were considerably less, presenting, I may say, by way of illustrating the effect thus produced, as well as my meaning, the appearance that a stand of six Chrysanthemum blooms consisting of three large-flowered varieties and three Pompons would produce. Your Chrysanthemum-growing readers know perfectly well that such a stand if placed in competition against several other stands of a like number of even-sized blooms of a size between the two varieties indicated would, in consequence of the want of uniformity in the collection of blooms, be also "passed," yet this practical standard is what your reporter terms "the rather unusual course to follow" in connection with ripeness, quality, and finish of exhibits. Our awards throughout the fruit classes were quite consistent with this "standard of excellence" with which we started. In the collection of six varieties of Pear class each fruit in the prize lots was ripe, the fruits being even and of good quality, and the collective dishes of fruit uniform in point of size.

In conclusion, I venture to say that if such admittedly clever and successful fruit-growers and exhibitors, and therefore excellent judges, as Messrs. Coleman and Wildsmith had re-judged the two classes in question, or, indeed, all the fruit classes at the recent Bath Show, they would not have disturbed the awards which were made by my colleague and myself. I am extremely sorry to be obliged in defence of my own reputation as a fruit-grower and judge to point out in public the defects of any gardener's exhibits. But, on behalf of my coadjutor and myself, I could not allow such statement, made with the best intentions no doubt, to pass unnoticed. Personally, I am always pleased and prepared, if needs be, to give a reason for whatever I do, and do not in the least mind being called upon to justify any awards which I make conjointly with a brother gardener. This, however, is not the case here; it is only an unintentional accusation of "favour" and want of judgment in those who made their awards conscientiously to the most meritorious exhibits.—H. W. WARD, Longford Castle.

THE PRIMULAS.

(Continued from page 420.)

P. FORSTERI, Stein.—An interesting hybrid between P. super-minima × hirsuta, Stein. When apparently old plants were first introduced from its native habitat, it appeared nothing more than a strong P. minima, but with a little over two years' cultivation the leaves have attained four times their original size. In shape and toothling the leaves are those of minima, with the addition of hairs, which it takes from the other parent. Flowers rose-coloured, handsome, and freely produced. Our plants have a western exposure in rich leafy soil mixed with limestone; they are robust and more than ordinarily healthy. It flowers in April and May. Native of Padaster in the Gschnitz Valley, Central Tyrol, where it was found by M. Obrist.

P. GÖBELII, Kerner, which Professor Kerner himself considers simply P. Auricula × viscosa, while M. Stein in his catalogue of cultivated Primulas writes it P. super-Auricula × viscosa. In the latter view we concur, as P. Auricula clearly predominates in the specimens now before us, which have just been imported from their native habitat, and may be taken as fairly representative of the wild type. In reference to the above species Prof. Kerner says, "On account of the close relation between P. daonensis, Leyb., and P. villosa, Jacq., it is quite natural that the hybrids raised

from these two species should resemble each other very much. The same characters which distinguish P. villosa from P. daonensis also distinguish P. Göbelii from P. Portæ = P. Auricula × daonensis. The leaves of P. daonensis are cuneate, and the abrupt apex set with large teeth of equal length, while the leaves of P. villosa are spatulate, obovate, their round apex set with teeth, the middle one of which is much longer than the rest. This character of the leaf of P. villosa is distinctly recognisable in those of P. Göbelii, and which seems to be the only real likeness to that parent. It is, however, a first-rate garden plant, and the ease with which it may be established on the rockery will soon make it a general favourite. The flowers are of a brownish violet, not unlike some of the garden Auriculas, handsome and freely produced in early spring. It is found growing along with its parents on Steiermark.

P. GLUTINOSA, Wulf.—A Primrose that taxes the ingenuity of most cultivators to flower in a satisfactory manner. It grows fairly well and appears quite healthy, but it will often go for two or three years without showing a single flower. We grow it in an almost perpendicular position between granite and in a soil composed of finely chopped live sphagnum, small pieces of charcoal, peat, leaf soil, and plenty of sharp sand. It should be planted so as to receive only the morning sun, and during the growing season it should be plentifully supplied with water; indeed too much can hardly be given. Care must, however, be taken that the drainage is quite free, as it quickly resents stagnant moisture in however small a degree. The plant grows about 4 or 6 inches in height. The leaves are obovate, glutinous to the touch, and finely serrated for about half their length down on both sides, and thickly covered with tiny glands. Flowers generally in pairs, almost sessile, with bracts much longer than the calyx; sepals blunt, and "sticky" like the leaves. The flowers when fully open are about an inch in diameter, deep lilac, often verging to violet. It flowered with us in April and May, and is a native of the glacial region of the Austrian granitic Alps, where it is found at elevations of 9 to 10,000 feet. It is well figured in Reichenbach's "Flora Germanica."

P. GRACILIS, Stein.—This is given as a cross between P. cortusoides × Sieboldii, Stein, and which means a cross between P. cortusoides and P. cortusoides var. amoena, Stein using the name Sieboldii, Morr., as being the older. It is a well-known plant, being cultivated in English gardens as P. cortusoides var. intermedia, and although differing little from the type it may find a place for variety's sake where slight forms are noticed.

P. GRANDIS, Trauttr.—For this Stein has coined the new sectional name of Fredinskya in honour of the introducer M. Fredinsky of the St. Petersburg Botanic Garden, and he remarks that were it not for the similar inflorescence to be seen in P. penduliflora and P. Palinuri it could be called a distinct genus, and for the credit of Primulas generally it is almost a pity it was not called something else. It is a robust grower, indeed even more so than denticulata and its forms, the leaves attaining enormous proportions, broadly ovate, with an irregularly notched and finely serrated margin. The scapes attain a good height, and carry an abundance of flowers, rose-coloured and curiously formed, but so small in comparison to the strength of the plants as to be disappointing and altogether unworthy a place in any collection unless as a botanical curiosity. Where grown it is best always to plant it out in the open, as it rarely flowers in pots. It flowers with us in May and June. It is a native of the western Caucasian Mountains at elevations of from 6000 to 9500 feet above sea level, and was figured in Regel's "Gartenflora" a few years ago.

P. HEYDEI, Watt.—This belongs to a set of very dwarf creeping or stoloniferous Primroses, natives of the Himalayas, and to which belong P. reptans, Hk. fl.; P. sapphirina, Hk. fl. and Th.; P. soldanelloides, Watt.; P. muscoides, Hk. fl., and others, all of which are of the same dwarf nature, only two or three being in cultivation at the present time. P. Heydei is a very distinct Primrose, forming little dense tufts, from which short leafy stoloniferous branches are emitted, and which soon take root, forming plants all round the parent, much as is shown in Saxifraga flagellaris and in Sempervivums. The leaves are small, sparingly mealy beneath, lanceolate in outline, abruptly and coarsely toothed. Flower scapes stoutish, carrying from five to over a dozen pale lilac flowers, each about half an inch in diameter, collected in a loose capitate head, also mealy, as are also the bracts at the base. In winter the leaves die down, leaving little buds, which must not be disturbed during their resting season, a little loose sand being a good protection. It seems most partial to soft sandstone, to which the tiny roots cling with a remarkable tenacity. It flowers about June. Native habitat Western Tibet, at altitudes of from 12,000 to 14,000 feet above sea level, also in Taglang. It requires a shady position.

P. HUTERI, Kerner, = P. Floerkeana × glutinosa, and also from P. salisburgensis × glutinosa, Kerner.—A very interesting hybrid, differing but little from P. glutinosa. A few of the

principal marks are its leaves not being glutinous, its smaller bracts, and differently coloured flowers. The leaves of *Huteri* are spatulate, with eleven to fifteen broad triangular teeth somewhat thickened at the tips, the middle one being longer than the others. The upper part of the flower-stalk is slightly glutinous, the two or three oblong bracts being broad and almost covering the calyces. The flowers are if anything larger than either the parents, violet-coloured, as in *Viola odorata*. It is thriving well with us in a peaty soil well mixed with small pieces of granite. It is found at various places in the Tyrol, but not over-plentiful in numbers. It flowers during April.

P. INTEGRIFOLIA, L.—Although a comparatively common plant both on the Pyrenes, Northern Italy, &c., where it studs the ground wherever it finds a bare slope in great profusion, it is not often seen in perfection in English gardens. In the majority of places it is generally found dwindling rather than increasing in strength, which we believe in a great measure to be due to insufficiency of moisture and free drainage; for when grown on the flat, well drained, and too rapid evaporation prevented by thickly



Fig. 71.—*Primula involucrata* (*P. Munroi*).

strewn the ground with pebbles, it flowers with great freedom. Though its increase is anything but rapid, it is in excellent health, which is one step towards it. A dwarf-growing plant, nestling close to the ground, and rarely with anything of a stem; leaves crowded in little rosettes, oblong elliptic, slightly dilated at the base, quite entire, and having a narrow cartilaginous margin in some cases and—notably in plants from the Albani Pass Engadine—without a few hairs; whitish underneath, and dull, not shining as in *spectabilis* on the upper surface. Scapes short, not more than an inch, bearing two or three lilac-purple flowers, broader than the length of the tube; calyx of ovate blunt sepals, surpassed by the narrow bracts. It was first introduced by Baron Sigismund von Zois of Laybach, and flowered in 1792 by Mr. Loddiges. It flowers in April. Lehman has figured a remarkable variety with toothed leaves, which we have not seen in cultivation. Syn., *P. Candolleana, Rech.*

P. INVOLUCRATA, Wall (fig. 71, reduced from plate 15, vol. xxxiii. of the "Botanical Register").—One of the most charming, and perhaps the commonest in gardens, of all the Himalayan Primroses. It was, we believe, first collected by Captain Munro at an altitude of about 12,000 feet above sea level, and owing to its high elevation perfectly hardy with us even in severe winters. It ripens seed with great freedom, and may be raised in almost any quantity; and if there is a possibility of any of the Himalayan Primulas natural-

ising themselves with us this is no doubt the one, the bed in which we had them growing last year being thick a month or two ago with seedlings. It prefers a free rich soil, where it will increase with great rapidity, apparently unmindful of shade or sunshine. As the leaves mostly die down during the resting season, leaving little buds, these had better be protected from birds, &c., as their scraping often damages them. Where fairly well established they flower all through the summer, and a large patch of their elegant and gracefully drooping sweetly scented flowers is a welcome sight either in the rocky or border. The leaves are 1 to 3 inches long, oval or oblong, slightly cordate at the base, and narrowed into a long wiry stalk. Leaves entire at the margins, rarely crenated, and free of meal. Scapes slender, often about a foot long, terminated with a loose head of from three to six drooping white flowers, about an inch in diameter with deep lobes, and a yellowish or orange eye; bracts linear, surrounding the base of the petioles, reflexed at the base, which is often bifid; calyx tubular, slightly inflated, and prominently three-ribbed. *P. Munroi, Hort.*, is given as a synonym of the above, and as there is a variety in cultivation with lilac or lilac-tinted flowers, and as the name is largely in use in gardens it will perhaps save confusion to preserve the name *Munroi* in a varietal sense, as the type has been described in the Indian Flora as having white flowers. It is figured as *Munroi* in the "Botanical Register," 33, t. 15.—D.

PERPETUAL OR SPINACH BEET.

THIS is proving a most valuable vegetable at the present time with us, as were it not for the above variety no Spinach could be had, with us at least, and I doubt if there are not many others in the same field. The Prickly Spinach is very backward owing to the dry weather in late summer and autumn. The seed lay a long time in the ground before germination took place, and when it did it was very slow. The Perpetual is not considered so good flavoured as the ordinary Spinach, but if a little extra attention is paid to the cooking it would go unnoticed at the table by many of the less keen judges. It appears strange that such an easily grown plant should be so little known amongst gardeners, as many have exclaimed when passing through the garden here, "What is that you have there?" when the reply given was Spinach Beet. Here Spinach is most appreciated in early spring and in the autumn and winter. When other choice vegetables are plentiful in summer Spinach is overlooked; this is to our advantage, as the ordinary varieties behave very indifferently on our soil, and I have known the same to be the case in other gardens. It is common in many places to see this vegetable assuming wonderful size, requiring much thinning to do it justice, but it is not so with us.

We have tried artificial manures, lime, salt, wood ashes, soot, horse and cow manures, but all to no purpose in obtaining a luxuriant crop of Spinach. In future it is our intention to sow the round variety for early spring crops, and the Perpetual for autumn and winter supplies. Our seed of the latter variety was sown from the second week in May to the middle of June, and we have been able to pick quantities of leaves for some time; in fact, we could have picked all the summer had the demand rendered it necessary, and we hope to continue it for a long time yet to come. When this variety is grown strongly the stems can be cooked and used like Seakale; but I have only known it used as such in one or two instances, yet I see no reason why it should not become an established rule.—S. B.

CHRYSANTHEMUMS AT THE AQUARIUM.

THERE were many things which gave me an interest in the National Chrysanthemum Society's Show last week. It has, in its constitution and practical working, gone so thoroughly on the lines of the National Rose Society, that, as imitation is the most flattering, I could not but feel flattered that our plans, which I had so large a share in formulating, were considered worthy of adoption, and I was anxious to know how they worked. The Secretary, too, was the son of one whose kind and genial character one always recollects with pleasure, and I was enabled to visit the show in company with one who thoroughly appreciates the flower, and himself grows it largely. All these things made the day a very agreeable one. Mr. Holmes told me that the National Rose plan worked uncommonly well, and that he attributed a good deal of their success to their having adopted it.

I had heard a good deal of the season being late, and that one was not to expect the same excellence or quantity as had been seen in former years, but there was no evidence of falling off in either respect. The entries, I was told, were more numerous than ever, and if flowers are to be had finer and larger than those I saw, it is a marvel, as indeed many of them were; and here let me say I had a very pleasant surprise in seeing the wonderful blooms from my friend Canon Hodgson's garden. I question very much if his boxes of twelve were surpassed by any in the Show, and had a prize been offered for the best box irrespective of numbers, he would have stood a good chance. There was one great drawback. The weather was, to use a term expressed to me, "beastly." A thick fog was over everything, worse, I believe, on Thursday than on Wednesday. The Aquarium is a bad place for an exhibition, and on such a day it was very bad. However, we had an opportunity of seeing it before the fog was very thick, and although it dulled the colours, yet we got a pretty good idea of them.

Going out of the ordinary run of stages and boxes, the stands set up by Mr. Cannell of Swanley formed a notable and novel feature. The boxes were arranged with considerable taste, each variety being represented by about three blooms arranged in a triangle with fern and other foliage, on a bed of green moss. This was very attractive, and suggested to one whether boxes of trebles, as in the case of Roses, would not be a pleasing innovation. To those who do not grow the Chrysanthemum for exhibition this was a pleasing and novel exhibit.

Unquestionably the great advance has been in the Japanese class. Very few new incurved varieties are to be seen, and nearly all of them are sports from older varieties. The chief interest, as far as the general public is concerned, is centred in them also, and for one who stops to admire the incurved flowers there are twenty who admire the quaint forms and curious colourings of the "Japs," as I heard them familiarly called by some eager exhibitor. Amongst them, I think the most taking flower was Jeanne Delaux. It is the deepest in colour of all, and there was hardly a stand in which it did not come out grandly, and affording by its high colour a striking contrast to the other flowers. It was also shown under the name of F. Davis, there not being the slightest difference in the two flowers. Another very remarkable flower was the large Japanese-Anemone flower figured in last week's Journal—*Sœur Dorothee Souille*, more remarkable, I think, than beautiful. The same may be said of *Fabian de Mediana*, but the newer flower is more regular in the centre than it. These flowers form an entirely fresh break, and there is no knowing to what hybridisers may bring the flower, as it seems to offer such facility for hybridising, and to cross readily with the other section. Amongst other flowers in this section, *Beauté des Jardins*, very brilliant in colouring; *Belle Alliance*, with long drooping petals; *Brise du Matin*, an enormous flower, rose and white; *L'Or du France*, a very beautiful and brilliant flower, the petals hang down most gracefully, golden yellow, with brick-red markings, the reverse of petals dark violet. It is very distinct, and one that is sure to please most people. *Madame Clemence Audiguier* was another flower that was shown in grand style and is one of the largest and finest flowers in growth. *Thunberg*, *Soliel Levant*, *L'Or du France*, *Madame Levin*, *Fabian de Mediana*, and *Fernand Feral* were all much admired. I have not mentioned the incurved, as we met with but few that are not well known, *Lord Alcester* and *Lord Wolseley* being amongst the best.

More interesting to me were the plants. We know to what lengths the dressing of these flowers is carried, so much so that I fear very much the success of the exhibitor depends as much upon the dresser as it does in *Picotées* and *Carnations*. In some instances a wide circle is placed underneath the drooping Japanese varieties so as to give them greater size. The Society is endeavouring to do away with this as much as possible, and for this purpose offered a prize for a support which might prevent the flowers being pushed up in the centre; and although the support patented by my neighbour, Mr. Foster of Ashford, has much merit, it was considered as not coming within the object of the Society by not preventing this. In the plants exhibited there is not so much room for this, nor are the flowers so monstrous as those which are exhibited as cut blooms. There were amongst the groups exhibited many which were the very model of good cultivation, the plants well clothed down to the pot, no sign of mildew, and each carrying its full share of bloom equally arranged all over the plants. The groups of Mr. Stevens and Mr. Davis were very fine, but it was amongst the class for nine varieties that I think the best were to be found. They were about 3 feet high and 3 through, and there was a plant of *George Glenny* amongst them which seemed to me the very perfection of what a pot plant ought to be, far more interesting than the enormous specimens 6 feet through which were set up. Even with plants such as these it would require a considerable amount of glass to grow them, and while we small people look on with wonder, we feel that we must be contented with doing things on a much smaller scale; still as proofs of what skill and intelligence can effect these plants were most interesting.

Very rightly there were few certificates awarded. The rush of new Japanese varieties is very great, and the quantity of varieties, and now that the continental raisers have gone into it, we may expect the list to be added to every year. The *Tweedledums* and *Tweedledees* will be numerous, and therefore great caution ought to be observed in recommending new varieties.

I have said nothing about the other exhibits, fruit, vegetables, &c., and have only given these sketchy impressions of the Chrysanthemums, a flower that, more than any other, accommodates itself to all situations and rewards the most ordinary care, while it generously and gratefully accords its fullest favours to those who treat it well.—D., Deal.

NOTES ON HARDY FRUIT.

American Cut-leaved Blackberry.—As showing the value of this useful Blackberry, Messrs. Cheal & Sons of Crawley have exhibited at various shows during the present and past seasons sprays of ripe fruit as cut from the plant, to indicate its large size and productiveness. It deserves all the praise they have bestowed on it. Whilst on a visit to their nurseries I was shown the plants the sprays of fruit were cut from; they are growing behind the north side of a wooden fence, and were literally covered with the remains of fruiting clusters.

Good Apples.—The following good Apples are highly recommended by Messrs. Cheal, and are considered by them to be deserving of increased cultivation:—*Egremont Russet*, *Lane's Prince Albert*, *Lady Henniker*, *New Hawthornden*, and *White Melrose*.

Anent the question of growing too many varieties, it would be well if

those who advance this notion would name two or three varieties, so that we should know what to grow. Now that hardy fruit culture is extending we may be able to ascertain what are really first-class varieties for all seasons and purposes after the lapse of a few years, as it is quite evident that many varieties that have been almost in obscurity, or have not had a fair trial, are now being planted largely in different parts of the country, and will have an opportunity of proving their worth similar to the *Ribston Pippin*, *Cox's Orange Pippin*, *Blenheim Pippin*, *Dumelow's Seedling*, *Keswick Codlin*, *Lord Suffield*, and *King of the Pippins*.

Lifting Fruit Trees.—This subject cannot be too prominently brought before the gardening public, as it is an excellent practice. It is an old saying and a true one, that "A proper training in youth is a forerunner of good in after years." If young fruit trees were carefully lifted and replanted periodically in the first few years of their existence, we should not hear of so many cases of canker and unfruitfulness as are now recorded. When young trees are replanted carefully and early in the season it does not affect their fruiting in the least, and if a surface dressing could be given every season afterwards with farmyard manure, very little attention would be required as regards root-pruning.—A. YOUNG.

WINTER PROTECTION FOR TENDER PLANTS.

THE sharp frosts we had a few days since will make many people anxious to have everything secure in case severe weather sets in shortly. Many beautiful plants are lost yearly which might have been saved if only very slightly protected. I am speaking more particularly of those growing in borders, &c., as the same plants if growing in pots are easily removed to cold pits and made safe; but it is impossible to see the full beauty of many plants when grown in pots, and hence planting out becomes almost a necessity. Take, for instance, *Aloysia citriodora*, *Myrtles*, *Tea Roses*, the smaller varieties of *Fuchsia*, such as *gracilis*, *globosa*, *corallina*, &c., the beautiful *Coral Plant* *Erythrina crista-galli*, *Salvias patens* and *fulgens*, and many others, which are not seen to perfection unless growing freely. It is not always advisable to lift these from their positions. The question is then, Which is the best way to preserve them from severe frost? For those that can be cut down near to the surface of the ground with advantage, I have found nothing to equal coal ashes, placed from 4 to 6 inches thick all over the crowns, and wide enough to cover the principal roots. Next to this, perhaps, comes sawdust in efficiency, and it has also the advantage of checking the ravages of slugs in the spring more than the former substance, as from its lighter nature it does not get beaten down so easily by heavy rains, but as a protection from frost only it is not so good. Then we have cocoa-nut fibre, rough leaf soil, short litter, and many others, amongst which I should think cork dust would prove one of the most useful, although I have never had the chance to try it.

So much for protection of the roots; but besides this it is in many instances well to try and preserve the tops also, and even if this is immaterial they should be left on until frosty weather is over, as if cut down, as in *Fuchsias*, for instance, when green in the autumn, the frost will work down the pith much further than it would otherwise do. For this purpose straw drawn out straight and placed in as sharp a conical form as possible is often very handy in the case of beds of plants. A good covering of quite dry Beech or Oak leaves, shaken among the tops and made as waterproof as possible with straw or mats, is very useful for deciduous plants. Dry bracken is also a very useful protection, especially for standard *Tea Roses*, &c., a handful being tied on to cover the junction of stock and scion, and as much of the head as possible. To get this in its best form it should be cut previously to losing its green colour in the autumn. Branches of thick evergreens, such as *Spruce*, *Yew*, *Portugal Laurel*, &c., are also very efficient.

I have seen a sample of a new material for protecting, which appears just what is wanted for some purposes; it is called dressed scrim, and looks like canvas dipped in Stockholm tar. I am told it was brought out at the suggestion of Mr. Rust of Eridge Castle. It appears likely to excel anything we have as a covering for pits and frames, but is not generally known in the trade. I believe it is made in Cornwall.—W. H. DIVERS, *Ketton Hall*.

VEGETABLES AND THE FROST.

WITH us the winter has set in earlier than I have previously experienced. From November 14th to 17th a high wind has blown from the north-east, and as we have had from 6° to 10° of frost nightly, it has caught vegetation very keenly. Those who look ahead will always be prepared for severe weather any time after November begins, but as mild autumns have not been uncommon of late years, a severe one may find many unprepared. The best way to deal with vegetables is to protect them from the first, and not allow them to be exposed for a few nights to the frost, and then try to remedy the injury. Cauliflower will soon suffer. If the smallest heads are browned by the frost it is all over with them. The only way is to cut every one that is ready for the table on the first frosty night, and go over the others daily to break some of the leaves half through, and turn them down over the heads. Another way is to gather all the leaves together over the top of the heart, and bind them there with a piece of matting or willow.

Early greens are the hardiest of all. They do not require

any attention, neither do Leeks. Turnips which are not fully developed should have a quantity of soil from each side drawn up over the bulbs before the soil becomes frozen. Savoys droop in the time of frost, but they are rarely injured, and the frost generally makes them sweeter. Brussels Sprouts are not easily injured, although frost does not benefit them. The leaves are sometimes taken almost all off with the alleged object of exposing the sprouts to the sun, but they develop as well without this, and the side leaves are of great use in protecting the sprouts during severe frost. Cabbages droop as much as anything with the frost, but they soon recover after a thaw, though in the case of a very severe frost young plants are always benefited by having the earth drawn up to the stems. Lettuces and Endive of a large size are easily injured, and should either be taken up and packed closely together in frames, or be covered where they are growing with a thick layer of straw or fern. The lifting plan is the best. Young plants for a spring supply are hardier, and they will bear much frost without being injured. When they require protection they should be covered where they are growing, and not lifted.

Celery is easily injured, and when once it is softened by the frost it will never come right again. When the last earthing-up has been given, some fine ashes are put round the stems to the depth of 4 inches, and then 12° of frost will not injure it. The ashes lie close to the growths, and they keep out frost so much better than soil that they ought to be generally used for protection in winter. Sawdust is also good for this purpose, as the frost will hardly penetrate it. Asparagus, Seakale, and Rhubarb roots are not easily injured, but severe frost certainly does not benefit them, and they should all have a top-dressing of manure before the frost hardens the ground. Globe Artichokes shrivel more quickly than any vegetable, and the only way to save them is to place a comfortable collar of long manure round them before the temperature falls to 30°. The majority of herbs are quite hardy, and although we spread manure over the surface of the Mint, Tarragon, &c., in winter, it is more to strengthen the growths than to prevent injury from frost. Parsley is very hardy, but shrivels with a few degrees of frost, and it is an advantage to treat it in the same way as the Lettuce. When Parsley is plentiful in summer large quantities should be gathered and dried for winter use, as for everything, excepting garnishing, it is just as useful dry as green. The China Rose Radish will bear much frost, and we only dig and store them when we see that the ground is becoming very hard. Spinach shrivels to a great extent, but when thaw comes it expands again, and if the leaves chance to be killed the roots will always produce fresh growth in spring.—A KITCHEN GARDENER.

PLANT-GROUPING FOR EFFECT.

(Continued from page 450.)

WE may now turn to flowering plants, which are, perhaps, of greater variety even than foliage plants, yet, generally speaking, a few form a special feature, and are more effective than a great number of different kinds of plants. For instance, three to five plants of *Anthurium Schertzerianum* or *A. Andreanum* would at once overbalance a vast number of other flowering plants. One point to be guarded against is not to use too freely plants that happen to be in season, such, for instance, at spring shows, as *Spiræa japonica* or bulbous flowering plants, or in autumn of *Vallota purpurea*. Rather endeavour to have choice or out-of-season plants, therefore forethought is needed in bringing forward or retarding such plants. In spring groups small Azaleas may be usefully employed, and perhaps two or three small well-bloomed Camellias, *Dielytra spectabilis* sparingly, early Pelargoniums of the Regal section, while if small plants of *Clerodendron Balfourianum* can be had in bloom they will help considerably.

Summer groups must demand most attention. It often happens that some gardeners during those months are very heavily handicapped compared with others, and hence the need of either giving the object special attention or staying at home, as not many employers care for second or third prizes any more than gardeners themselves; and although a gardener may be at a discount in point of convenience, culture and taste may do much to make up the difference. In this way, in an establishment where the gardener does the major part of the inside work himself, he gains something upon the gardener, who having more outside charges, has to leave much in charge of others, who it cannot be expected, as a rule, to be so much interested as himself.

Turning to the plants most useful at this season, *Anthuriums* should receive attention, but I may remark here that, in my opinion, exhibiting plants in pairs must be carefully avoided. It may not matter in the case of some minor plants, but when they are striking care must be exercised. As a distinct change of tint nothing is more effective than a number of *Statice Butcheri* or *S. profusa*, for not having too much foliage they may be arranged quite level with the groundwork, while the spikes will not crowd other relieving plants; in fact, to be really effective there should be three or four separate heights all standing clear of each other. *Ixoras* in variety are indispensable for rich yet quiet tone. *Ericas* are valuable

in every way, also such Orchids as can easily be worked in without crowding the groundwork. *Kalosanthes*, with a few fresh heads, follow among light Palms. *Bougainvilleas*, carrying a few spikes in, say, 6 or 7 inch pots, some 3 feet high, give good relief. In the back part *Clerodendron Balfourianum*, as mentioned before, is extremely valuable.

A very telling plant, rarely seen to advantage in groups, is *Clerodendron fallax*; these grown from seed sown almost any time during the year make fine plants. Plants one year old, cut down in January in heat, soon make good plants, and continue blooming from May to November, and nothing is more striking. A few *Celosia pyramidalis* may be employed if very choice in strain; a few plants of *Lilium auratum* and *speciosum* render the outside more bold, while *L. Harrisii* is invaluable; Cockscombs also, such as the Glasgow Dwarf strain, about half grown, placed crosswise, a few are a good change; Tuberous Begonias, too, are useful when they travel safely, as also are *Gloxinias* when of a good strain and fresh. Regarding this point, local exhibitors have some advantage over strangers, as little choice additions can be made at home, whereas exhibitors from a distance would not venture them. Ornamental Grasses and *Rhodanthe Manglesii* are useful; another effective feature being produced by *Zinnia elegans* from seed sown about Easter in a warm frame, and a few of each colour placed into 4 or 5 inch pots will make a fine display early in July, and having little foliage may be arranged where almost any other plant would be crowded, and they impart a rich tint that is not to be had in any other flower. Two or three single spikes of *Eucharis amazonica* on plants in small pots, or a spike of *Pancratium* have a good effect at any season. Should it be a table of plants, as at some shows, a certain distance from the floor, *Isolepis gracilis*, *Ficus repens*, more straggling *Panicum*, *Tradescantia*, or a few small plants of *Cissus discolor*, may be required in addition for groups arranged on the greensward.

I may repeat an expression which I have often used, that unless a gardener is able to tastefully arrange a group of good plants he is not competent to superintend laying out and effectively furnishing lawns and shrubberies. Some may differ from me on this head, but such is my experience.—LATHYRUS.



WE are informed on good authority that SIR JOSEPH D. HOOKER has resigned his office of Director of the Royal Gardens, Kew, which he has held since 1865 with so much credit to himself and advantage to the public service. Sir Joseph succeeded his father, Sir William Jackson Hooker, who had administered the office since 1841. Sir Joseph's resignation will take effect from Monday, the 30th inst. No successor has yet been appointed.

— A MOUNTED photograph of the HULL CHRYSANTHEMUM CHALLENGE VASE has been sent to us. It is, we are informed, the work of a lady amateur (Miss Jameson), a sister of the energetic Secretary of the Hull Chrysanthemum Society. We congratulate Miss Jameson on her admirable production, which is "quite a work of art."

— WE learn that LADY LOUISA ROLLE OF BICTON, DEVONSHIRE, died on the 20th inst., in her ninety-first year. Bicton has long been a celebrated garden, and Lady Rolle for many years was an ardent patroness of horticulture, giving especial attention to the formation of a fine collection of Conifers.

— THE Rev. G. Henslow has for some time been engaged in experiments and observations on the INFLUENCE OF LIGHT ON TRANSPIRATION IN PLANTS, and it is expected that he will communicate the principal results he has obtained at the meeting of the Linnean Society on December 3rd.

— WE learn that three members of the GHENT HORTICULTURAL SOCIETY have been appointed Chevaliers de l'Ordre de Léopold—namely, MM. Ad. d'Haene, C. Spae-Vander Meulen, and A. Peeters. A banquet in honour of these gentlemen takes place to-day (Thursday) in the Hotel de la Poste, Ghent.

— MR. A. YOUNG sends the following note on CORDON PEAR TREES AT WORTH PARK, CRAWLEY:—"In the kitchen garden at the above place is a wall upwards of 430 feet in length planted with cordons, and I have never seen trees look healthier or more promising, and they are creditable alike to Mr. Glyn, the gardener, and to Messrs. Cheal and Sons, from whom the trees were purchased. The varieties are a selection of the best and Bergamotte d'Esperen is wonderfully fine."

— MR. WILLIAM H. BANNISTER, The Gardens, Cote House, Bristol, informs us that the Committee at the Bath Show awarded him an equal first prize for a collection of Pears.

— "T. W. S." writes that the ORCHIDS AT MESSRS. J. LAING AND CO.'S NURSERY now occupy several new houses, a commendable feature of which is the use of corrugated iron by this firm in preference to slate or wood staging. It is more durable, as well as, when covered with shell shingle, retaining a greater amount of moisture. The Cattleyas are in excellent health, among which we noted some fine examples of *C. Lawrenceana*. *Vanda Sanderiana* is also doing well here grown in baskets suspended from the roof. There is also a large healthy example of the somewhat scarce and rare *Sobralia viridula*. Many species of *Dendrobiums*, *Lælias*, and *Cypripediums* were in flower.

— AS a conservatory plant, *CHRYSANTHEMUM MADemoiselle Lacroix*, or *LA PURETÉ*, is unsurpassed amongst the white-flowering varieties, and those who have seen it at Mr. B. S. Williams' Nursery will be able to form an adequate idea of its value in this respect. It was obtained last year under the name of "Madame" Lacroix; but though the blooms differ to some extent on freely grown and undisbudded plants, from those grown specially for exhibition it is apparently the same variety. The florets are shorter on the conservatory plants, slightly fluted or twisted, pure white, fully justifying what appears to be its true name, *La Pureté*, as there is only a slight yellow tinge in the centre of the expanding bloom. The variety is extremely floriferous, and continued in good condition late in January last year. For general decoration or cutting it proves invaluable.

— IN the same nursery there are several ORCHIDS IN FLOWER at the present time, including the following:—*Cypripedium insigne* Chantini, very fine, the dorsal sepal $2\frac{1}{2}$ inches in diameter, with a broad white margin and purple spots. *Calanthes Veitchii* and *vestita* add their attractions, some remarkably strong spikes of the former being notable. *Oncidium tigrinum* furnishes abundant panicles of bright golden flowers. *Vanda suavis* tricolor and the wonderfully distinct *Sanderiana* are flowering well, the last named being represented by a light-coloured pretty variety, quite different from any we have previously seen. *Dendrobium superbiens*, which some complain is a difficult plant to grow, is most successful at Holloway, there being quite a pretty display of its deep purplish flowers. It is one of the most continuous-blooming species in cultivation, some having been had for three months in attractive condition. *Zygopetalums* and several other plants are also attractive, and the general collection is in most satisfactory condition.

— ONE little Orchid deserves special notice—namely, the BRAZILIAN HAWTHORN, as *Burlingtonia fragrans* is sometimes popularly designated in reference to its delicious perfume. It is capitally adapted for culture in small pots to suspend from the roof of an Orchid house, as the racemes of pure white flowers are pendulous, drooping round the pot or pan, and attaining a length of 8 to 12 inches. Its usual time of flowering is in the spring, but several plants are now bearing flowers which frequently last for a month in good condition.

— MR. A. R. COX, The Gardens, Elm Hall, Wavertree, Liverpool, desires us to state that "At the HUDDERSFIELD CHRYSANTHEMUM SHOW recently he was awarded first prizes for both forty-eight and twenty-four cut blooms, with two special prizes for the best incurved and best Japanese in the Show, with Mr. Bunn and Boule d'Or respectively.

— A DURHAM correspondent writes:—"Messrs. Clark Bros., nurserymen, Moorhouse Nursery, North Shields, have an excellent sport from CARNATION SOUVENIR DE LA MALMAISON. It is of the same type and habit, and the colour is a most delicate rose. It is already quite a favourite amongst north-country ladies. It promises to be a great acquisition."

— A CORRESPONDENT sends the following note:—Mr. J. MacMichael's annual SHOW OF CHRYSANTHEMUMS AT SPIKE HOUSE, HAMMERSMITH, has this year included many specimens of rare beauty. Some of the finest were secured by having them placed under glass before the rough weather set in. The following are a few of the most noteworthy:—The Maid of Athens; Cullingfordi, bright crimson, flowers very large and attractive; Beauté des Jardins, deep crimson toned with violet; Belle Alliance, deep red, shaded maroon; Blanche Neige, pure white, very

large; Etoile du Midi, orange red; Jeanne Delaux, fine large flower, very long florets, dark crimson; Frizon, bright canary yellow; La Géante de Valence, long tubular florets, shaded with violet; L'Alsace, deep reddish violet, dotted with white; Mdle. Lacroix, sulphur white, extra fine; Mdle. Antoinette Brunel, pale rose suffused with white; William Robinson, bright sulphur yellow; Madame de Sevin, deep rosy lilac, very effective. The Show has been one of the best amateur displays of the season.

— WE have received fruits of the new CRAB JOHN DOWNIE, raised by Mr. E. Holmes (formerly of the old firm of Fisher & Holmes), at his Whittington Nurseries, Lichfield. The fruits are of the size and shape of large nutmegs, and borne in great profusion on the branches. They are bright red in colour, and in taste and texture resemble the Siberian Crab. John Downie Crab promises to be an acquisition for shrubberies, pleasure grounds, and ornamental plantations.

— A CORRESPONDENT informs us that a bunch of GROS GUILLAUME GRAPES WEIGHING 20 lbs. has recently been sent by Mr. McKenna, gardener to the Chief Secretary for Ireland, at his official residence in the Phoenix Park, Dublin. The bunch measures 24 inches across the shoulders and is 27 inches long. It is described as a model in shape, and the berries large, regular, and perfectly finished. Though not the largest, this is considered by judges competent to form an opinion on the subject the most meritorious bunch of this variety that has been grown, and for which, we are informed, a silver medal was granted at the late Dublin Show. The Vine that has produced this splendid bunch was one of several others that were raised from eyes three years ago. They were cut down after the first year's growth, made and matured grand canes last year that were left 7 or 8 feet long, and have this year produced a splendid crop, some other bunches weighing from 12 lbs. to 15 lbs. Mr. McKenna is to be congratulated on his notable achievement.

— THE following SIMPLE METHOD OF GROWING TUBEROSES is, we are told, practised by Mr. Bell at Strathfieldsaye. He keeps them in paper bags in a cool place till May, then plants them in good soil in the garden. There they grow steadily and sturdily, producing stout flower spikes by the autumn, when the plants are taken up and potted. Plants thus treated are now flowering splendidly, fifteen to twenty blooms on a stem, and will afford a valuable supply for cutting for a long period.

— THE EFFECT OF SOIL ON PEARS was well exemplified by examples of fruit of Beurré Diel sent to the Lincoln Show (which could only be briefly reported last week) by Mr. G. Picker, gardener to A. S. L. Melville, Esq., of Branston Hall. Fruit gathered from a tree with its roots in cold inert subsoil was so pitted and specked as to render the sample worthless; fruit from a similar tree, but with its roots in good soil near the surface, was perfectly clear, and specimens from a wall tree that had been lifted last year and the roots placed in good soil were also quite clear and larger than the others, shelter having had a beneficial effect as well as good soil. If what is bad were occasionally exhibited as well as what is good, and the cause of the difference indicated, horticultural shows would be instructive as well as attractive. A vote of thanks was accorded to Mr. Picker for his interesting contribution.

— MR. B. COWAN writes:—"R. S. Donkin, Esq., North Shields, has lately erected a range of glass 336 feet long. The first portion is divided into a splendid WINTER AND SUB-TROPICAL GARDEN. The rockwork in this department is most natural, the water falling over cascades with sufficient force to make it dance as if it were amongst natural boulders. Palms, Tree Ferns, and Magnolias are quite at home, while from the roof hang Tacsonias insignis, Van Volxemi, Passion Flowers of sorts, all forming and creating with the waterfalls a most pleasing sub-tropical aspect. The plant houses contain many choice varieties of Crotons, all in excellent condition. We noticed Clerodendron splendens trained to a pillar, very beautiful in flower at present, also Jasminum græcillimum. The grounds are small, but they are well laid out and tastefully kept. There is a splendid rockery, with an excellent collection of Rhododendrons; also Thujopsis dolabrata and Cotonaster microphylla, all doing well within a mile from the sea. The houses and grounds are in excellent order, and reflect credit on Mr. Metcalfe, the gardener."

— FRAGRANT FLOWERS.—The perfume manufacturers of Nice and Cannes crush 154,000 lbs. of Orange blossoms, 13,200 lbs. of Acacia flowers, 154,000 lbs. of Rose petals, 35,200 lbs. of Jasmine blossoms

22,000 lbs. of Violets, 8,800 lbs. of Tuberoses, and a relatively large amount of Spanish Lilacs, Rosemary, Mint, Lime and Lemon blossoms every year.

HOW TO MAKE POTASH.

BARON FERD. VON MUELLER, K.C.M.G., of Victoria, writes as follows how to make potash. The wood, bark, branches, and foliage are burnt in pits sunk 3 feet or 4 feet in the ground; the incineration is continued until the pit is almost filled with ashes. Young branches and leaves are usually much richer in potash than the stem-wood, hence they should not be rejected. The ashes thus obtained are placed in tubs or casks on straw over a false bottom. Cold water, in moderate quantities, is poured over the ashes, and the first strong potash liquid removed for evaporation in flat iron vessels, while the weaker fluid is used for the lixivation of fresh ashes. While the evaporation proceeds, fresh portions of strong liquid are added until the concentrated boiling fluid assumes a rather thick consistence. At last, with mild heat and final constant stirring, the whole is evaporated to dryness. This dried mass represents crude potash, more or less impure, according to the nature of the wood employed. A final heating in rough furnaces is needed to expel sulphur combinations, water, and empyreumatic substances; also to decompose colouring principles. Thus pearlash is obtained. Pure carbonate of potassa in crude potash varies from 40 to 80 per cent. Experiments, so far as they were instituted in the laboratory, have given the following approximate result with respect to the contents of potash in some of our most common trees:—The woods of the Casuarinas, or She-Oaks, as well as that of the black or silver Wattle, are somewhat richer than the wood of the British Oak, but far richer than the ordinary Pine woods. The stems of the Victorian Blue Gum and the so-called Swamp Tea-tree (*Melaleuca ericifolia*) yield about as much potash as European Beech. The foliage of the Blue Gum proved particularly rich in this alkali, and as it is heavy and easily collected at the sawmills, it might be turned there to auxiliary profitable account, and, indeed, in many other spots of the ranges. In the Queensland coast country the Mangrove could be made to yield potash in immense quantities, as it is richer in this alkali than almost any other native tree or shrub; and even if the Mangrove were not used for the manufacture of potash, the Ash being rich in this valuable fertiliser, could be easily and economically applied for manurial purposes. Of course British woodmen are aware that it is hopeless to compete with the extensive mineral deposits in Germany, whence most of the potash of commerce is now made.—(*Forestry*.)

CHRYSANTHEMUM LA PURETE AND MDLLE. LACROIX.

THE above appear to me similar in every respect, with the exception that La Pureté has much broader florets, and does not twist so much as Mdle. Lacroix. A good bloom of La Pureté resembles a fully expanded flower of Elaine. The habit, height, and time of flowering are the same in both. I am inclined to believe La Pureté superior to Mdle. Lacroix, as the latter becomes fluted with age. According to Mr. Lewis Castle they were both sent out or raised in 1880. I have grown and flowered Mdle. Lacroix four years, but La Pureté only made its *debüt* in England in 1884.

There are two more Japanese Chrysanthemums that appear to me identical so far as my experience goes—namely, Val d'Andorre and Gaillardia, Souvenir d'Haarlem and Roseum superbum. The two latter were raised and sent out by J. Delaux, the latter in 1884, and the former in 1885. So far as I am able to discern, it is a distinction without a difference.—ROBT. OWEN, *The Floral Nurseries, Maidenhead*.

THE CELERY CROP IN YORKSHIRE.

IN page 404, November 5th, of your Journal, your correspondent, "B., Hunts," wishes to know how the Celery crops are in other gardens. I send you two roots of a variety grown and raised in this neighbourhood called Clayworth Pink. They are not pickled roots, merely taken from a dray-load at the station. We have been growing 400 acres of the same variety within a radius of ten miles of Bawtry. It is quite a harvest with the farmers and cottagers; they are sending about 200 tons per week away to different markets from the following stations—Bawtry, Ranskill, Retford, Beckingham, and Misterton. It is grown in patches of from one rood to forty acres. It is quite a sight to see the growers commence taking up the roots in September. The land is chiefly peat or bog, very little use for other purposes, and five years ago we had not thirty acres in the same district.

The crops are very good, the prices for late crops £35 to £40 per acre; early crops £45 to £60 per acre. In the parish of Everton alone there are 120 acres this season. No Celery fly this season.—C. M. BREWIN.

[The specimens are solid, heavy, and remarkably well-grown samples. What is the cost of production?]

CHRYSANTHEMUM NOTES.

CHRYSANTHEMUMS AT MESSRS. LAING & CO.'S.—The show of Chrysanthemums in the large show-house in Messrs. J. Laing & Co.'s, Stanstead Nurseries, Forest Hill, is a very attractive one just now. It is not, however, quite as good as last year, owing to the greater part of the plants having had their buds injured by the frosts. Of the new

Japanese varieties in flower, Mons. Ghys is a very fine flower, of a gold and silvery white colour; La France, rich carmine with white centre, very fine; Jupiter, dark crimson and red, especially fine, and Mons. Ivon, a beautiful creamy white tipped with gold. In addition to these novelties all the best and latest sterling varieties are grown in quantity, and not a few of their own seedlings are of a very promising character.

CHRYSANTHEMUMS AT PARKFIELD, LEE.—So popular has the queen of autumn flowers become that it is scarcely possible to find a garden where its beautiful merits are not recognised and a prominent place assigned to its culture. It is certain that no other class of plants have yet been brought forward by our enterprising horticulturists to take their place in doing the lion's share of decorating the conservatories and greenhouses, and supplying cut flowers for personal and house decoration, and last, but not least, filling hundreds of exhibition tables throughout the country at a time when other flowers are scarce. The more the merits of this beautiful autumn flower are known the greater does its popularity deservedly become, with the natural result—an increase in the number of growers and the greater the excellence of culture attained. Every grower, be he amateur or professional, who excels in the culture of this charming flower deserves to have his success recorded in the pages of the horticultural press, to serve as a stimulus to others to attain to similar excellence of culture. Well worthy of such recognition is the well-grown collection of varieties in the garden of F. Hatchett, Esq., Parkfield, Grove Park, Lee, whose able and enthusiastic gardener, Mr. J. Sharpe, is quite an expert in their culture, and a very successful exhibitor at many of the leading shows. The collection grown here numbers over 400 varieties, and owing to the limited amount of glass at the disposal of the gardener it is a wonder how so many plants find house room. The plants are packed as close together as possible, and from the giant, 9 and 10 feet high plants, of Madame Clemence Audiguier to the dwarf Pompons, there are banks of colour of dazzling and varied brightness. The foliage was of unusually thick texture, and of a dark, healthy, vivid green, whilst the flowers of such capital varieties as Queen of England, Père Delaux, and Criterion were very fine, being large and well formed, with good broad petals.

Amongst the general collection of Japanese and incurved varieties those most conspicuous for size, richness of colour, and good culture were Madame C. Audiguier, La Nympe, Comte de Germiny, Criterion, Elaine, Fair Maid of Guernsey, Boule d'Or, L'Incomparable, &c., among Japanese; and Queen of England, Empress of India, Lord Wolseley, Mabel Ward, Mrs. W. Shipman, Refulgence, Nil Desperandum, &c., among the incurved section. No useful purpose will be served in occupying space with a list of names, as the best varieties are being constantly brought under the notice of readers in the reports of shows now being held in various parts of the country. Mr. Hatchett is greatly interested in the Chrysanthemum, and gives every encouragement to his gardener to attain success in its culture, and the well-grown and flowered plants reflect great credit on both employer and gardener.—T. W. S.

ROYAL METEOROLOGICAL SOCIETY.

THE opening meeting of the session was held on Wednesday evening, the 18th inst., at the Institution of Civil Engineers, 25, Great George Street. Mr. R. H. Scott, F.R.S., President, in the chair.

Messrs. T. K. H. Clunn, R. S. Davies, B.A., H. C. Fox, M.R.C.S., W. E. Jackson, J. Richardson, M.Inst.C.E., F.G.S.; A. L. Hotch, and C. Todd, C.M.G., were elected Fellows of the Society.

The following papers were read:—

1. "The Helm Wind of August 19th, 1885," by William Marriot, F.R.Met.Soc. This wind is peculiar to the Cross Fell range, Cumberland, and is quite local, but very destructive. The chief features of the phenomenon are the following:—On certain occasions when the wind is from some easterly point the helm suddenly forms. At first a heavy bank of cloud rests along the Cross Fell range, at times reaching some distance down the western slopes, and at others hovering about the summit; then at a distance of one or two miles from the foot of the Fell there appears a roll of cloud suspended in mid-air and parallel with the helm cloud—this is the helm bar. A cold wind rushes down the sides of the Fell and blows violently till it reaches a spot nearly underneath the helm bar, where it suddenly ceases. The space between the helm cloud and the bar is usually quite clear, blue sky being visible; at times, however, small portions of thin vaporous clouds are seen travelling from the helm cloud to the bar. The bar does not appear to extend further west than the river Eden. The author visited the district in August last, and was fortunate enough to witness a slight helm. He gives a detailed account of what he experienced, and also his observations on the temperature of the air at the summit and base of Cross Fell, the direction and force of the wind, the movement of the clouds, &c.

2. "The Typhoon Origin of the Weather over the British Isles during the second half of October, 1882," by Henry Harries. The author shows, by means of daily charts, that a typhoon which originated near the Philippine Islands on September 27th passed over Japan and the Aleutian Archipelago, entering the United States on October 10th. Crossing the Rocky Mountain range it proceeded through the Northern States and Canada to Labrador and Davis Strait. In the Atlantic it was joined on the 18th by another disturbance which had come up from the Atlantic tropics, the junction of the two being followed by a cessation of progressive movement from the 19th to the 25th. During this period the severe gale which passed along our southern counties on the morning of the 24th was formed, its sudden arrival upsetting the Meteorological Office forecasts of the previous night. Observations are quoted, showing that it would have been impossible for the department to have been aware of its existence before about 3 A.M. of the 24th. Following in the wake of this storm, the parent cyclone reached the French coast on the 27th, its advent being marked, as in Japan and America, by violent gales and extensive floods over the whole of Western and Central Europe and

Algeria. The village of Grindelwald was destroyed, and in the Austrian Tyrol the damage caused by floods reached at least two millions sterling. Passing through France and the Netherlands the disturbance showed signs of exhaustion, and on November 1st, in the Baltic, it quietly dispersed, after accomplishing a journey of over 16,000 in thirty-six days. This is the first storm which has been followed day by day from the Pacific to Europe.

3. "Notes as to the Principle and Working of Jordan's Photographic Sunshine Recorder," by J. B. Jordan and F. Gaster, F.R.Met.Soc. This instrument consists of a cylindrical dark chamber, on the inside of which is placed a prepared slip of photographic paper. The direct ray of sunlight being admitted into this chamber by small apertures in the side, is received on the sensitised paper, and travelling over it by reason of the earth's rotation, leaves a distinct trace of chemical action whenever the light is of sufficient intensity to show a definite shadow on a sundial. The cylinder is mounted on a stand with adjustments for latitude, &c. The record is fixed by simply immersing it in water for a few minutes. As this instrument records the actinic or chemical rays it usually shows more sunshine than is obtained by the ordinary burning sunshine recorder.

GRAFTING OR INARCHING VINES.

IN a recent number of our Journal I read with great interest the remarks on the influence of the stock on the flavour of scion Grapes. I have Madresfield Court worked on Gros Colman, and the fruit from the former has no flavour, being worse than Gros Colman. This is interesting, because if stock is to alter flavour for either worse or better all we have to do is to choose a good stock. I also put Madresfield Court on Gros Colman to test its cracking, the only weakness with me; but this season neither on its own roots nor grafted has it cracked. Gros Colman on Muscat of Alexandria is a decided improvement, with an increase of vigour in growth. I have this summer grafted both Alicante and Gros Maroc on Black Hamburg, also on Buckland Sweetwater, and I am looking forward with interest to the result in fruiting. Nothing puts new life into old Vines like inarching or grafting. I intend putting Gros Colman on a strong Gros Guillaume.—STEPHEN CASTLE, *West Lynn*.

TUBEROSES.

WERE I asked to name a trio of the most popular white flowering plants in cultivation, I should select the Stephanotis, Gardenia, and Tuberose. At all seasons their sweet-scented and beautiful flowers are highly appreciated and in great demand. The two former, alas! are so much subject to mealy bug and other pests as to make their culture a matter of great difficulty, especially when grown in a mixed collection of plants. Where they can have a house to themselves, and measures applied to keep their enemies from getting a hold, they can be grown to the admiration of everyone who beholds them. The Tuberoses, as far as I know, are free from the many disadvantages which attend the culture of the others; indeed, so easy are they of cultivation, that it is a great pity they are not more generally grown. Many are deterred from growing them by the thought of their requiring a heated house to bring them to perfection, but although a little heat is necessary if they have to be forced into flower for any set time, yet if they are grown and flowered in a cool house they will be much dwarfer in the flower-stem and last longer.

The Tuberose may be started at any time from January till May for those who have not the advantage of a heated structure. About the month of April is the best time to pot the bulbs. I offer the following remarks on their culture, which I have followed myself with a fair degree of success. About the second week of April the bulbs are potted singly into $4\frac{1}{2}$ -inch pots, using a compost of two parts good turfy loam, one part leaf mould, one part peat, a handful or two of bonemeal, a little charcoal, and sand to make the whole porous. They are then stood in a cold frame, and no water is given for a few days, and then only enough to keep them moist, as anything approaching stagnation is sure to end disastrously for the bulbs. They take a good time before showing much signs of vitality, but roots are forming, and therefore the young growths get the benefit over those started (which are generally well advanced, before any roots are formed for their support), and although they make slow progress the foliage is of firmer texture. As the season advances plenty of air is given morning and night, shading them from the bright rays of the sun. By the end of June they will be growing freely, when a more abundant supply of water is given, as they soon become dry in these small pots. About the beginning of September they are placed in a cool house, with a temperature ranging from 45° to 50° , where they shortly commence to throw up their flower-stems. When wanted in flower about the middle of September the desired number are placed into a house with a temperature of 60° by day and 58° by night. Those in the cool house come in towards the end of October, and the flower-stems will not average more than 2 feet. Coming in at that dull season they are most acceptable.—WM. MARSHALL, *Ayr*.

BRYN GLAS,

THE seat of T. Cordes, Esq., is pleasantly situated on the right bank of the river Usk, and lies about a mile to the north of the flourishing town of Newport, Monmouthshire. The house, which is a modern erection of two storeys, stands on the ridge of a projecting hill near the summit, which rises to the height of 300 feet above the bed of the river, and commands an extensive panoramic view of great beauty on the east, north, and south sides as far as the eye can reach. The view on the west side is hemmed in by rising ground and large trees. The situation for fine landscape of

hill and dale, of wood and water, is well chosen, and could scarcely be surpassed anywhere in this country. Looking in a northerly direction, the view embraces the lofty Sugar Loaf, and a series of high mountains beyond Abergavenny, while nearer hand glimpses of the dark-brown river in its lower reaches are seen for miles, confined by its deep banks, wending its way along through rich meadows, cornfields, and orchards. Facing the east the ground rises gradually from the left bank of the river for a great distance till the view is closed in by a ridge of high hills running north and south. Turning to the left, you see peeping out from amongst the trees "Old Caerleon on the Usk," where the mythic Arthur held his court. On the south you have an extensive view of the Bristol Channel, with its towns and villages along the Somerset coast, and beyond them the undulating hills away in the distance, while the town of Newport, with its shipping in the docks and river, seems to lie at your feet.

The pleasure grounds, flower garden, and shrubberies surrounding the house contain between nine and ten acres. A great portion of this has been taken in lately, and the whole of it has been renovated and much improved by the skilful management of the present gardener, Mr. Wattie, who has had charge of the place for the last fourteen years. The lawn immediately in front of the house has been carried out level for some distance and terraced. From the terraces the ground suddenly slopes in front towards the river, and in a less degree to the right and left of the ridge, far beyond the enclosed portion.

The grounds at the lower extremity are joined by an old plantation named the "Wilderness," which affords a pleasant shady retreat in hot weather. It is six acres in extent, and contains a great many monster Oaks, Elms, Sweet Chestnuts, and other trees. Beautiful winding walks run all through it, and these are bordered in places with large clumps of the ponticum Rhododendron, which grows luxuriantly in the natural soil here, and flowers freely during the early summer months. The grounds around the house have been laid out with good taste, and much consideration has been given, both to beauty and utility, in planting and in laying off the walks. The principal walks lead from the house to the kitchen garden on the north side, and through the grounds on the south side to the "Wilderness," which is entered at the extreme end. From these, other walks diverging at different points encircle the grounds and lead to places of interest. As I have mentioned, Rhododendrons grow well in the natural soil here, and numbers of large clumps of the best named varieties are planted about the grounds. Each of these is planted wholly of one kind, which has a fine effect, the clump appearing as if it was one large Rhododendron during the time it is in flower. Besides these, there are many beds of evergreen and deciduous flowering shrubs and large shrubberies bordering walks and the outer portions of the grounds. The shrubberies in the outer portion are planted next the lawn with herbaceous and other flowering plants. Standard Rhododendrons, and a choice collection of the best Conifera and other trees and shrubs are planted singly in suitable places on the lawn, giving the whole a rich and furnished appearance. The trees and shrubs grow well, and seem to like the soil and situation of Bryn Glas.

Close to the house, on the lawn below the terrace, is a large geometrical design planted in the carpet style of bedding. Though I was never a great admirer of that formal style (might I say of sculptured vegetation?) I must confess that it looked remarkably well at the time of my visit, and Mr. Wattie informed me it looked bright and cheerful in the month of October, when all the bedding plants were gone.

All the forcing and plant houses are in the kitchen garden, except the conservatory, which is attached to the mansion, and a small house at the north end of the grounds for growing Tea Roses, &c. The conservatory is a large span-roofed structure with an ornamental lantern on top. It is 50 feet long, 30 feet wide, and 26 feet high. The sides are 13 feet high, and the front and ends are of wood and glass, and at the back a wall, which is filled with pockets or crevices for growing plants. Amongst those planted on the walls were some remarkably fine *Seaforthia elegans* and other Palms and Ferns, and Lycopodiums growing luxuriantly up to the top of it. The bed in the centre of the house was filled with large Palms, Tree Ferns, Crotons, &c., amongst which were fine plants of *Dicksonia antarctica*, *Cibotium princeps*, *Areca lutescens*, *Cycas revoluta*, and others. The space round the sides was filled with a miscellaneous collection of stove and greenhouse plants, both flowering and fine-foliaged. The pillars supporting the lantern-roof were covered with plants of *Rhynchospermum jasminoides*, *Plumbago capensis*, *Hoya carnosa*, *Euphorbia jacquiniæflora*, and part of the roof and the wall next the mansion were covered with *Bougainvillea glabra*, *B. speciosa*, *Stephanotis floribunda*, and *Luculia gratissima*, which flower freely and produce a pleasing effect at all times.

The kitchen garden lies on the north side of the house, and in close proximity to it. It is screened from the pleasure grounds by a belt of trees, with a shrubbery and an herbaceous border in front of it. The garden is laid out in quarters, which are divided by gravel walks, and the borders by the side of the walks are planted with pyramidal Apple and Pear trees of the best sorts, which are neatly trained and pruned, and in fine bearing condition. Most of them were yielding good crops when I saw them, the quarters inside were well cropped with excellent vegetables, everything in the garden looking neat and orderly.

The frame ground adjoins the garden on the west side. It is enclosed by high walls, which completely shut it in and protect it from all quarters. Besides the ordinary cool frames and pits, potting shed, store and seed rooms, and compost heap, it contains several ranges of useful span-roofed houses for growing plants and fruits. The first of these contained a good stock of fruiting Pine plants. The varieties consisted mostly of Queens and Smooth Cayennes. They were clean and healthy, and promised well

to produce good fruits. The next division was filled with Orchids, amongst which were good hatches of *Calanthe vestita oculata* and *C. Veitchi*, *Cattleya Mendeli*, *C. Trianae*, and *C. Mossiae*. The end of the house was covered with virgin cork, and Ferns, *Selaginellas*, *Begonia Rex*, and other plants were growing over it. Next to this is the succession Pine pit. Pines are grown on one side of it, and Melons in pots on the other. The next division—an intermediate house—was filled with *Odontoglossums* and several other genera of Orchids, and a few fine plants of *Gleichenias* in good condition. The Cucumber and Melon house adjoins this. It was partly filled with plants consisting of *Dracenas*, *Gardenias*, *Ixoras*, and some Orchids. Close to this is the Strawberry house, a neat lean-to building, both light and airy, with a series of shelves on a stage running close up the glass. Some 400 Strawberry plants are forced here annually, and to judge from the plants I saw in preparation they cannot fail to produce good crops.

The vineries, Peach houses, and the principal plant houses occupy the whole of the south wall in the kitchen garden. The ground has a steep incline to the east, and the houses form, as it were, a series of terraces.

fruit. The cherries were free from cracking, and the Vine seemed to do fairly well in company with the Peaches. Passing on, we descend another three steps into the late vinery, which is planted with *Gros Colman*, *Black Hamburgh*, *Muscat of Alexandria*, *West's St. Peter's*, *Lady Downe's Seedling*, and *Mrs. Pince*. The Vines looked strong and healthy, and all the varieties were bearing good crops.

Next is the early vinery. It is planted with *Black Hamburgh*, *Muscat of Alexandria*, *Buckland Sweetwater*, and *Foster's Seedling*. The plant stove—a commodious span-roofed house—is next entered. It contained a good collection of flowering and fine-foliaged plants in vigorous health, amongst which were some fine specimen plants of *Croton Victoria*, 5 feet high and as much through. There were also two large plants of *Eucharis amazonica* fully 6 feet in diameter, which have not been potted for the last seven years, yet they are strong and healthy, and produce enormous quantities of flowers during the year; large plants of *Davallia Mooreana* more than 5 feet through, and many others of smaller growth in a flourishing condition. The back wall was covered with a plant of *Stephanotis* in a free-flowering state. Next to this is the house for growing pot Vines. It was



Fig. 72.—BRYN GLAS.

The first at the top of the range—a span-roofed greenhouse—stands on level ground, and acts as a kind of corridor to all the others, which are on a lower level. Each division is entered by a flight of three steps till the stove is reached at the bottom, which is built on level ground. In passing, I may say that Mr. Wattie is a good plantsman, and Bryn Glas till lately possessed one of the finest collections of specimen stove and greenhouse plants in the country. These, for some reason or other, have been dispersed to make room for smaller plants. The greenhouse was filled with a general collection of plants, amongst which were Tuberous *Begonias*, single and double, *Gloxinias*. Tree Ferns, *Rhododendron Countess of Haddington* and *R. Veitchianum*, two splendid varieties. The plants are about 5 feet high, and from 3 to 4 feet in diameter. Tea Roses and the red and white *Lapagerias* were trained over part of the roof and end of the house, and in a case, in an out-of-the-way corner, a fine plant of *Todea superba*, which I look upon as a most unsatisfactory plant, shunning the light and hiding its beauty under a bushel.

Leaving this we entered the early Peach house, which is a lean-to. It is well furnished with fine trees of *Royal George* and *Early York Peaches*, and *Violette Hâtive Nectarines*, which carry good crops annually. The trees were clean and healthy and full of foliage, though the crop had been gathered some time before. At the lower end of the house a Vine of *Madresfield Court Grape* was finishing off a good crop of highly flavoured

filled with a miscellaneous collection of plants in pots. The back wall was covered with *Maréchal Neil* Roses, which were struck from cuttings in the spring. They were strong vigorous plants with shoots more than 6 feet in length, some of which were flowering.

The Muscat house follows. The Vines were planted this spring. They have made strong short-jointed canes which run right up to the top of the house. The horder is made by degrees both inside and out. As the Vines grow and fill it with roots a fresh breadth is added. Next to this is the late Peach house. Mr. Wattie adopts the system of planting early and late varieties in the same house, and by this means he can gather ripe fruit from the month of June till September from it—rather a good idea where glass is limited. The varieties planted here are *Prince of Wales*, a large melting late variety, and a great favourite at Bryn Glas; *Late Admirable*, *Lord Palmerston*, *Hale's Early*, and *Pine Apple Nectarine*. The trees were healthy and clean, and the late varieties were carrying a good crop of excellent fruit. Besides this there is a new Peach case covering 60 feet of wall. It is planted with late varieties, which are making splendid growth, and promise to make fine trees. The trees are young, and to make the most use of the structure possible it was planted with Tomatoes, which have produced as good a crop as is almost possible of large finely finished fruit. The varieties are *Stamfordian*, *Trophy*, and *Perfection*. In conclusion, it is right that I should say the magnificent

grounds of Bryn Glas are, through the kindness of Mr. Cordes, thrown open to the public every Thursday during the summer season.—A. PETTIGREW, Cardiff.

BERBERISES.

As the planting of bushes will now occupy the attention of many, there are some good classes of trees and shrubs which I wish to bring under their notice, and amongst these the Berberises deserve to be introduced. We have a very extensive collection of trees and shrubs here, but I do not think there are any more beautiful when in bloom or fruit than *Berberis Darwini*. The largest of the bushes of it are 12 feet high, wide in proportion, and in April they become a perfect mass of deep golden blossom. The blooms are very double, and are produced in little racemes. They form fruit freely, and in September the branches which were clothed with their golden hues in spring, are bending under a load of deep purple fruit. This variety is evergreen, and one of the best of all. *B. Jamiesoni* is another of the evergreen type, and stands next to *Darwini* in merit. *B. dulcis* is perhaps the sweetest, and *B. ilicifolia* is very ornamental in the foliage, being sometimes named the Holly-leaved Berberis. The whole of these flower very freely in spring, and are the best of the evergreen varieties.

Amongst deciduous sorts, *B. vulgaris* is the common kind often seen in woods, *B. elegans* and *B. purpurea* being also notable as other good varieties of this section. The Berberises are noted for their accommodating habit. They will grow in almost any soil or situation, or under the shade of other trees. They are conspicuous in woods, especially in autumn, when they are bearing heavy crops of berries, and they are equally so in pleasure grounds and small gardens. They develop all their characters in a poor soil, but if extra luxuriance is desired it must be produced by planting them in good soil; and although I would never dig deeply, or apply much manure for them alone, I would place some good soil near the roots where the soil is naturally poor. Our best specimens are growing in the ordinary soil of our woods and pleasure grounds, but it is moderately good, and I would advise all who plant in light or stony ground to place extra good soil at the roots of those they wish to become fine specimens. The present is a good time for planting, and if small plants 18 inches or 2 feet high are bought in from a nursery, they will bloom the first season and soon become effective bushes.—L. L. M.

CHRYSANTHEMUM SHOWS.

EAST GRINSTEAD.

THE second annual Show of this Society held at the Public Hall, East Grinstead, last week, was a most unqualified success, being largely attended, greatly admired, and the gathering of Chrysanthemums would have done credit to any town far larger than East Grinstead. The number of entries showed a considerable increase on last year, and it was found necessary to utilise much more space for the arrangement of the exhibits, the stage portion of the hall being this year brought into requisition. The quality of the plants and blooms undoubtedly surpassed previous efforts, the tolerably favourable season being, no doubt, mainly conducive to this result. The weather, however, has not been all that floriculturists could have desired, especially in North Sussex, where, owing to the extreme dryness, quite two months of the year were lost. Great credit, indeed, is due to Mr. Wallis and Mr. Badman of East Grinstead for the exquisite taste they displayed in superintending the grouping of the plants, a work in which they laboured and were highly successful. But the main share of the general work fell to Mr. S. Jenks, the energetic Hon. Secretary, who gave complete satisfaction. The main prizewinners were amongst the gardeners Mr. R. White, The Hermitage; Mr. C. Harris, Hammerwood; Mr. S. Jenks, Brambletye; Mr. T. Glen, Worth Park; and Mr. Down, Ashdown Park; but the first-named far outstripped the rest, he taking double the amount in prizes that fell to the share of anyone else. Mr. Moon and Mr. Dawe were the amateur prizewinners, but there was a vast difference in the quality of their exhibits. Mr. Moon's were excellent and gained several first prizes, but Mr. Dawe's fell so far short of them that the Judges only felt justified in several instances in awarding third prizes. Two groupings, each 60 feet square, were shown, and premier honours in this important class fell to Mr. Jenks, who gained it solely for the very effective manner in which his plants were arranged. Many of Mr. White's flowers were far grander and more striking in effect, but they were hurriedly placed in position and being all towering specimens, while Mr. Jenks' gradually rose from dwarfs to standards, forming a pretty sloping bank, the beauty of the former was lost, and the first prize followed suite. The dwarf-trained Pompons with which Mr. Harris took first prize included some handsome plants, one particularly beautiful being *Marguerite De Coi*. He very closely pressed Mr. White in his contention for the leading prize for a group of six large distinct flowering varieties, that which particularly recommended his group being a *Dr. Macary*. As we have remarked, Mr. Moon's flowers were very fine for an amateur, notably a magnificently reared *Golden George Glenny*, an incurved plant, which figured prominently amongst other exhibits in various parts of the Show. Mr. Jenks, as well as in the large group, contributed some grand plants, particularly noticeable being his six specimen Japanese, which were much admired. But, as far as plants were concerned, Mr. White undoubtedly carried off the palm in several of the classes, far outstripping his competitors. His Japanese specimens were masses of immense bloom, a *Madame B. Rendatler* forming the most striking, but the greatest beauty certainly lay in the dwarf-trained plants, which formed one of the staple attractions of the Exhibition. The group was composed of *Golden George Glenny*, *Prince of Wales*, *Mrs. George Rundle*, *La Nymph*, *Golden Christine*, and *Mrs. Sharp*, and which was the finest it would be hard to say; all were grand and beautiful and trained in a masterly style. His group of large-flowering plants also won good opinions, a *Guernsey Nugget* being one of the largest and most perfect specimens among the plants in the Show.

Amongst the cut blooms a similar position to Mr. White's was taken by Mr. Glen, who sent the finest flowers on view, some of which it would be difficult to find anything to surpass. The Japanese specimens were very grand both as regards formation, size, richness, and variety of tints. Mr. Down's contributions, notably the Pompons, were also very good, and so were Mr. White's exhibits in these classes.

There was but very little to choose between the plants for table decorations sent by Mr. White and Mr. Jenks, both showing some very pretty and effective plants. Mr. White of Halsford exhibited some beautiful blooms, and would have been more fortunate but the frost affected his plants a short time since, before which his collection was the envy of the gardeners of the neighbourhood. The fruit was placed in an upstairs room and formed a small but choice display.

SHREWSBURY.—NOVEMBER 12TH AND 13TH.

THE third annual Show of the Shropshire Gardeners' and Amateurs' Rose, Fruit, and Chrysanthemum Society, was held in the Corn Exchange on the above dates, and was very successful, especially so far as cut blooms and fruit were concerned. In the open class for twenty-four Japanese and twenty-four incurved a silver cup value £10 10s. was offered, and brought four competitors with splendid blooms, large and fresh. Mr. West, gardener to E. Wright, Esq. of Halston, was first with forty-eight grand flowers, the best Japanese being *Golden Dragon*, *Criterion*, *Magnum Bonum*, *Jeanne Delaux*, *Henry Jacotot*, *Fair Maid of Guernsey*, *Boule d'Or*, *Dr. Macary*, *Elaine*, *Mdlle Lacroix*, *La Nymph*; incurved, *John Salter*, *Lord Alcester*, *Beauty*, *Empress of India*, *Lord Wolseley*, *Emily Dale*, *Queen of England*, *Nil Desperandum*, *Alfred Salter*, *Isabella Bott*, and *Princess Teck*. Mr. Lambert, gardener to Col. Wingfield Onslow, was second with blooms very little inferior, his Japanese were grand. Mr. Silver, Chirk Castle, being third. Mr. Haggart, Moor Park, Ludlow, fourth. Twenty-four Japanese, distinct, Mr. West was again first, Mr. Lambert second, and Mr. Haggart third.

For twelve Japanese Mr. West was again to the fore with remarkably fine flowers. Mr. Silver second with blooms very little inferior. Mr. Lambert third. For twelve (any variety) Mrs. Bannerman, Roden Hall, was first; G. J. Fox, Esq., second. The plants were not so fine as usual owing to the dull weather. They were not so much in flower as they should be. Mr. Milner, Sundorne Castle, was a good first with six large-flowering plants; Dr. Burd with four standards, and T. Stayney Eyton, Esq., with three large-flowering varieties. Primulas were very fine, T. S. Eyton, Esq., and the Hon. W. Herbert taking the honours in the order named.

Fruit was a grand show, especially hardy varieties, 570 dishes being staged. For the best collection of Apples and Pears Mr. Milner was a good first with seventy-six dishes. Mr. Lambert second with sixty-six dishes. Lord Hill Trevor third. For three bunches of white Grapes, one variety, Mr. Purser, gardener to J. Watson, Esq., and Col. Wingfield second. Three bunches of black, Col. Wingfield first, Miss Bannerman second. Four bunches, four varieties, J. Watson, Esq., was again to the fore. Mr. Milner second. The amateur classes were well filled, and some fine fruit was shown; G. Burr, Esq., W. W. Humphrey, Esq., Mr. C. H. Matthews, and Dr. Burd being the principal prizetakers.

A fine collection of Apples and Pears, not for competition, were staged by Messrs. F. & A. Dickson & Sons, Chester; and a fine group of Chrysanthemums and Primulas, also a splendid lot of cut blooms were exhibited by Messrs. Jones & Sons, Shrewsbury, not for competition.—H. JONES.

YEovil.—NOVEMBER 17TH.

JUDGING from the excellent start made last year, and taking into consideration the liberality of the prize list, we were fully prepared to see a really good show, and we were not disappointed. In one important respect the Yeovil differs from all other Chrysanthemum shows, as the promoter, Mr. C. Tite, is both Honorary Secretary and principal patron, the support he receives in the shape of subscriptions being almost trivial; or to be plain he is the proprietor, and it is to be hoped he will not be a loser by his public spirit. The gardeners in the district have not yet attempted to compete with trained specimens, and they are wise in this respect, as unless they are done well they present a very poor appearance indeed. Groups occupy a prominent place on the prize list, and of these there were nine creditable lots arranged. The largest, to occupy a space of 10 by 5 feet, were to consist principally of Chrysanthemums, and in this class Mr. T. Hannan, gardener to J. E. Whitby, Esq., Yeovil, was first, his Chrysanthemums being dwarf, fresh, and well flowered; and he also had some well-grown *Poinsettias*, *Eucharises*, and other plants. Mr. W. Appleby, gardener to T. W. Dampier-Bide, Esq., Yeovil, was second, his very pretty group including several well-flowered *Calanthes*, *Odontoglossums*, and fine-foliaged plants, but his Chrysanthemums were poor; and Mr. W. Pollard, gardener to W. Batten, Esq., Aldon, Yeovil, was a good third. With smaller groups the prizewinners were Mr. G. Gear, gardener to Mrs. Green, Yeovil; Mr. C. Anthony, gardener to T. Moore, Esq.; and Mr. A. Crossman, gardener to J. Brutton, Esq., Yeovil, the two former being considerably ahead of the remaining exhibitors. The silver medal of the National Chrysanthemum Society, offered for six plants of incurved varieties of Chrysanthemums, was won by Mr. W. Pollard, who had fresh freely flowered specimens of *Alfred Salter*, *Mrs. G. Glenny*, *Mr. Bunn*, *Prince of Wales*, *White Queen*, and *Snowball*. Mr. L. Russell, gardener to Major Aldworth, West Coker, was second in this class; and Mr. G. Rendell, gardener to Mrs. Nicholson, third; and with three plants the prizewinners were Messrs. Hannan and G. Gillingham, gardener to R. Phelps, Esq., Yeovil. Mr. L. Russell was the winner of a silver medal N.C.S. for six plants of Japanese varieties; Mr. Pollard being second and Mr. G. Rendell third, all exhibiting creditably. The prizewinners with three Japanese varieties were Messrs. G. Gillingham and T. Hannan.

Cut blooms were largely shown, the competitors including several notable growers. The silver cup, value £5, offered for twelve incurved and twelve Japanese varieties, was won by Messrs. W. & G. Drover, Fareham, Hants; Mr. Willis, gardener to Mrs. Pearce, Southampton, being a remarkably close second, and Mr. H. R. Ward, gardener to the Earl of Radnor, Longford Castle, a good third, and there were five other competitors. Messrs. Drovers' incurved varieties were very fresh and of good form, but the Japanese were slightly inferior. They were arranged as follows:—Back

row, incurved—Jeanne d'Arc, Lord Alcester, Snowball, and Golden Empress—Middle row—Beauty, Princess of Teck, Golden Queen of England, and Lord Wolseley. Front row—Robert James, Princess of Wales, Nil Desperandum, and Cherub. The back row of Japanese consisted of Mons. Léo Brunel, Baron de Prailley, Fair Maid of Guernsey, and Triomphe de Rue des Chatelets. Middle row—Roseum Superbum, Meg Merrilees, F. A. Davis, and Madame Lacroix, the front row being Fanny Bouchardet, Fernand Feral, Grandiflorum, and Madame C. Audiguier. Mr. Willis had one very faulty bloom which just spoilt his chance of winning, and as it was he was only two points behind. His best blooms were Miss M. Morgan, Queen of England, Mrs. W. Shipman, Lord Alcester, Cherub, and Lady Hardinge, incurved varieties; and Meg Merrilees, Criterion, F. A. Davis, Japonaise, Boule d'Or, and Baron de Prailley, Japanese varieties. In Mr. Ward's stands were fine blooms of Fair Maid of Guernsey, Baron de Prailley, Boule d'Or, and Comte de Germiny. Messrs. Drover was also first for twelve incurved, Mr. Willis being again second, and Mr. Runnacles, gardener to the Hon. H. Sturt, Sherborne, was a creditable third. With six incurved varieties Mr. Ward was first, Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, a very close second, and Mr. Guppy third. There were seven good lots of twelve varieties of Japanese sorts shown, Mr. Iggulden taking first prize for well-grown blooms of Grandiflorum, Madame C. Audiguier, Fair Maid of Guernsey, Thunberg, Belle Paule, J. Delaux, Comte de Germiny, Mons. Ardene, Boule d'Or, Meg Merrilees, Peter the Great, and Fanny Bouchardet. Mr. Willis was a good second, and Messrs. W. & G. Drover third. Mr. Ward was first for six Japanese, having fine blooms of Fair Maid of Guernsey, Madame C. Audiguier, Fanny Bouchardet, Comte de Germiny, Grandiflorum, and Ethel. Mr. G. H. Gopp was second, and Mr. R. Guppy third. Mr. Ward was first with twelve reflexed blooms in not less than six varieties, having very good Pink and Golden Christines, Dr. Sharp, Mrs. Forsyth, Gloria Mundi, and King of the Crimsons. Messrs. W. & G. Drover were second, and the latter had the best Anemone-flowered varieties, among which were good blooms of Fahias de Maderanaz, Madame Cahrol, Minnie Chate, Empress, Lady Margaret, Fleure de Marie, and Acquisition. With twelve bunches of Pompons Mr. Hannan was easily first, having Marabout, Mdle. Marthe, Florence Nightingale, and Rose Trevenna, in good condition. Mr. J. Rendle was second. A special prize was offered for the best blooms of incurved variety in the Show, and a fine bloom of Golden Queen of England in one of Messrs. Drover's stands was selected, while in a corresponding class for a Japanese Mr. Iggulden won with a perfect bloom of Grandiflorum.

In the classes for table plants, Palms, berried plants, Primulas, Violets, and Mignonette the principal prizewinners were Messrs. W. Appleby, T. Holford, G. Gear, A. Crossman, E. Biggs, gardener to Gen. Henning, Frome Whitfield, Dorchester, W. Pollard, J. Gillingham, and C. Anthony, the exhibits being numerous and good in each case. A considerable number of choice and very useful flowering and fine-foliaged plants were also kindly lent by Mr. B. R. Davis, nurseryman, Yeovil, and also by Mr. Harris of Dorchester; cut Roses being contributed by Mr. Jarman of Cbard. Several classes were provided for vases of cut Chrysanthemums, Ferns, and foliage, bouquets of Chrysanthemums and table decorations, vases and baskets filled with autumn leaves and berries, these being open to ladies only. Those who displayed the best taste were Mrs. Biggs, Mrs. Brutton, Miss Curtis, Miss Vining, Miss Mayo, Miss Bond, and Mrs. Hall.

The display of Grapes, Pears, and Apples was highly satisfactory and equalled the cut blooms for attractiveness. There were six lots of Alicante shown; Mr. Iggulden taking the first prize with medium-sized bunches, the berries being large and well finished. Mr. Biggs was second; and Mr. G. R. Daley, gardener to T. Todd-Walton, Esq., Wincanton, third, both having large bunches, but not cleanly shown. In the class for any other black variety Mr. Biggs was easily first with fine bunches of Mrs. Pince; Mr. S. Pullman, gardener to R. B. Sheridan, Esq., Frampton Court, Dorchester, following with good bunches of Lady Downe's, badly rubbed however; and Mr. J. Allister, gardener to the Rev. St. John Mildmay, Sparkford, Bath, was third with small bunches of Gros Colman. Mr. Pullman had the best Muscat of Alexandria, Mr. Iggulden being second, and Mr. G. Read third; and in a class for any other white Mr. Iggulden was first with good bunches of Mrs. Pearson, and Mr. G. R. Daley second with Foster's Seedling in good condition; third Mr. F. Case. In a large class for a single dish of Pears Mr. Harris was first with good Marie Louise; second Mr. C. Bowers, who had very fine Pitmaston Duchess; and third Mr. Iggulden with Marie Louise: while the prizes for stewing Pears went to Mr. R. McWilliam, gardener to Sir G. S. Stuckley, Bideford; second Mr. A. Phillpot, and third Mr. Case, all having fine fruit of Uvedale's St. Germain. The best three dishes of dessert Apples, consisting of Blenheim Pippin, Scarlet Nonpareil, and Ribston Pippin, were staged by Mr. C. Anthony; second Mr. Iggulden, third Mr. E. Harris. Mr. J. Mundell, gardener to R. Thornton, Esq., was first for three varieties of culinary Apples; second Mr. J. Bowles, gardener to Major Godden; third Mr. J. Hall, Crocombe, Wells; and fourth Mr. Biggs, all having fine heavy fruit of good sorts. Mr. John Scott, Merriott Nurseries, also contributed a fine collection of Apples not for competition, some of the best of which were Sturmer Pippin, Cox's Orange Pippin, Cornish Gilliflower, Kerry Pippin, Pitmaston Nonpareil, Adam's Pearmain, Mère de Ménage, Hollandbury, Annie Elizabeth, Tom Punt, Golden Noble, Peasgood's Nonesuch, Royal Somerset, New Hawthornden, and Cellini.

CUCKFIELD.—NOVEMBER 18TH AND 19TH.

LAST year, the gardeners in the neighbourhood, with the approval of their employers, held a Chrysanthemum show, the proceeds of which were sent to the Gardeners' Royal Benevolent Institution. The result has been that the Chrysanthemum fever has taken root in the district, for as the season drew on it was generally felt that steps should be taken to have another show. It was too late to issue a prize list, so it was decided to hold a show on the same basis as last year—namely, invite all to stage plants, fruits, &c., not for competition. In response to this invitation, seven very creditable groups and about 170 dishes of fruit was staged. The following gardeners staged groups—Messrs. G. Stringer, gardener to R. A. Bevan, Esq., Horsgate; T. Burtenshaw, gardener to W. Payne, Esq., Hatchlands; J. Mitchell, gardener to Mrs. Maberly, Myttings; A. Scott, gardener to M. Turner, Esq., Bnter's Green; H. Scott, gardener to T. W. Erle, Esq.,

Mill Hall; J. Lingley, gardener to T. W. Best, Esq., Harvest Hill; and Mr. G. Mitchell, gardener to Miss Richardson, Parkfield. Mr. Stringer and Mr. J. Mitchell also contributed collections of Apples and Pears of very good quality. Fruit was also staged by Mr. J. Harding, gardener to B. B. Hodgson, Esq., Bolney, a very fine lot; Mr. R. Inglis, gardener to T. T. Cunliffe-Lister, Esq., Borde Hill, who showed some good Black Alicante Grapes; R. Hudson, gardener to Major Sergeson, Cuckfield Park; Mr. E. Norris, Broad Street; Mr. H. Jenner, gardener to Miss Ingram, Chownes; C. Tompsett, gardener to Rev. F. G. Mount; Mr. W. Manton, gardener to Mrs. Borrer, Pickwell Lodge, who also showed fifteen dishes of Potatoes; Mr. J. Lingley; Mr. J. Umpleby, gardener to H. Woodcock, Esq., twenty-four dishes Apples and Pears, all from dwarf bush trees, a very good collection; Mr. G. Warren, gardener to Mrs. Hanky, Balcombe Place, also showed twenty-four dishes, an interesting lot. Special prizes were offered by a few of the Committee for a tray of vegetables; Mr. Manton was awarded first, Mr. Stringer second, and Mr. J. Mitchell third. It was evident from the appearance of some of the vegetables in one of the trays that this was not their first appearance on the exhibition table. Vegetables, when staged, should at least show by their freshness that they have come straight from the garden, and it is much to be regretted that anything but fresh samples should be brought forward, if for no other reason than that it prevents insinuations being made for which there may not be the slightest foundation. The Show was fairly well attended, especially in the evenings, and it is to be hoped a small balance may be left for a future event.

BURTON-ON-TRENT.—NOVEMBER 18TH AND 19TH.

THE first Chrysanthemum Exhibition was held in St. Paul's Institute, a building at once handsome, spacious, lofty, and comfortable—comfortable both to plants and visitors, the floor being of wooden blocks placed in echelon, and the room heated by means of hot water. At one end is an orchestra and a beautiful organ, upon which recitals were given each day. The Exhibition florally was a complete success, and would vie in quality of produce with others longer established and of greater renown. The specimen Chrysanthemums—incurved and Japanese—exhibited by Mr. Prince, gardener to the Misses Gretton, Bladon House, Burton, were thoroughly well grown and flowered, and worthy of a place at the best exhibition in the country; these were worthily awarded first prize in each case. The Mayor of Burton (Alderman Lowe) exhibited a very beautiful standard Chrysanthemum (Mrs. Rundle) with a large head of perfect flowers not trained in the stiff manner too frequently seen. The groups of Chrysanthemums arranged for effect down one side of the room were generally of good quality, and presented a huge bank of brightly coloured flowers. The first prize in this class was well won by Mr. Warren, gardener to T. Robinson, Esq.

Cut blooms were well represented and were of good quality, the first prize for twenty-four incurved and twenty-four Japanese being awarded to Mr. J. C. Udale, gardener to H. E. Watson, Esq., Shirecliffe Hall, Sheffield. Mr. Howe of Nottingham was a good second in the class for incurved. The first-prize stand for twenty-four blooms (not less than twelve varieties) incurved, contained fresh, solid, smooth, and symmetrical examples of Alfred Salter, Golden Empress, Jeanne d'Arc, Prince Alfred, Nil Desperandum, Mr. Bunn, Beverley, Beauty, Prince of Wales, Lord Wolseley, Lord Alcester, and Golden Queen of England. The second stand contained very good examples of White Venus, Hero of Stoke Newington, Lord Alcester, Venus, Queen of England, Mrs. Shipman, Isabella Bott, and Lady Slade. In the first Japanese twenty-four (twelve distinct) were capital examples of Elaine, Mdle. Lacroix, Soleil Levant, Thunberg, Roseum superbum, &c. Mr. Wilkes, gardener to G. Meakin, Esq., Stone, was a very good second. Sir Henry Allsopp (gardener, Mr. Barker) sent some magnificent cut flowers not for competition, amongst which the most noteworthy were Prince Alfred, Golden Empress, Queen of England, Empress of India, Jardin des Plantes, Empress Eugénie, and Emily Dale, incurved; and Thunberg, Fair Maid of Guernsey, Japonaise, and Mad. C. Audiguier amongst the Japanese.

Fruit was well shown by Mr. Maynard, gardener to Sir G. Beaumont, Coleorton Hall, and by Mr. Brunt, gardener to the Earl of Carnarvon, Brethby Hall.

Groups of plants arranged for effect, Chrysanthemums excluded.—First Mr. Meakin, second Mr. Brunt, third Mr. Johnson. Mr. W. Fisher, Horn-inglow Cross Nurseries, contributed considerably to the success of the Exhibition by sending a beautiful group of plants not for competition, and consisted principally of a background of Palms, clean and healthy, judiciously intermingled with beautiful Poinsettias, Eucharis, Roman Hyacinths, Azaleas, Chrysanthemums, &c. The same gentleman also exhibited a lovely and exquisitely made cross and wreath, wherein elegance and beauty were combined as they ought to be. Mr. Johnson of the Forge Nurseries also exhibited nice plants not for competition.

Mr. Barratt, the Secretary, deserves all praise for his arrangements, and he has been most ably seconded by Messrs. Rudd, Fisher, Cooper, and Lea.

Messrs. Grant, Draper, Johnson, and Cooper divided honours between them in the cottagers' class.

BRISTOL.—NOVEMBER 18TH AND 19TH.

THIS old-established Society appears to possess greater vitality than ever, and it speaks well for the management that the twenty-second annual Exhibition should be one of, if not the very best held in the Victoria Rooms, Clifton. On the whole the trained specimens were scarcely so good as usual, but there were quite enough to form a long and most effective bank, and the groups of Chrysanthemums and groups of miscellaneous plants completely filled the remaining space round the spacious hall. The best six trained specimens of large-flowering Chrysanthemums were staged by Mr. C. Silcox, gardener to W. Vowles, Esq., Brislington, these consisting of Mrs. G. Rundle, Jardin des Plantes, Alma, Sunset, Guernsey Nugget, and Mrs. Dixon, all fresh and well flowered. Mr. Perry, gardener to H. Cruger Miles, Esq., was a good second, and Mr. J. Lee, gardener to T. M. Miller, Esq., third. Mr. Silcox was also first for three plants, having Mrs. G. Rundle, Mr. Naish, and General Bainbridge in good condition. Messrs. W. Butler, J. Lee, and W. Cooper were the most successful with specimen Pompons, while the prizewinners with Japanese varieties were Messrs. W. Cooper, E. T. Hill, and Miss Charles. The single specimens, as usual, were very fine, and included some of the best pyramidal and globularly trained plants we have seen this season. Messrs. T. M. Miller, E. T. Hill, G. Silcox,

and D. Thatcher were the prizewinners in these classes, and the same exhibitors and Mr. Perry were also successful with small trained and naturally grown conservatory plants. The first prize and silver medal of the National Chrysanthemum Society, offered for the best group of naturally grown Chrysanthemums, was secured by Mr. A. Ambrose, gardener to Kossuth Robinson, Esq.; second, Mr. Salter, gardener to H. Oldland, Esq.; third, Mr. Perry, all having very imposing and well grown groups of plants, though not equal to what are to be seen nearer London.

The collections of miscellaneous plants, arranged on a space 10 feet by 7 feet, are always one of the principal features at the Bristol shows, and this year they were fully up to the mark. Mr. W. Rye, gardener to J. Derham, Esq., Sneyd Park, was awarded the first prize, a somewhat formal but very bright arrangement, including many well-flowered Calanthes and other Orchids, as well as a variety of flowering plants in season. Mr. Perry was a close second; and Mr. E. Miller, gardener to F. Tagart, Esq., a very creditable third. The last-named exhibitor was placed first for six fine-foliaged plants, having immense and very healthy specimens of *Cibotium spectabile*, *Cycas revoluta*, and *Croton undulatum* and other equally well-grown plants. Mr. Rye was a good second, and Mr. A. Hiscock, gardener to A. W. Summers, Esq., third, an extra prize being awarded to the gardener to S. Budgett, Esq. In the corresponding class for four specimens, Mr. Rye was first, J. Lysaght, Esq., second, and Mr. Hiscock third, all having exceptionally well-grown plants. Table plants were shown in great numbers, the majority of them being highly meritorious. Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., was first, Mr. T. Gibson, second, and Mr. W. Cooper, third. Mr. Bannister was also the winner of first prize for Ferns, Mr. Miller being a good second; and with a new and rare plant Mr. Miller was first, staging a well-bloomed *Cypripedium spicerianum*, Mr. Rye following with *Croton princeps*. The prizewinners with Poinsettias were Messrs. E. Miller and T. Gibson, who were placed equal first; with *Bouvardias*, Messrs. Rye, W. K. Wait, and E. Miller; with *Primulas*, Messrs. E. T. Hill, Reuben Bow, and A. Ambrose; *Zonal Pelargoniums*, Messrs. C. Tagart, E. T. Hill, and J. Lysaght; and berried plants, Messrs. S. Budgett, T. Gibson, and W. A. Jones, the competition in each case being close and good.

Cut blooms of Chrysanthemums were shown in great numbers than usual, and with a few exceptions the quality was fairly good. Mr. T. Hobbs was first for twenty-four large-flowering varieties, all to be distinct, but as Empress of India and its synonym Mrs. Cunningham were included, many growers were of opinion that the exhibit should have been disqualified. Besides these there were very good blooms of Prince Alfred, Queen of England, Jeanne d'Arc, Princess Imperial, Prince of Wales, White Venus, Princess of Wales, Lady Hardinge, Golden Beverley, and Barbara. Mr. Ward, gardener to the Earl of Radnor, was a creditable second, and Messrs. W. and G. Droyer third. With twelve varieties of incurved sorts, Mr. E. S. Cole, gardener to W. Pethick, Esq., was a good first, Mr. J. Waite second, and Mr. W. M. Baker third; and in the class for six varieties Mr. W. Iggulden was first and Mr. E. S. Cole second. Messrs. Droyer had the best Anemone-flowered varieties, Mr. E. S. Cole being second. There were two classes provided for Japanese varieties, and these attracted the greatest number of entries. For twelve distinct varieties Mr. W. Iggulden was first, having fine blooms of *Grandiflorum*, *Madame C. Audiguier*, *Mons. Ardene*, *Boule d'Or*, *Belle Paule*, *Meg Merrilees*, *Thunberg*, *Comte de Germiny*, *Fanny Bouchardet*, and *Fair Maid of Guernsey*. Mr. E. S. Cole was a good second, and was also deservedly first for twelve blooms in not less than six varieties, Mr. Iggulden being a close second, and there were several others only slightly inferior. Bouquets, wreaths, vases, and baskets of both choice flowers and autumn leaves and berries were all shown in great numbers, the exhibitors in most cases displaying most commendable taste. The principal prizewinners were Messrs. M. Hoskings, E. S. Cole, E. T. Hill, Miss Wethered, Mr. C. Winstone, Mr. J. Rogers, Mr. H. Mardon, Miss Dobson, and Mr. G. Garraway.

Fruit was largely shown, and included Grapes, Pine Apples, Melons, Pears, Apples, and Medlars. There were eight classes provided for Grapes alone, and in nearly every case the competition was very keen. Mr. Nash, gardener to the Duke of Beaufort, was well to the front, being first for *Alicante*, *Gros Colman*, and any other black variety, his exhibits in each case being of the highest order; and the same may be said of the *Muscat of Alexandria* staged by Mr. Ellicott, gardener to H. W. Tugwell, Esq., and Mr. F. Nicoll, gardener to Mrs. Miller. Mr. Ellicott was also first for *Black Hamburgh*, and Mr. Bannister second, while the best *Lady Downe's* were staged by Mr. C. D. Cave, the second prize going to Mr. V. Down. Mr. W. Taylor, gardener to J. Chaffin, Esq., was also successful in the classes for *Alicantes*, *Gros Colman*, and any black variety not of *Muscat* flavour, his exhibits being most remarkable for good finish. In the last named class Mr. Nicoll was a good first with Mrs. Pince, well finished, and in a corresponding class for white varieties Mr. Rye was first with excellent *Buckland Sweetwater*, Mr. Iggulden following with good examples of Mrs. Pearson. A special prize was offered for the two heaviest bunches of Grapes in the Show, and this was won by Mr. Down, who had immense clusters of *Gros Colman*, each weighing about 8 lbs., but they were badly coloured. There were six competitors with a collection of six dishes of fruit, *Pine Apples* excluded, Mr. Nash being placed first with capital samples, very similar to the collection he had at Bath, and Mr. T. Every was a good second, Mr. W. Bannister third, and an extra prize was given to Mr. Nicoll; the *Black* and *Muscat Grapes* being very good in each instance. In a large class of six varieties of Pears Mr. W. Bannister was first, and Mr. Rye second, and with four dishes these positions were reversed, the fruit, principally grown on bush-shaped trees, being very fine in each case. Mr. Bannister had also the best single dish of Pears, *Marie Louise* very fine, and the best six dishes of Apples. Other successful exhibitors of Apples in the various classes provided being Messrs. J. H. Virgo, E. Hall, E. T. Hill, E. Sweeting, W. M. Baker, and G. Garraway.

The array of vegetables (for which one class only was provided, in the form of a collection of ten distinct varieties) was remarkably good, excelling anything of the kind hitherto seen at Bristol. Mr. E. T. Hill was first, Mr. T. Every second, Mr. W. Bannister and Mr. W. M. Baker equal thirds, and an extra was given to Mr. W. P. Emerton. These were several non-competitive exhibits, the most noteworthy being a grand lot of Chrysanthemum blooms staged by Garaway & Co., Durdham Down Nurseries,

Clifton, and which comprised many new and all the best older varieties. Mr. J. Austin, Witley Court, had several very fine fruits of *Smooth Cayenne Pine Apples*, which attracted much attention. The Show was fairly well attended, and the arrangements were perfect.

LEWISHAM.—NOVEMBER 18TH.

A VERY successful inaugural Exhibition of Chrysanthemums was held in connection with the recently formed Lewisham and District Floral Society in a hall in a central position of Lewisham, on Wednesday last, November 18th. The Society was only formed a few days before the Show, but so energetic were the efforts of the Committee (who are enthusiastic amateurs and City gentlemen) that, although no prizes were offered this year, plenty of friends were found willing to contribute stands of cut blooms and groups of plants, and thus render it an attractive and successful Show. Messrs. J. Laing & Co. of Forest Hill contributed a very fine group of Chrysanthemums, and Messrs. Jones, Jupp, Needs, Stone, Berry, Forrester, Harry, and Drake stands of cut blooms. The last-named gentlemen are amateurs, and their exhibits did them great credit. The public evidently appreciated the efforts of the Committee, for the place was thronged with visitors. With the name of the author of "The Chrysanthemum, its History and Culture" as one of its Vice-Presidents, and Mr. Drake as the able Secretary, this Society will, we hope, prove equally if not more successful another year.

BIRMINGHAM.—NOVEMBER 18TH AND 19TH.

ONLY a very few years ago this Society was, in the estimation of many persons interested in it, in a moribund state, whereas it is now in a strong and flourishing condition. A spirited yet prudent policy has resulted in larger and better shows, greater public patronage, and more satisfactory finances, the last statement published showing a substantial balance, including the reserve fund of upwards of £150. The autumn shows in the Midland metropolis have long been famed for splendid specimen Chrysanthemum plants and *Primulas*, but superior cut blooms of Chrysanthemums were not encouraged nor produced. Fine specimen plants are still grown in the district, and nowhere else can anything approaching such a display of *Primulas* be seen, while now, in addition, the exhibition of cut blooms of Chrysanthemums is one of the greatest of the year.

The Show under notice was held in the fine Town Hall, which was crowded with exhibits and visitors to such an extent as to render more space desirable. As in the case of most, if not all, other shows this year, dwarf-trained Chrysanthemums were neither so numerous nor on the whole so good as have been seen on previous occasions, but groups of untrained plants were added, and these, with beautiful nurserymen's collections, occupied the space effectively. By far the finest dwarf-trained plants were the nine to which £5 was awarded—grown and exhibited by Mr. W. H. Dyer, gardener to Mrs. Marigold, Edgbaston, a well-known and highly successful exhibitor. He was in the first position for six plants, and also for a single specimen. Mr. Martineau, Birmingham, was notably successful in the plant classes, being adjudged first prizes for three large-flowering Chrysanthemums, six Pompons, one Pompon, and one Japanese. The Society offered a special prize of £4 for a bank of natural-grown Chrysanthemums, which was won by Mr. Pattison with a very creditable arrangement, two other collections being staged. In the class for nine stove and greenhouse plants the chief prize was won by Mr. F. A. Walton, while that for six plants went to Mr. Dyer, both exhibiting well.

CUT BLOOMS.—Though there was an extensive display of these there were no stands of a substantial character. The prolonged term of cold weather appears to have retarded the development of the flowers, and numbers of them had not arrived at their best condition, therefore freshness rather than weight was the characteristic of this department; also the chief prize of £10 failed to elicit a response from Liverpool and other distant Chrysanthemum-growing districts. This was all the better for the "local men," and credit is due to them for contributing to the success of the Show, indeed, for making it so superior to the exhibitions of half a dozen years ago. It is gratifying to observe this marked improvement which is the main and ultimate object of promoters of shows. As to attracting distant competitors, or rather the best examples of culture obtainable, that is obviously desirable, but it will be more difficult to secure these in the future by offering, say, a £10 prize for forty-eight distinct varieties. There are several prizes of that nature now-a-days, and exhibitors can "take their choice," and it seems they choose to compete for that sum where it is offered for a less number of sorts. This is perhaps not much to be wondered at, and framers of schedules will act accordingly either in increasing the amounts offered or restricting the number of varieties. At Birmingham the prizes for forty-eight blooms distinct, twenty-four incurved and twenty-four Japanese, fell to Mr. P. Southby, who staged fresh medium-sized examples of the popular exhibition varieties. In the class for twenty-four blooms, twelve Japanese and twelve incurved, there was good competition, the premier award being granted to Mr. G. A. Everett for excellent stands. Mr. H. Lovatt was the chief prizewinner in the class for eighteen incurved blooms with fresh and good examples, most of the others being undeveloped. Mr. Southby was placed first for twelve blooms of Japanese with the best stand in the Show, the blooms being large, fresh, and richly coloured; also for twelve Anemones, the flowers being of average merit. Prizes were offered for blooms grown within three miles and twelve miles respectively from Stephenson Place, and several stands of great merit were placed in competition. Mr. Madeley was the successful exhibitor of twelve blooms within the three-mile radius, and Mr. G. Everett secured the chief prizes for twenty-four and six blooms in the twelve-mile radius. The competition in these classes was very creditable indeed, every stand being worthy of its position in the hall.

PRIMULAS.—There was a magnificent display of these, about 300 plants being placed in competition, and it may be safely said that many of the third-prize collections would have been placed first at the majority of shows in the kingdom. In the open classes all the leading prizes were taken by Messrs. H. Pope & Sons with grandly grown plants, remarkable alike for vigour of foliage and size and freshness of flowers. In the district classes Mr. T. Martineau won the chief prize for twelve plants, Mr. Matthews for six plants, and for three Mr. J. Taunton was the most successful competitor. The plants are generally grown in 6-inch and 7-inch pots, the foliage having a spread of from 18 inches to 2 feet, pyramidal masses of flowers rising in

some instances 18 inches high. The display so far as we are aware has never been equalled at any previous exhibition, and all the exhibitors are to be commended for growing these plants so well.

The first prizes for Epiphyllums, twelve Cyclamens, and Zonal Pelargoniums went to Mr. Cooper, gardener to the Right Hon. Joseph Chamberlain, Mr. A. Clifford being first for six Cyclamens. Mignonette was admirably staged by Mr. T. Martineau, who was worthily adjudged the first prize, Mr. Dyer having a similar award for well-grown Poinsettias. Mr. Cooper arranged a very attractive bank of Orchids, composed of fresh well-flowered plants of *Oncidium verrucosum*, *O. pulverulentum*, *O. Forbesi*, *Cattleya Dowiana*, *C. exoniensis*, *C. Skinneri*, *Odontoglossum biconense*, *O. Alexandræ*, *O. grande*; *Lælia elegans*, very fine; *L. Dayana*, *L. autumnalis*, *Cypripedium Spicerianum*, *C. Sedeni*, *Cymbidiums*, *Calanthes*, *Masdevallia tovarensis*, and *Menopodium vulcanicum*. These, with a number of excellent bouquets, produced a beautiful effect at one end of the hall.

FRUIT.—There was not a very large display of fruit, but the quality was quite first-rate, especially of Grapes, which were wonderfully well finished. The best three bunches of black Grapes were exhibited by Rev. B. W. Stanners; Muscats, Mr. J. Corbett; other white Grapes, Mr. G. A. Everett. In the single bunch class Mr. Corbett was first with black, and Mr. Stanners with white Grapes. Messrs. Corbett and Higgins took the chief prizes for Apples and Pears, staging excellent dishes.

Various miscellaneous contributions of plants, flowers, and fruit contributed powerfully to the general effect of the Exhibition. Mr. Hans Niemand had a charmingly arranged assortment of choice plants and a meritorious group of Cyclamens; Messrs. Thompson & Co. having a correspondingly good arrangement. At the opposite end of the hall a similar extent of space was effectively furnished by Messrs. Vertegans and Pope & Son; the latter also exhibited a seedling Fern, which was certificated. It is evidently a variety of the elegant *Gymnogramma schizophylla*, of strong growth, and with more widely divided pinnae than the type. We understand the stock was secured by Mr. B. S. Williams of Holloway. It will make a most graceful basket Fern, and probably a fine pot plant for decorative and exhibiting purposes. Messrs. Perkins, Coventry, contributed beautiful floral crosses and wreaths, also a box of extremely fresh cut Roses; Messrs. Richard Smith & Co., a collection of small Japanese Conifers in pots, perfect for window-sill decoration, and an excellent collection of Apples; the Rev. J. A. Williams, Aldermaston, also staged about fifty excellent dishes of Apples, and Messrs. Cannell & Sons, Swanley, splendid stands of Chrysanthemums and Pelargoniums, the rich Chrysanthemum Cullingfordi being certificated. The merits of all the exhibits referred to were formally recognised by the Judges.

Owing to the density of the crowd it was impossible to do more than obtain the names of the leading prizetakers in the classes noted, and the great attendance of visitors must have been highly encouraging to all who have laboured so assiduously in making the Show what it was—a great success.

TAUNTON.—NOVEMBER 19TH.

THIS thriving young Society held its third annual Exhibition in the Castle Hall, and is to be congratulated upon the successful results attending the efforts of Mr. R. H. Poynter, and the active Committee of practical gardeners. The early frosts appeared to have worked much mischief in this district, especially among the specimen trained plants, while the cut blooms were much later than they are in presumably less favoured localities, and this, as it happened, gave the local growers a decided advantage in point of freshness over those who came from a distance. Specimen plants were not largely shown, the principal exhibitor of these in the open classes being Mr. H. Godding, who had several prizes for incurved and Japanese varieties. The four best bloomed specimens in the Show were exhibited by Mr. J. Parrish, gardener to Mrs. Eden, the sorts being Fair Maid of Guernsey, Madame Bertie Rendatler, Bouquet Fait, and Peter the Great; and Mr. W. Thomas, gardener to W. Marshall, Esq., also exhibited successfully in this class. Mr. Thomas was also first for a single specimen, staging a well-flowered Peter the Great. Mr. W. Cavill, gardener to H. F. Manley, Esq., and Mr. C. Lucas, gardener to John Marshall, Esq., exhibited well and successfully in several classes for Chrysanthemum plants. Mr. T. Wilkins was first for six untrained plants, Mr. G. Henley, gardener to F. Woodland, Esq., taking second prize, both having freely flowered healthy plants. Mr. Wilkins was also first for a group of Chrysanthemums, and Mr. W. J. Turk was a good second, the exhibits in each case being very praiseworthy.

Classes were provided for groups of mixed plants, and for a group from which Chrysanthemums were excluded. The first prize for the former, a silver cup value £5 5s., was won by Mr. C. Lucas, who had a very bright and pleasing group, which comprised a very strong plant of *Anthurium Andreanum*, *Pancratium speciosum* with ten strong flower-stems, a good plant of *Cypripedium insigne punctatum violaceum*, *Calanthes*, *Crotons*, *Dracænas*, Ferns, Chrysanthemums, and a variety of other plants. Mr. Thomas took second prize for a very excellent lot of plants; Mr. H. Godding was a good third, and Mr. R. H. Poynter was highly commended for a neat lot of plants. Mr. Thomas arranged the best group from which Chrysanthemums were excluded, and his most noteworthy plants were a good specimen of *Croton Johannis* and *Anthurium Andreanum*. Mr. T. Essex, gardener to S. Reynolds, Esq., took the second prize for a lot of healthy plants, but which presented a somewhat dull appearance. The best six Ferns were shown by Mr. Henley, and Mr. W. B. Hellard was a good second, and for the same number in small pots Messrs. Parrish and Mr. Henley were successful. Primulas were shown in great numbers, and the majority of them were good indeed, several strong well-flowered plants of Carter's Holborn Blue being included. Mr. C. Cooper, gardener to C. L. Collard, Esq., was first, Mr. W. Cavill, second, and Mr. J. Wakefield third; and with doubles Messrs. J. Wakefield was first, and Mr. Lucas second. The Cyclamens were remarkably good, notably the first and second prize lots staged respectively by Messrs. Lucas and J. Parrish. The prizewinners for table plants were Messrs. W. J. Crossman, gardener to H. A. Bosanquet, Esq., B. T. James, gardener to Sir W. Lethbridge, and Mr. Hellard, who each had several good plants. The classes for cut blooms, both open and confined to the locality, were well filled, the Judges necessarily bestowing much time in making the awards. The premier prize, that for thirty-six blooms, half to be incurved and the remainder Japanese, was won by Mr. C. Cooper; Mr. Wills, gardener to

Mrs. Pearce, Southampton, taking the second, and Messrs. W. & J. Drover were highly commended. The former's exhibit included fine fresh blooms of Lord Wolseley, Lord Alcester, Golden Queen of England, Mr. Howe, Jardin des Plantes, Lady Hardinge, Hero of Stoke Newington, Empress Eugénie, Princess of Teck, and Mrs. W. Shipman, while some of the best among a generally excellent lot of Japanese sorts were Japonaise, M. Arden, Comtesse Beauregarde, M. Astorg, J. Delaux, M. Delaux, Fanny Bouchardat, and Madame C. Andiguier. Mr. Wills had much the best incurved sorts, but was weak with the Japanese. With twelve incurved and twelve Japanese Messrs. W. & J. Drover and Mr. Wills were placed equal first, the third prize going to Mr. C. Lucas. Some of the best represented incurved sorts were Princess of Teck, Golden Queen of England, Cherub, Barbara, Lord Alcester, Baron Beust, Pink Venus, Hero of Stoke Newington, and Japanese Baron de Prailley, Boule d'Or, Criterion, Golden Dragon, Meg Merrilees, Fanny Bouchardat, Triomphe de Rue des Chalets, and Fair Maid of Guernsey. Mr. C. Lucas had the best twelve incurved sorts, Messrs. Drover being a good second, and Mr. Wills was easily first for reflexed varieties. Mr. C. Cooper repeated his former success with twelve Japanese varieties, his capital lot including fine blooms of Comtesse Beauregarde, J. Delaux, M. Arden, Meg Merrilees, and Golden Dragon. Mr. Thomas was a good second, and Mr. Parrish third. In the other classes for cut blooms Messrs. Cooper, Lucas, Thomas, and Parrish were the principal prizewinners.

Grapes were not largely shown, and of these Mr. T. W. Samson, gardener to the Rev. A. Elton, and Mr. T. B. Hellard were the principal exhibitors; and in the various classes for Apples and Pears the most successful were Mr. A. Tucker, gardener to Captain Winter, Mr. G. Henley, the Rev. J. P. Hewitt, the Rev. E. Woodhouse, Mr. Samson, Mrs. V. S. Reynolds, Mr. Lucas, and others whose names we were unable to procure. Mr. Nicholas, gardener to the Earl Fortescue, Castle Hill, Devon, exhibited a very fine Smooth Cayenne Pine Apple, not for competition, and there were several other interesting non-competitive exhibits.

NEWPORT, MONMOUTHSHIRE.

THE Newport and County Horticultural Society held their second Chrysanthemum Show in the Albert Hall, Newport, on the 19th inst. Last year the Society lost money by the Chrysanthemum Show, but the balance was on the right side at the summer show in July; and encouraged by this the energetic Hon. Secretaries, supported by some enthusiastic members of the Committee, decided to try another Chrysanthemum Show, and if the financial department was as great a success as the horticultural department those who take such a laudable interest in the affair will have good reason to be satisfied with the result. The Show was the finest in the principality or near its borders. Creditable as the first Show held in November, 1884, undoubtedly was, the one just held was of much greater excellence. Indeed, the Newport Show will very soon take its place and be regarded as one of the notable Shows in the kingdom, and the exhibits now sent from Liverpool, Bristol, Bath, and other distant parts indicate the confidence cultivators place in the management of the Exhibition.

The Right Hon. Lord Tredegar gave the first prize in Class 1, which was for six large-flowering plants, and this was won by Mr. George Fothergill with specimens not quite so large as some shown in the same class, but the blooms were extra large and very fresh. Mr. H. J. Davis was second, four of his specimens being very good, but two poorly trained ones were against the success of the group. Mrs. Cartwright, Springfield, was a close third, and some good plants remained unnoticed, although the specimens forming the half-dozen are not uniformly fine. In the class for four Japanese varieties Mr. Fothergill was first with handsome fresh specimens of Mons. C. Huber, Hiver Fleuri, Margot, and Peter the Great. The second award fell to Mr. C. T. Wallis, and the third to Mrs. Cartwright. A very good class throughout. Standard plants were numerous and good: Mr. H. J. Davis being first with four plants rather closely tied in, but profusely flowered. Second Mr. E. J. Grice with plants finely bloomed but deficient in foliage. Third Mrs. Cartwright, with small heads but good flowers. Pompon varieties were not quite so numerous, but some of the plants were excellent. Mr. H. J. Davis and Mrs. Cartwright divided the prizes. The class for four plants, large-flowering, distinct, brought out some fine specimens, and it was here that the largest flowers on any of the plants was to be seen. Mr. G. Fothergill being first with Mrs. Forsyth, Julia Lagravère, Jardin des Plantes, and Plancherone. Mr. H. J. Davis was second. In single specimen plants Mr. H. J. Davis was first with a plant of Mrs. G. Rundle, 5 feet through, finely bloomed. Second Mr. Fothergill with Empress of India, magnificent blooms. Third Mr. E. J. Grice, with King of the Crimson, poor.

Cut blooms were the great feature of the Show; they were magnificent. For the best twelve blooms, large-flowering, Japanese excluded, Mr. H. J. Davis was well to the fore with a grand stand of the following:—W. H. Morgan, Beverley, Prince Alfred, Mrs. G. Rundle, Bronze Jardin des Plantes, Emily Dale, Mr. Howe, Lord Wolseley, Golden Empress of India, Mrs. J. Crossfield, Hercules, and Miss Wetherell. No attempt had been made to dress these, being shown quite naturally, and they won well. Mr. Thomas Hobbs, Bristol, was a good second, but blooms smaller as a rule. In the class for twelve Japanese blooms Mr. E. S. Cole, Bristol, was a grand first with large blooms in fine condition of Album Plenum, Madame C. Andiguier, Grandiflorum, Margaret Marrouch, Sarnia, Meg Merrilees, Baron de Prailley, Fanny Bouchardat, Peter the Great, Fair Maid of Guernsey, Thunberg, and Comte de Germiny. Mr. John Atkins, Liverpool, was second, and many of his fine blooms equalled those in the first stand; but one or two of them had suffered in transit. In the class for six blooms those two exhibitors again occupied their previous positions, Mr. Cole having a very effective six. The second blooms were also good, but not so distinct as the first. Many fine lots in both of these classes were obliged to remain without a special mark of merit, which they certainly deserved.

Prizes were offered for a collection of stove plants, and many competed. They were arranged along the centre of the spacious Hall, and the Chrysanthemums formed a beautiful boundary to them. Mr. E. J. Grice succeeded in carrying off his own prize, and Mr. T. Watson was a close second. Mr. Whitehouse's collection contained a finely grown and beautifully bloomed plant of *Eucharis amazonica*. Poinsettias were very bright from Mr. Watson. Primulas poor. In coming further down the list we find the

honours of the amateurs' section very creditably upheld by Mr. J. Pickford, whose good plants and perseverance in exhibiting may both be taken as excellent examples by his neighbours. Fruit was not very plentiful, only one collection being staged by Mr. Watson. Grapes were fairly good from Mr. T. Colborne, Sir H. M. Jackson, and Mr. Fothergill. Apples and Pears were uncommonly fine from Mr. G. J. Jones, Mr. E. J. Grice, Mr. T. Colborne, and Sir H. M. Jackson.

Vegetables were numerous and excellent. In the main collection Mr. C. T. Wallis and Mr. D. Whitehouse were successful with fine clean samples. Mr. Octavius Morgan, Newport, exhibited a most interesting collection of cut Chrysanthemums, good blooms beautifully embellished with their foliage.

HULL.—NOVEMBER 19TH AND 20TH.

WHEN it is considered that the Hull Chrysanthemum Society has only been established about fourteen months and has held two Shows, the first being attended by about 4000 persons, and resulting in a balance on the credit side of the ledger of nearly £80, and that the second Show just held included some of the best competition of the year, and the leading class the finest we have seen at any show in any year, the success achieved must be regarded as phenomenal. It must be understood our remarks as to the quality of the Show are confined to the open cut bloom classes. Many excellent blooms were staged throughout, but the stands were not sufficiently numerous to occupy the great length of tabling in the enormous space under the roof of the Artillery Barracks, and the plants in an adjoining annex were relatively inferior. These constituted the weak points of the Show, but the groups of plants arranged for effect were very imposing. As to what may be termed the decorative section of the Show—dessert table competition, bouquets, floral ornaments, &c., we can only say it was so attractive that the room was so densely packed with visitors that we were positively "crowded out." The opening ceremony by the ex-Mayor and his attendants indicated the great public interest that manifested in the event, and with a continuance of public support, with such a practical and energetic Chairman as Mr. Bohn, such indefatigable Secretaries as Messrs. Jameson and Hawksworth, and the first-rate Committee, the Society cannot fail to occupy a very high position in the Chrysanthemum world.

CUT BLOOMS.—For these a challenge vase and a challenge cup were provided, the vase in the open class, the cup in a class for amateurs; and the money prizes in the former were of such value as to enable even the third prizewinner to defray all his travelling expenses, and the fourth to have little to lose. The conditions were also such that enables a majority of skilful growers to arrange superior stands.

The Hull challenge vase, value 15 guineas, is offered by the Chairman of the Society, George Bohn, Esq., a splendid contribution, the money prize being £10 in addition. The vase has to be won twice consecutively, or three times altogether, to be finally claimed by the owner of the winning flowers, the money prizes going to his gardener who grows them. This equitable arrangement is the same as in the great cup class at Kingston-on-Thames. But in the Surrey contest forty-eight distinct varieties have to be staged, whereas at Hull thirty-six varieties suffice in the class of forty-eight blooms—namely twenty-four incurved in not less than eighteen varieties, and the same as regards Japanese. The advantage of this is, that no exhibitor can stage forty-eight varieties so fine as he can that number of blooms in thirty-six varieties, because he is enabled to duplicate twelve of his best if he wishes, and, consequently, exclude an equal number of inferior flowers. There are growers too, able to stage thirty-six varieties creditably who could not make up presentable stands in forty-eight varieties. The strength of a chain is only equal to the weakest link, and the weakness in stands of twenty-four varieties of Chrysanthemums is always found in the last half-dozen blooms; the less the number of varieties, therefore, in a class the stronger the stands must be. This is why the great class at Hull was so weighty. There were five competitors—Mr. Lindsay, gardener to Sir T. Edwardes Moss, Bart., Otterspool, Liverpool (first); Mr. W. Mease, gardener to C. W. Neumann, Esq., Wyncote, Liverpool (second); Mr. Green, gardener to J. Woolwright, Esq., Mossley Hill, Liverpool (third); Mr. J. B. Morton, Mowden Bridge, Darlington (fourth); and Mr. Mitchell, gardener to W. J. Warren, Esq., (misprinted "Waverer," in the Lincoln report last week) Bracebridge, Lincoln. The vase thus remains at Otterspool till next November, when Mr. Lindsay will, all being well, no doubt strive for it again, and a few others will strive to prevent him. There is the chance of his flowers not being quite so good next year as this, the chance of those of Messrs. Mease or Green being a little better, and so the scale may be turned, and there is also another chance—of someone else defeating the trio. Mr. Lindsay has come to the front at a bound, and won magnificently, that term applying to the blooms and not to the distance between him and Mr. Mease, who also staged magnificent flowers, but some of the incurved evidently required another week for their full development, or, in a word, Mr. Lindsay's were "in" to the day, and Mr. Mease's were not. That appears to about represent the difference between their incurved, the Japanese being very nearly as close as they could be, the Otterspool blooms only leading by two points out of a possible 144.

Mr. Lindsay's winning stands were furnished as follows, reading each row from left to right—Incurved: back row—Queen of England, Lord Alcester, Empress of India, Alfred Salter, Golden Empress, Empress of India, Golden Empress, Queen of England; second row—Jeanne d'Arc, John Salter, Mr. Bunn, Emily Dale, Bronze Jardin des Plantes, Prince Alfred, Jeanne d'Arc, John Salter; front row—Refulgence, Mrs. Heale, Sir Stafford Carey, White Beverley, Princess Beatrice, White Globe, Lord Wolsley, and Mr. Bunn. Japanese—Madame C. Audiguer, Fair Maid of Guernsey, Criterion, Mons. Tarin, Boule d'Or, Madame C. Audiguer, Fair Maid of Guernsey, Japonaise; second row—Comte de Germiny, John Laing, Boule d'Or, Margaret Marrouch, Elaine, Criterion, R. Ballantine, Peter the Great; front row—Mlle. Lacroix, Thunberg, La Nympe, Soliel Levant, F. A. Davis (J. Delaux), Thunberg, Mons. Desbrieux, and Sarnia. The incurved blooms were generally very large, also firm and symmetrical, and though a few were defective in some point or other the twenty-four secured 115 points of merit out of a possible 144, or an average of $4\frac{1}{2}$ points to each bloom, and this good average was a little more than maintained throughout the Japanese stand. As above intimated, Mr. Mease ran his rival very closely indeed with these, his blooms of Belle Paule, Criterion, Boule d'Or

and Meg Merrilees, being grand examples of high culture, while his incurved blooms of the Queen type, also Jeanne d'Arc, were of similar large dimensions and good quality. Mr. Green's stand contained many handsome flowers, including the premier incurved bloom in the Show—a fresh and beautiful example of Empress of India. We have certainly never seen a collection equal to this placed third at an exhibition before, and such flowers would have been easily first at some other shows where liberal prizes were offered. Mr. Morton also exhibited very well indeed, but both he and Mr. Mitchell were overweighted, and the Lincoln blooms had, moreover, lost their freshness.

The first three exhibitors named held the same relative positions in the next class of twenty-four blooms, twelve incurved and the same number of Japanese in not less than nine varieties of each, the first prize being £5. The stands were extremely fine throughout, and the competition close. In Mr. Mease's the premier Japanese bloom of the Show was found, a beautiful example of Belle Paule being selected in preference to a bloom of the same variety in his forty-eight, because of its smoother and broader florets, though the other was a little deeper in colour. There was no alteration in the winners in the excellent class of twelve blooms of Japanese. In the class for twelve incurved blooms, distinct, there was great competition, the prizes falling to Mr. Mease, Mr. Green, and Mr. Usher, gardener to C. H. Johnson, Esq., Thorgumbald Hall. Three very even and good stands of large Anemone-flowered varieties were exhibited by Mr. Morton, Mr. Bulmer, gardener to D. Wilson, Esq., and Mr. Mitchell, who were awarded the prizes in the order named, there being little to choose between the merits of the collections. Very rich stands of reflexed varieties were staged—twelve blooms in not less than six varieties, Mr. Morton securing the foremost place with two flowers each of Cullingfordi, King of the Crimsons and Chevalier Damage, and one each of Mrs. Forsyth, Sir E. Landseer, and Jewess. Mr. Bugg, Lincoln, and Mr. Usher followed closely in the same class. Mr. Mease staged the best six blooms of any variety—wonderfully well-coloured examples of Bouquet Fait, Mr. Mitchell following with Elaine. The competition in the above classes was open to all.

Four classes were provided for exhibitors in Lincolnshire residing within twenty miles of Hull or anywhere within the East Riding of Yorkshire. In the first of these, for twenty-four blooms, half incurved and half Japanese, in not less than six varieties of each, the first prize, given by Mr. E. P. Dixon, was well won by F. W. Jameson, Esq., with extremely fresh incurved examples, but not quite developed, and good Japanese, Mr. Bulmer being second with rather small but neat, solid flowers, and Mr. Leadbetter, gardener to Arthur Wilson, Esq., Tranby Croft, third with much larger but loose blooms. E. Harland, Esq., Cottingham, secured the first position in the class for twelve incurved blooms, very closely followed by C. H. Johnson and F. W. Jameson, Esq. In the corresponding Japanese class Mr. Bulmer, Mr. F. W. Jameson, and Mr. Brownsho, Beverley, were the prizetakers; and in the mixed class Mr. J. Tall, Cottingham, Mr. Bulmer, and Mr. J. W. Jameson, the former staging among others one of the finest Elaines of the year.

Several prizes were offered for amateurs, or persons who do not employ a gardener, but we can only note that the first prize in the two classes for twelve incurved and twelve Japanese blooms was won by E. Goddard, Esq., with highly creditable examples, and the more so since the owner had only fifteen incurved blooms altogether, and one of them was spoiled by an accident. A challenge cup has never been won under such conditions before. It has, however, to be won twice consecutively, or three times altogether, to be permanently retained. It is given by the Hull Amateur Floral and Horticultural Society.

PLANTS.—We can only say as regards what are known as "specimen" plants that those exhibited were with few exceptions very far below the average standard of merit, the best—and some of them were healthy and well flowered—being exhibited by Messrs. Wood, Bulmer, Raby, and Tall. All the best were trained without twisting the stems, the few where dwarfing was attempted being tied down too closely and too late. The bending should be done at the lower part of the stems, so that the twisting is obscured by the foliage above—i.e., of the shoots bearing the blooms; tying down the stems just under the flowers being a great mistake almost invariably made by the inexperienced—hence this hint.

Far more commendable and decidedly effective were groups of Chrysanthemums interspersed with foliage plants arranged for effect in a space of 100 square feet. In addition to the first prize of £5, a framed oil painting of Chrysanthemums of the same value was offered to the winner by Mr. J. F. Norton, artist, Hull. There were five competitors, and right well did they contribute. The premier position was secured by Mr. H. Bulmer for a very bright and effective arrangement, chiefly of Chrysanthemums of excellent quality both as regards blooms and foliage, and the colours well associated. They were relieved with light touches of slender Palms and Dracenas up to a central plant of Cocos Weddelliana next the wall, and 9 or 10 feet above the floor. The semicircular group was finished with Crotons, Dracenas, and other dwarf ornamental plants margined with Panicums and Ferns. The effect was rich, yet not devoid of elegance by the admirable balance of the whole, and an absence of extreme packing and overcrowding. The second prize group of Mr. Graham, gardener to George Lawson, Esq., Newland Grove, Hull, was also of considerable merit, and, in fact, very nearly equal to the other. Mr. G. Cottam, Anlaby Gardens, was awarded the third prize with a smooth showy arrangement, but rather heavy towards the edge; and Mr. Howell, gardener to Lieut.-Col. Saner, the fourth for a mass of flowers rising to 10 or 12 feet high, and a few Palms interspersed. Another group was too "sticky" and formal, the remaining one free and elegant but somewhat lacking in diversity. The several groups contributed powerfully to the general effect, were of the right kind for the building, and it is a question worthy of consideration as to whether smaller groups should not be encouraged as well.

An extensive and excellent miscellaneous collection of plants was admirably arranged by Mr. E. P. Dixon, not for competition, and Messrs. Martin and Son had a very attractive display. Admirable collections of fruit were contributed by Messrs. James Dickson & Sons, Chester, and Messrs. Richard Smith & Co., Worcester; and Messrs. Cannell's stands of single Chrysanthemums and Zonal Pelargoniums were greatly admired by the great concourse of visitors, of whom nearly 7000 attended the Show.

The directors of the Hull Chrysanthemum Society are to be congratulated on what they have accomplished, and they deserve all the support that can be accorded them in furtherance of their object—the superior culture of Chrysanthemums among all classes of society.

WINCHESTER.—NOVEMBER 17TH AND 18TH.

THE third annual Chrysanthemum Exhibition was held in Winchester on November 17th and 18th, in the Guildhall, a building well adapted for such a purpose. The Show was a decided advance on its predecessors as regards quality and general excellence of cut blooms and plants. The two most noticeable features were the grand blooms exhibited by Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham. The specimen plants shown by Mr. Joy, Shirley, Southampton, were a fine example of cultural skill. The plants, fourteen in number, averaged about 5 feet in diameter, splendidly flowered, with good foliage; in fact, we have not seen better this year. Mr. Neville, gardener to Mr. Flight, Cornstiles, Twyford, staged a good group of Chrysanthemums, well arranged in a half circle, devoid of that flat formal style often seen in Chrysanthemum groups. His cut blooms were above the average quality. Fruit were not shown in large quantities. Vegetables were very good and above the average. Much praise was gained by the Hon. Secs., Mr. R. Porter and Mr. John B. Colson, for the way in which they managed the Exhibition.

The following is a list of the principal prizewinners:—Twenty-four cut blooms, distinct, sixteen incurved or reflexed and eight Japanese.—Five competed in this class, but it was an easy victory for Mr. E. Molyneux, gardener to W. H. Myers, Esq. The following is the list read from left to right:—Back row—Madame C. Audiguier, J. Delaux, Fair Maid of Guernsey, Boule d'Or, Belle Paule, good; Thunberg, Meg Merrilees, fine. Middle row—Lord Alcester, grand; Hero of Stoke Newington, Queen of England, fine; Emily Dale, Empress of India, Princess of Wales, Golden Empress, good. Front row—Prince Alfred, Princess of Teck, Mr. Howe, Cherub, Lord Wolseley, Lady Carey, a fine bloom. Mr. Neville, gardener to Mr. Flight, Cornstiles, Twyford, came second with even blooms of incurved, the Japanese being rather small. Third Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury. Twenty-four cut blooms, not less than eighteen varieties.—Mr. Molyneux was again first, Mr. Neville second, and Mr. Pope third. For twelve cut blooms, incurved, Mr. Molyneux was also first, Mr. Neville second, and Mr. A. Bridger, gardener to Colonel Martin, Flectlands, Fareham, third. For twelve cut blooms, reflexed, not less than eight varieties, Mr. Molyneux was decidedly ahead with fine blooms of Golden Christine, Dr. Sharp, Pink Christine, and Mdle. Madeline Tezier. Twelve cut blooms, not less than eight varieties.—First Mr. Trinder, gardener to Sir Henry Mildmay, Bart., Dogmersfield Park, with clean even blooms. Second Mr. L. Jennings, gardener to J. Freeman, Esq., Forest Lodge, Farnborough, and Mr. A. Bridger third. In the class for twelve cut blooms, not less than eight varieties, for those who never won a prize for Chrysanthemums, the prizewinners were Messrs. Trinder; A. C. Smith, Havant; and J. Wareham, gardener to Mrs. T. Gunner, Heathfield, Winchester.

The best six double Primulas were from Mr. T. Hunt, gardener to Mrs. Warner, Northlands, Winchester. The best six berried plants from Mr. E. Astridge, gardener to W. Barrow Simonds, Esq., Abbots Barton, Winchester, and the best six dinner table plants from Mr. Molyneux.

Grapes were well shown by Mr. Molyneux; Mr. James Clark, Westwood, Wilton, Salisbury; Mr. G. Mildon, gardener to Mrs. Turner, King's Worthy; Mr. C. Warden. The leading collection of fruit, not less than six dishes, came from Mr. A. C. Smith, Havant, Apples and Pears being well shown by Mr. L. Jennings; Mr. J. T. Philpott, gardener to Mrs. Cornish Browne, Twyford Lodge; and the Rev. C. Wickham, Compton. For collection of vegetables, eight varieties, Mr. R. Lye, Sydmonton Court, Newbury, was first, the competition being very close. Mr. Pope was a good second, and the third place was taken by the Very Rev. the Deau, The Deanery, Winchester.

For best group of miscellaneous plants, arranged for effect (not open to nurserymen), first, J. E. Axford. The arrangement of this group was very good, though rather too much packed in the cotton.

For the best collection of Chrysanthemums grown in pots, arranged in a space 8 feet by 6 feet, quality and general effect to be the leading features, the group staged by Mr. Neville was remarkable for size and quality of flowers, the most noticeable being Comte de Germiny, Mdle. Lacroix, Album Plenum, and M. Tarin. Mr. A. Prouting, gardener to Miss Butler, St. Thomas Street, Winchester, was a good second. Mr. Joy staged grand specimens of six plants, single stems, distinct varieties, 5 feet in diameter. Here Mr. Joy had six grand plants of Japanese, some of the finest we have seen this year, the average size 5 feet in diameter, with fine foliage and splendidly flowered, of the following varieties:—Bouquet Fait, Album Plenum, Peter the Great, Hiver Fleuri, Madame Bertie Reudatler, and Fair Maid of Guernsey. Other prizes were taken by Miss Butler, Mr. Joy, and Lady Waterhouse. For the most tastefully arranged single stand of Chrysanthemum cut blooms and foliage suitable for table decoration, Miss Bessie Flight took the first place with a very tasteful stand. For the most tastefully arranged single stand of cut hardy shrubs, Ferns, and Grasses (grown out of doors) suitable for table decoration, first, Miss Flight, Cornstiles, Twyford, with a beautiful and well arranged stand, and Miss Bessie Flight second.

SHEFFIELD.—NOVEMBER 20TH AND 21ST.

THE first Exhibition of the Sheffield and West Riding Chrysanthemum Society was held on the dates named in the Corn Exchange—a very capacious and well-lighted building, admirably adapted for a large show. The Show under notice was not large, so far as it was composed, at least, of the products arranged in competition for the prizes, but an extraordinary display composed of Conifers, greenhouse Rhododendrons, Orchids, and various other plants from the nurseries of Fisher, Son, & Sibray, assisted to furnish the huge building in a most satisfactory manner. It is impossible to speak too highly of the consignment from Handsworth, for assuredly such an extensive and varied collection of hardy and tender plants is rarely seen at a public exhibition.

The objects of the Sheffield and West Riding Chrysanthemum Society are concisely stated in the rules thus:—"It shall have, for its objects the promoting and improving the cultivation of the flower—firstly, by holding periodical meetings in March, May, August, and December, at which meet-

ings essays shall be read and discussions initiated upon the best modes of cultivation; and, secondly, by holding annually in November, in some convenient public building, an exhibition of the flower, at which open classes shall be provided, and all classes of exhibitors be allowed to compete for the prizes to be offered." And further, it is reasonably stipulated that "All exhibitors in the open classes, not being members of the Society, shall, on being paid their prize money, have 5 per cent. deducted therefrom as entrance fee to such classes. Patrons and members shall be free to all classes." The Society has for its President Mark Firth, Esq., the worthy inheritor of an honoured name, an influential body of patrons, and a practical Committee, with Mr. J. Walker as Chairman and Mr. W. K. Woodcock as Secretary.

The schedule was a modest one, being composed of nineteen classes, five of them open to all, even for district gardeners, three for amateurs, and a similar number for cottagers.

The chief prizes in the open class were £5 for a group of Chrysanthemums and other plants, £5 for twenty-four incurved Chrysanthemum blooms distinct, and a similar amount for the same number of Japanese blooms, with graduated amounts for second and third prizes. The method of dividing the two sections of cut blooms appears good, as the same exhibitor can stage in both and win both if his flowers are the best, and so secure the £10, while both the incurved and Japanese blooms can be judged on their merits in each case, instead of having to strike an average between a good stand of one and an inferior stand of the other, a by no means impossible contingency.

In the first open class—a group of Chrysanthemums interspersed with foliage plants arranged for effect, on a space of 100 square feet—the chief prize was won by Mr. W. K. Woodcock with excellently grown plants tastefully disposed, the centre a Cordylus with Palms, Pandanus, &c., associated with large-flowering and Pompon Chrysanthemums margined with Ferns. Mr. Walker, gardener to B. P. Broomhead, Esq., followed, his group including some well-grown and trained specimens, to one of which the National Chrysanthemum Society's medal was awarded as being the best plant in the Show. The same exhibitor secured the first prize for six trained specimens with fresh and good examples, followed by Mr. Woodcock. In the open class for twenty-four incurved blooms, distinct, the first prize was well won by Mr. H. Broomhead, an amateur cultivator, with uniformly neat solid examples of medium size, and, with two or three exceptions, very fresh. Mr. G. Mease, The Gardens, Victoria House, Dunkinfield, was second with an unequal stand, some of the blooms large, others small and rather rough. The third prize fell to Mr. J. Walker with generally neat and clean, but half a dozen small, examples and about the same number somewhat rough; still, the competition was extremely close. The National Society's medal was won by Mr. Mease with a well-finished medium-sized flower of Golden Empress as the best bloom in the Show. In the corresponding class of twenty-four Japanese blooms, Mr. G. Mease was first with a very good stand indeed, in which Belle Paule, Japonais, and Val d'Andorre were conspicuous by their merit. Mr. H. Broomhead was second, having, among others, fine examples of Criterion and Comte de Germiny, and Mr. Woodcock third.

In the district class of twelve incurved blooms Mr. Wainwright was placed first with wonderfully fresh and clean examples with broad petals, but a week too young. The same remark applies to the second-prize flowers of Mr. Woodcock, which had not had time to develop or "fill up," third Mr. Walker. The prizes in the corresponding class fell in the same order, but Mr. Woodcock pressed his leader more closely, staging Flamme du Punch in brilliant condition. British Ferns are well grown in the neighbourhood of Sheffield, and good prizes were offered for thirty-six plants arranged for "effect." Following the conditions of the schedule, the prizes were awarded to Messrs. Newsham, Davey, and Eadon in the order named. Had the prize been offered for the best plants, Mr. Eadon would have been first instead of last; if for the choicest variety Mr. Davey would have had the premier position. It can only be said that all the collections were meritorious, but the greatest taste in arrangement was displayed by Mr. Newsham and the best "effect" produced by his plants. This, after a long and close examination, was the unanimous verdict of the Judges, though it is not at all unlikely it might cause a little surprise. Prizes were offered for Grapes, the best black bunches being staged by Mr. Holland, gardener to D. Gilmour, Esq., very good indeed, followed by Messrs. Collier and Wainwright; Mr. Whitely, gardener to Thos. Jessop, Esq., being the only exhibitor of white Grapes.

Wonderfully neat and well-finished incurved Chrysanthemums were extensively staged in the amateurs' and cottagers' section; indeed, there was a smartness about the blooms that was to a great extent lacking in the larger classes. Mr. Udale exhibited his blooms, not for competition, that had been successful a few days previously at Burton-on-Trent, and the incurved flowers were the best in the Exhibition; they were highly commended, and similar marks of approval were accorded for a fine Cypripedium exhibited by Mr. Pidsey, and a good specimen of Asparagus plumosus by Mr. J. B. Hague; also for attractive groups of plants arranged by John Eaton, Esq., and Mr. Seagrave, while the gigantic contribution from Handsworth was commended in the highest possible terms as being especially meritorious.

VENIDIUM CALENDULACEUM:

THE specific name of this plant is so far appropriate that some may suspect it to be an old acquaintance, but although it certainly resembles in colour and form some of the Marigolds, botanically it is sufficiently distinct. In the Calendulas, of which the common Marigold may be taken as a type, the involucre surrounding the flower head is composed of many narrow, pointed, erect leaflets, nearly equal in size, and arranged in one series. In the genus Venidium the scales of the involucre are of two kinds: those composing the innermost series immediately next the florets of the ray are of an oval form, with a thin transparent colourless margin; external to these are several rows of imbricated scales of a

narrower form, and covered with shaggy hairs, especially at the tip, which is reflexed.

The seed is also of a different structure to that of the Calendulas, as the accompanying figure will show. The Venidiums are more closely allied to the old genus *Arctotis*, with which some of them were formerly incorporated; but in *Arctotis* the seeds are furnished with a chaffy pappus, an appendage which appears to be wanting in *Venidium*.

The present species is a dwarf annual plant, not often exceeding, even when in flower, 5 or 6 inches in height; the radical leaves are of a broadly ovate, almost orbicular form, with a sinuate margin, and long foot-stalks more or less winged at their edge; the whole leaf, but especially its margin, nerves, and petiole, being clothed with long white, clammy, spreading hairs. The leaves at the base of the flower stalk are of a similar form, but rather narrower, and have their petioles more winged; those higher up are sessile, becoming more pointed as they approach the flower.

The blossoms are produced singly, of which each plant yields a cor-



Fig. 78.—*Venidium Calendulaceum*.

siderable number. As those which spring directly from the root fade, others are developed from the axils of the stem leaves.

The circumference of the flower head is composed of about fifteen to twenty strap-shaped florets, arranged in a single series and of a fine light orange colour; they bear no stamens, but only a short style terminated by a stigma, divided into two broad black lobes. The florets of the disc, or central portion of the flower, are tubular, and contain both stamens and style. Before the tubes open the disc is green, but as they expand it assumes a blackish purple tint, which is due to the black tips of the segments of the florets. The character of the scales of the involucre has already been explained, as well as the absence of the pappus, so peculiar to most Composite plants. The receptacle on which the florets are seated is slightly pitted, but otherwise quite smooth, or naked as it is termed in botanical parlance. When fully expanded the flowers are about $1\frac{1}{2}$ inch in diameter. They will open in diffused light, but usually close about two o'clock.

Venidium calendulaceum requires the treatment of most other half-hardy annuals, such as Zinnias, Stocks, Asters, &c. There are several other species, chiefly of perennial duration. All of them, as well as the present plant, are natives of the Cape of Good Hope.—T.

JOHN DOWNIE GRAPE.

My opinions are not in "touch" with those of Mr. McIndoe when he thinks it "odd" that I should not have reported my experience with this Grape last year instead of this season. I think it would be well if

cultivators always took longer time to praise or censure the merits of new horticultural products than the first season in which they have had trial of them. Most of us know well what material changes often take place when a fruit or flower has been grown a few seasons, especially when circumstances may have been untoward, or *vice versa*. Some striking illustrations are before us while we write. Gros Maroc, which has grown extra fine in berry with us, but with flavour little better than I have tasted it elsewhere. Last year the berries were oblong and somewhat hammered; this season they are as round and smooth as ever I saw Grapes.

I have every confidence in the integrity of Messrs. Dunn and Downie, and believe it is possible that the Grape to which reference is made may have been sent inadvertently instead of the *bonâ fide* one. I had my Vine sent gratis with the express wish that I would test the fruit in our new vineries.—M. TEMPLE.



KITCHEN GARDEN.

MUSHROOMS.—We do not attempt to grow these all the year round. When vegetables are plentiful they are not much valued in summer, and as autumn comes on we generally gather a large quantity in the park; but now and during the entire winter the house Mushrooms are in great demand, and we try our best to have them daily from the end of October until April. At present we have them unusually good, and this we attribute in a great measure to the excellency of the spawn. Without first-rate spawn abundance of the best Mushrooms will never be produced. The utmost care should be exercised by seedsmen to have this good, and no one should buy any but genuine bricks. The whole crop depends on the quality of them. We have known much labour thrown away and material lost by working with bad spawn. Just now one of our best beds is in the potting shed. It is a lean-to house with a bench in front, a pathway in the middle, and a pot bin at the back, and it is here the bed is formed and the Mushrooms are coming in hundreds. This bed began to bear five weeks after spawning, and others which have been added to it for a succession promise to be equally quick and sure. We exclude light and keep off cold draughts by covering them with a thick coating of hay. We have tried the open-air culture, but prefer this simple shed plan in winter. The Mushrooms are much finer and more of them than when cultivated in a specially heated Mushroom house. More beds should be formed to bear in January and February. The produce will be very acceptable then, as vegetables will be scarce. Have the manure moderately well dried and spawn and soil it before the temperature falls below 85°. When the manure is in good condition we spawn on the same day as the bed is formed, and soil over immediately afterwards. Beds which have been bearing for some time should have a good soaking of manure water heated to 90°. That from the cow sheds or manure is excellent. Cover with hay immediately, and a strong abundant second crop will soon appear.

MUSTARD AND CRESS.—As other salad plants become scarce these will be more wanted, and weekly sowings should be made. We use shallow boxes, 15 inches wide and 3 feet in length, for sowing in at this season. Rich soil is put in to the depth of 2 inches or 3 inches, and the seed is simply put on the surface and the box placed in a warm house. By sowing one or two boxes a week a constant succession may be kept up, and as a box may be stood here and there in any odd corner the expense of culture is not great.

BETROOT AND CARROTS.—Where taking up these useful roots has been delayed, no time should now be lost in getting them under cover. The Carrots will stand much frost, although it does not benefit them, but the Beet is very easily injured, and one sharp frosty night may ruin an unprotected crop.

HEELING BROCCOLI.—Those which have formed small heads or about to fruit should be lifted with a good ball of soil to the roots, and be laid in close together in trenches facing the north. This retards them from coming all in at once, and it also protects them greatly, especially if their position is a sheltered one. They are also easily protected in very severe weather, as, being laid in close together, the whole can be covered over with mats, bracken, or straw.

CHICORY.—We have just lifted a quantity of roots of this and planted them in 10-inch pots. Probably before this is in print they will have been placed in a semi-dark place under the stage of a warm pit, and here they will soon grow and produce a large quantity of excellent salad material. Where there are plenty of roots forcing is easily done, and with plenty of Chicory and Mustard and Cress there will be no scarcity of salads in winter.

FORCING.—Continue to introduce Asparagus roots. Growth will be rapid and certain with a bottom heat of 85°. When kept near the glass the heads will always be robust and excellent in flavour. Cover more Rhubarb and Seakale; both will be in at Christmas if attended to at once. Lift and pot a quantity of Mint and Tarragon roots. Place them in a temperature of 70°, and the tops will soon be large enough to gather.

WHEELING MANURE.—Digging and trenching should now be the standing orders for all favourable opportunities of advancing kitchen

garden work. Where the quarters are vacant it is a mistake to allow such operations to stand over until spring.

FRUIT FORCING.

FIGS.—Early-forced Trees.—If the house is still open it should now be closed, and before any attempt is made to excite the trees the roots should be repeatedly watered with tepid water until the soil is thoroughly moistened. Although the Fig may be started at a high temperature, the most satisfactory results are obtained where the houses are closed early, and the roots and fruit are allowed to advance steadily under the influence of moist and genial heat from fermenting materials placed in near proximity to the pots. Oak or Beech leaves being used, they should be worked and fermented before they are introduced, and for some time afterwards they can be watched and allowed to lie loosely, until the heat declines to 70° or 75°, which must be the maximum about the roots or pots. The night temperature may range from 50° to 55°, with a rise of 5° to 10° by day, when a little ventilation at the top of the house will allow the vitiated air to escape. The trees will require syringing with tepid water two or three times a day, and moisture must be secured at night by damping the floor at 8 or 9 P.M., when the conditions outside favour the rapid escape or condensation of moisture at this changeable season. A little fire heat will be necessary to maintain the temperature required, but it is advisable to keep the temperature down in cold weather, and accelerate growth at a later period, when the weather is more favourable.

Succession Houses.—Take advantage of wet days for getting succession houses ready for starting when the proper time arrives. In the case of trees in pots, take care that the roots do not become too dry during the season of rest. When the tree are planted out in borders the danger is easily met, as the roots can be watered if necessary, and well mulched with manure after they are cleaned and tied to the trellis.

Fig trees in unheated houses should be loosened from the wires and be drawn from the lower part of the wall, and be protected with a little dry straw or fern, so as to save them from injury in case of severe frost.

CUCUMBERS.—In consequence of maintaining a moderately high temperature the moisture has had to be increased, and as the parching influence of highly heated pipes is injurious, hence the covering of the house at night with mats is not only a means of economising fuel, but secures a more genial atmosphere and equable temperature than can otherwise be obtained. Cucumbers when swelling their fruits like liberal treatment, hence copious supplies of tepid diluted liquid manure should be given as necessary. Plants that have plenty of roots and are making growth freely will take copious supplies; indeed there is no fear of over-watering provided the drainage is perfect and the bottom heat is maintained at 80° to 85°. Remove the male flowers as they show, reserving a sufficient number for setting purposes; avoid overcropping, and do not stop very closely for the next few weeks, but avoid overcrowding, and maintaining a successional growth, so as to secure a succession of fruit. The night temperature should range from 60° to 65° when the weather is severe, and 5° more on mild nights, the day temperature 70° to 75°, and an advance of 5° to 10° from sun heat.

STRAWBERRIES IN POTS.—Since our last calendar under this head was written the temperature has fallen to 20°, and though the plants have not had any protection, it is well to have a supply of dry soft straw or bracken at hand, ready to scatter over the plants when the weather is severe. It should remain over the plants so long as they are frozen, but removed whenever the weather is mild. In severe weather the roots are frequently displaced by its action, and when the thaw comes a derangement of drainage ensues if they do not settle into their proper places, which should be seen to and rectified. It is important, as the forcing season is upon us, to have a number of plants at all times in readiness to be prepared previous to introducing them into the forcing-houses to succeed those that are already started. The beginning of next month is soon enough to start early varieties, which are to afford ripe fruit early in March next, but it is well to afford time for the plants to be forwarded gently in the early stages; indeed, slow forcing is the great secret in early Strawberry growing, and, except where there is a pressing demand for early fruit, or the plants are in fine condition for starting, it is better to defer forcing large quantities until the new year.

Plants in bearing and advanced for ripening will require increased vigilance to keep the fruit from damping; indeed, watering should be done only on the morning of fine days, when ventilation can be given to dry up the atmosphere before night, and in foggy damp weather great care will be necessary where fruits are ripening.

THE BEE-KEEPER.

NOTES ON BEES.

WAX EXTRACTOR.

No one who has been accustomed to melt down his combs, and so extract the wax by the patience-trying method commonly used in many districts, can form any conception of the practical benefit, both in saving of time and of wax, accruing from the use of an extractor. To me no process was more obnoxious than the reduction of old comb to wax—now it is a pleasure. No comb is so old as not to yield some

wax, and by this simple machine the blackest as well as the whitest comb yields its full modicum of wax alike easily and well. It is true that it is necessary to run it through more than once, but for my own part I think that when once the wax is obtained quite clear from bee-bread, honey, brood, and all other foreign substances, boiling down in a little clear water gives the best result. The wax-extractor has often been described, and can be seen in any of the catalogues of dealers, but it may not be useless to give some idea of its construction, which is not very elaborate. It consists of an outer tin cylinder having a dish inside communicating with an outlet, through which the wax as it is melted runs into the vessel placed for its reception. Between this dish and the outer cylinder there is a space to allow the steam to pass up. About an inch from the bottom of the dish a perforated tin basket is placed, supported on three pieces of metal. The perforated cylinder is of course of a size rather smaller than the dish, as otherwise the wax would trickle down into the water and so cause no little trouble and loss. When it is intended to use the machine the perforated cylinder must be filled with the comb it is desired to extract from, and the whole apparatus placed on a pan of boiling water and put on the fire. The outer tin and the saucepan ought to fit as closely as possible in order to retain all the steam and so facilitate the operation. Those who have an eye to their own interests will have a saucepan made which, while doing duty as a boiler for the extractor, will also be useful for making syrup or any other necessary which requires the aid of a fire. If they already have such a pan then they will adapt the wax machine to the pan and so save some little expense; but one thing is very necessary, and that is not to get an extractor of less dimensions than a foot deep by 8 or 9 inches across for the perforated cylinder, the rest of course being in proper proportion.

HONEY BOTTLES.

These are still somewhat high in price, so that bee-keepers are under a disadvantage in this respect. The kind of thing required is a receptacle at once cheap, neat, and pretty; and although I have never made the suggestion to any dealer in appliances, it has often occurred to me that a flower vase of elegant construction, yet simple, might be produced at a rate as cheap, if not cheaper, than the bottles now so commonly used; and if such a production could be obtained many who now regard the price of the bottle as a great drawback would think much less of money spent in buying one article which would really obtain two—that is to say, honey in a pretty glass, and after the honey is used an elegant flower vase.

RACES OF BEES.

The most interesting article I have read for many weeks was one in the issue of 20th August last—"Notes on Bees." It was instructive and amusing, and I had ventured to hope that a table showing the result for the year from stocks of the different kinds of bees there mentioned might have appeared in print; if such a table could be given it would be of immense advantage, as by comparison some little idea could be formed of the honey-gathering powers of English and alien bees; as several kinds being in one apiary, each one probably with the same advantages, attended with the same master hand, a good field for observation is afforded. The concluding part of the article was indeed a dreadful tale of bad temper on the part of the bees. Now I often have a stock myself which, though to all appearances similar as regards its bees to the rest, shows unmistakeable signs of wicked spirit. Stinging whenever anyone approaches it makes all operations in the apiary anything but pleasant. Sometimes I fancy it is caused by a chance cross of the queen, for all manipulations are carried out with studied quietness. Never yet have I succeeded in curing such a stock. "Dummies" have been tried, and such other means as have from time to time suggested themselves to my mind, but with little good. Is there any cure for bees which, whenever approached, seem to think it the great object to see which can be the first to implant a

sting in the most tender part of the wretch who dares to approach within five yards of their hive? If anyone can throw out a suggestion it shall have a good trial next spring, for, unluckily, winter never effects the slightest change, as some people whom I have met with imagine it may do.

COTTAGE BEE-KEEPERS.

Is this class of bee-keepers gradually increasing or dying out? For my own part I am quite uncertain whether the strides made of late by modern bee-keepers have conduced so much to an improvement in cottage bee-keeping. The bar-frame and other appliances seem to have so changed the order of things appertaining to bee-keeping that, instead of cottagers getting the benefit of the change, others have stepped in, and to some extent subverted the very class to whom bees ought to be a means of getting increased comfort and pleasure. Simplicity is dying, sacrificed at the altar of Trade! Myself—by necessity a small bee-keeper only—away from home from early morning till late in the evening, I can keep but few stocks, and these must be managed upon a simple method not requiring too much time and attention. So, too, the labourer. A few stocks are all that he can manage, and as for spreading brood and all such delicate manipulations, they appear to him to be quite out of his sphere. I sympathise with the cottager in his efforts to assist himself, and always advise him to follow the method requiring least time and attention, provided such system gives a good yield of honey without destroying the bees. In doing so he always has my best wishes, and any assistance it is in my power to give he may claim without hesitation, and I feel sure that others too—and more able—will give his position their most careful consideration.—FELIX.

GENERAL MANAGEMENT OF BEES.

FEEDING.

THERE is one phase of feeding absolutely necessary if safe wintering is to be expected. The pollen or honey has a tendency to cause abdominal distension, and bees from certain moors, and before the winter is far advanced, are often swelled to an enormous extent, and show signs of distress, not from dysenteric symptoms, but constipation. That some kinds of Heather have this effect where there is little pollen I have long since proved, but the most serious cases are always those that have much pollen. To avert any calamity from this cause, whenever the bees are brought from the Heather a portion of their honey should be removed and sugar given instead, as much as will tide the bees over till January, when all danger will be past. Although bees having nothing but sugar in store to feed from are mostly healthy and free from disease, still there is nothing like the produce from Heather for breeding purposes; while the fact that bees are healthy on sugar alone throughout the winter negatives the assertion that bees require pollen to restore waste of tissue.

Dysenteric distension is mainly due to cold through draughts or damp. Watery honey, which has fermented and become acid, also brings about that disease. Bees have the power of changing a full stomach of honey into carbonic acid and water in a very short time after it has been swallowed, and if an airing cannot be had death ensues. A very slight disturbance during the winter months causes bees to fill themselves, resulting as above. I may now ask the question, How can a hive be opened and the quilt turned up without bringing about these results? If you wish your bees to be strong and healthy never touch them during winter.

MANIPULATING.

That the ferocity of bees is greater now than when we had the one variety only there can be no doubt, and bee-keepers who were adepts in handling the old black bee are cowards with the new varieties and their crosses, the Carniolians excepted. The first things the bee-keeper should learn are the sounds of the bees. Many a person rouses docile bees to fury, and gets severely stung by not understanding these sounds, treating well-disposed bees as if they were vicious, causing through some rash act quiet bees to become spiteful.

CARBOLIC ACID.

This is the best of all quieters except honey, and may be used in all cases of manipulation, for disinfecting, medicating water, and syrup; but after many years' experience I have not found it a thorough eradicator of disease, but a capital preventive. If bees are tardy in swarming and ready for it a little tow saturated with the acid

and placed at the side of the entrance prevents lying out and brings the swarm away. When bees are inclined to hive in an inaccessible place a little carbolic acid prevents their entering, and will dislodge them if a feather can be inserted in the crevice. Some feathers saturated and held beneath the swarm will dislodge and cause them to take to a hive held over them. A little acid judiciously used helps to prevent robbing and clears supers and hives of bees, and where a piece of excluder zinc is used catches the queen, while there is nothing better than carbolic acid for preventing a swarm entering an already tenanted hive. As carbolic acid prevents incipient disease and does not injure the contents of the hive like smoke it is indispensable in the apiary.

CATCHING SWARMS.

Bees are at all times liable to fly a long distance at swarming time, or take to some lofty tree not easily got at, often where cutting the bough would spoil the tree. To take a swarm from such places I use rods similar to those a sweep employs for sweeping chimneys. On the top there is a small pulley, over which a cord runs to lower or raise the light box intended to catch the swarm. Mr. Langstroth uses a "bee bob," which doubtless attracts bees, but if bee-keepers would be honest and deliver up to the owner any swarm which might come his way there is nothing better than a combed but tenantless hive standing near the apiary and in the densest part of it. Bees have a special liking for hollow trees, to which they enter through a small crevice (no alighting board). A rough box placed in the shady part of the garden, in which another box is placed inside furnished with a piece of comb, and the outside of the outer box covered with cork, having a slit or opening through which the bees might enter to the inner box, makes a capital decoy for stray swarms, which may be transferred from this box to their permanent hives. This should be such as to have always a uniform degree of temperature, and the outside should have no angles or any fillets or binders, &c., that will hold or draw damp. Any hive that does so is a defective hive.

For straw hives I never found anything better than a straw hackle plaited to a card, reaching to the turning of the crown, and completely overlapping the floor from which the alighting board ought to be detachable, and separate an eighth of an inch or so from the floor proper. The best of all floors are those of perforated zinc. On the crown of the hive and above the hackle some dried grass should be laid over a cone of some waterproof material, having a ventilator at the top, unless provision has been made for this under the eaves of the cone. The best form for a hive is the narrow and high one of the Stewarton type. Where dividing boards are used provision should be made for easy withdrawal. A very good plan is to have it made in two pieces, joining in the middle. A tongue and groove effect this, which should not be less than 2 inches deep. On the upper edge of divider there should be a piece of wood tongued into it, and nailed firm to the one half, while the other must be left free. A mortice or two should be cut like a bar of a door, through which nails pass into the other half of divider. A wedge in the middle keeps it distended; withdraw the wedge, then a slight push on the end of the dividing board will give sufficient slack, and the whole depth to remove without jar or killing bees.

Bee-keepers cannot be too deeply impressed with the necessity of having their hives made so that they are easily moved about. The majority of hives made are by far too unwieldy for that purpose, while their great size does not give them sufficient internal dimensions for profitable bee-keeping. Dale or Clover honey has but a very limited sale, but there is always a great demand for Heather honey, and at a bigger price too; therefore it is obvious that bee-keepers will exert themselves more than they have done to obtain a full harvest of Heather comb. To obtain this satisfactorily the hive must be light and easily moved about; and I cannot point to a better form than the "best hive in creation." Other points will be described on a future occasion.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Fungus on Chrysanthemum Leaves (C. H. M. Sheffield).—We have submitted the leaves to an experienced fungologist, who states that the nodules on the leaves are "the sporangia of *Pilobolus crystallinus*, and proceed from the dung on the surface of the soil; the leaf is not diseased."

Transplanting Box (H. R.).—Box may be taken up and fresh edgings made now, or at any time when the weather is mild and the soil in free working condition. We have formed Box edgings with equal success in November and March. If the portions divided and planted have roots we have no choice as to autumn or spring planting, but prefer forming lines of rootless slips in October. More depends, however, on the way in which the work is done than on any particular time between September and April for doing it.

Laying down Old Laurels (Idem).—There is no better time than the present for thinning out and pegging down the tall stems of Laurels. We mention thinning, because it is often difficult and also undesirable to peg them all down. When the stems are very strong it is necessary to chop them with a long slanting cut near the base and sufficiently deep to enable them to be bent flat down, a very strong peg or two being driven in not far from the bend to keep them in position, as it is not sufficient to merely peg down the tips and leave other parts of the stem bent in the form of a bow a foot, more or less, above the surface. That indicates bad workmanship, and, besides, the shrubs so treated do not usually grow well.

Laburnums for Towns (A. S.).—We think you have been misinformed. Laburnums grow freely and flower beautifully in the suburbs of London; also in the metropolitan parks. We also remember seeing a tree planted in an area between Hyde Park and Victoria Station, its branches being trained up the wall and round a balcony, and they were covered with golden racemes. So far, then, from our confirming what you have been told, that "Laburnums will not do well near towns," we regard them as good town and suburban trees so far as regards their growth; but it should be remembered the seeds are poisonous.

Pasiflora Buonaparteae.—Mushroom Spawn (*Constant Reader, Bournemouth*).—The plant from which the engraving you refer to was prepared was obtained from Messrs. Veitch & Sons of Chelsea, and we have no doubt that you will be able to get as many plants as you require either there or at Mr. B. S. Williams, the Paradise Nursery, Upper Holloway, as all advertise it in their catalogues. The quantity of Mushroom spawn required to spawn three beds, each 12 feet long and 18 inches wide, would be exactly a bushel, or twelve bricks. As a guide to the quantity required and to the distance apart at which it should be inserted in the bed, we may mention that one brick should be divided into eight parts, and each of the latter inserted in the bed at 9 inches apart. If you are inexperienced in Mushroom culture, obtain "Mushrooms for the Million," price 1s., published at this office. In this you will find all the information you need on this subject.

White Grape for Cool House (W. A.).—It is extremely unlikely that you would find the Goldeu Hamburg as satisfactory as the Golden Queen. It is earlier but not such a good grower, bearer, nor "setter," while its quality is only second rate. You are far more likely to succeed with Foster's Seedling, which grows and bears well, and the fruit, though not large, is of better quality than the Golden Hamburg, and does not crack under even fairly good management. Taking all its properties into consideration Foster's Seedling is the best white Grape for growing with Black Hamburgs in a house where little fire heat is employed, and the fruit does not split except the house is kept too close and damp. A rather dry and buoyant atmosphere should be maintained during the ripening period, and at that time a little fire heat with judicious ventilation is often of great service to both this and the Black Hamburg Grape.

Exhibiting Plants (C. H.).—In a class of "six miscellaneous plants, three in and three out of flower, distinct varieties," we consider that six plants and no more are eligible for prizes, and if we were judging in such a class and any exhibitor made up a pot of "five varieties of *Oncidium* grown on blocks, and placed together in a large pot and shown as one plant," we should at once have disqualified the collection. In such a class we consider the "made-up" mass inadmissible on two grounds—an excess both in the number of plants and of varieties. It appears the more strange that this packing should have been allowed, since in former years *Poinsettias* and *Enphorbias* have been disqualified because there was more than one plant in a pot. In the class to which you refer there were, if you are correct in your statement, ten plants shown instead of six, and that appears to us quite conclusive as to the ineligibility of the plants in question for recognition by the judges.

Anthurium crystallinum (Querist).—This is a stove plant, and succeeds best in a house where the temperature seldom falls below 65°. When making its growth it enjoys a temperature from 70° to 90° with a moist atmosphere and a shaded position, dry air, sharp currents, and much sun being injurious. It requires a very rough open compost, such as lumps of peat, loam, charcoal, and sphagnum moss, the pots to be well drained and the plants elevated above the rims, somewhat as in potting Orchids. Abundance of water can then be given while the compost remains sweet. In the growing season water must be given copiously, reducing the supply on the approach of winter, then only giving sufficient to keep the leaves fresh till spring. The best time for potting or renewing the compost is when growth is commencing after a period of rest.

Raising Apples and Clematises from Seed (Idem).—If you wish to sow a bushel of Apple pips or any such large quantity, you cannot do better than sow them in beds in the open ground in spring, as if sowing Radishes, covering the pips an inch deep with free soil. That is the plan adopted by nurserymen and raisers of stocks for grafting. If you have only a few seeds any particular variety, sow them in a pot or pan of sandy soil in a cool

frame in spring. Clematis seed may be sown in the same way in a mixture of peat and loam, keeping the pots in a close and rather warm frame or light house, and the soil regularly moist.

Apricot Branches Dying (B. D.).—There is a disease to which the Moorpark is liable, and which is sometimes attended with very serious consequences. It shows itself first in the leaves, which all of a sudden flag and wither away, and the branch which bears them dies. Frequently a whole limb, or the whole of one side of a tree, will exhibit this appearance in the space of a few hours. This effect arises, not as some say from the stock on which it is worked, or the soil in which it is planted, for it is met with on every description of stock and in all kinds of soil. It is not the result of a languid circulation, for trees in the full vigour of growth are as subject to it as those which are aged and going to decay; but it is because of the naturally delicate constitution of this variety, which cannot withstand uninjured this variable climate of ours. It is caused from injuries received by frost either in spring or early summer, or in winter after a wet autumn when the wood has not been properly ripened. The frost lacerates the sap vessels of the external layers of the wood, and the circulation is limited to the inner layers. When vegetation commences, and after the leaves are fully developed on the injured branch, the demand on the powers of the branch for a supply of sap to the leaves fails, and when the sun becomes powerful and evaporation increases, the supply becomes proportionately less, and for want of nourishment the leaves flag and the branch withers and dies. Less luxuriant growth with matured wood, which can only be insured by a thin disposal of the branches, appear the chief points to be kept in mind in the cultivation of this excellent but often disappointing variety.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*W. J. S.*).—The Pear is Comte de Lam. 1, Round Winter Nonesuch; 2, Golden Spire; 3, Mannington's Pearmain; 4, Ross Nonpareil; 5, Aromatic Russet. (*R. P. O.*).—Norfolk Beefing. (*Backford*).—1, Bess Pool; 2, London Pippin; 3, Small's Admirable. (*J. M. B.*).—1, White Astrachan; 2, Yellow Ingestrie; 3, Ribston Pippin; 4, Glou Morgeau; 5, Beurré Rance; 6, Beurré d'Aremberg. (*F. A.*).—1, Beurré Clairgeau; 2, Easter Beurré; 3, Beurré Diel; 4, Vicar of Winkfield; 5, Golden Russet. (*J. T. S.*).—The carriage of your parcel was not paid, and it is a wonder it was taken in by our receiving clerk. If you send 6d. in stamps the fruits will be examined with the object of identification.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. We have received sprays of shrubs and flowers presumably for naming, but no letters accompanying them, and consequently the specimens cannot be attended to. (*N. H., Somerset*).—1, *Iris foetidissima*; 2, not in suitable condition to be determined; 3, *Carpinus betulus*. (*J. L.*).—*Solanum nigrum*. (*John Cameron*).—2, *Juniperus recurvus*. (*Lady King*).—*Ligustrum Incidum*.

COVENT GARDEN MARKET.—NOVEMBER 25TH.

BUSINESS at a standstill.

		s. d.		s. d.		FRUIT.		s. d.		s. d.	
Apples	.. ..	1	0	3	6	Oranges	.. ..	100	0	0	0
" Canadian	.. ..	10	0	15	0	Peaches	.. ..	per doz.	0	0	0
Cobs, Kent	.. ..	22	0	25	0	Pears, kitchen	.. ..	dozen	0	6	1
Figs	.. ..	0	8	0	9	" dessert	.. ..	dozen	0	4	1
Grapes	.. ..	0	6	2	0	Pine Apples English	.. ..	lb.	2	0	0
Lemons	.. ..	15	0	21	0	Plums	.. ..	1/2 sieve	0	0	0
Melons	.. ..	1	0	1	6	St. Michael Pines	.. ..	each	1	6	5

VEGETABLES.

		s. d.		s. d.				s. d.		s. d.	
Artichokes	.. ..	dozen	1	0	0	Lettuce	.. ..	dozen	1	0	1
Asparagus	.. ..	bundle	0	0	0	Mushrooms	.. ..	punnet	0	6	1
Beans, Kidney	.. ..	lb.	0	3	0	Mustard and Cress	.. ..	punnet	0	2	0
Beet, Red	.. ..	dozen	1	0	2	Onions	.. ..	bunch	0	3	0
Broccoli	.. ..	bundle	0	9	1	Parsley	.. ..	dozen bunches	2	0	3
Brussels Sprouts	.. ..	1/2 sieve	2	6	3	Parsnips	.. ..	dozen	1	0	2
Cabbage	.. ..	dozen	0	0	1	Potatoes	.. ..	cwt.	4	0	5
Capsicums	.. ..	100	1	6	2	" Kidney	.. ..	cwt.	4	0	5
Carrots	.. ..	bunch	0	3	0	Rhubarb	.. ..	bundle	0	4	0
Cauliflowers	.. ..	dozen	2	0	3	Salsify	.. ..	bundle	1	0	0
Celery	.. ..	bundle	1	6	2	Scorzonera	.. ..	bundle	1	6	0
Coleworts	.. ..	doz. bunches	2	0	4	Seakale	.. ..	per basket	2	0	2
Cucumbers	.. ..	each	0	3	0	Sballots	.. ..	lb.	0	3	0
Endive	.. ..	dozen	1	0	2	Spinach	.. ..	bushel	2	0	4
Herbs	.. ..	bunch	0	2	0	Tomatoes	.. ..	lb.	0	4	0
Leeks	.. ..	bunch	0	3	0	Turnips	.. ..	bunch	0	4	0



WINTER DIET.

THE FLOCK.

Not until the value of green crops for ploughing in as manure is more clearly understood will the general practice

of putting sheep on the Mangold fields to consume the leaves after the roots are cleared off be discontinued. It is still practised almost universally, and is a striking example of the ignorance of science in its bearings upon practice which still exists among farmers. We have not allowed a leaf to be eaten by the sheep, but have had the whole of the leaves spread evenly over the soil and ploughed in. Let us see what is gained by doing this. Now the weight per acre of the green leaves of an ordinary crop of Mangolds is about 8 tons, and analysis shows how rich in the elements of plant-fertility is this mass of green leaves. It contains of nitrogen 51 lbs., potash 71.4 lbs., soda 65.2 lbs., lime 21.1 lbs., magnesia 27.2 lbs., phosphoric acid 15.1 lbs., chlorine 49.8 lbs., sulphur 9.1 lbs., and only 9.2 lbs. of silica. Surely it must be granted that without folding and feeding with cake and corn the sheep would leave a very poor equivalent upon the land for the consumption of the leaves? Near one of the Mangold fields where the leaves have been so ploughed in we had a field of Peas. As soon as possible after harvest this field was ploughed and sown with Turnips. Owing to the drought the Turnips grew slowly, and the heavy rain of autumn came too late for the development of any roots of a useful size; but there is a strong leaf growth mingled with Peas which sprang up from the seed falling from shattered pods during harvest, altogether forming a valuable green crop. Upon asking the bailiff what he intended to do with it, he said it would be useful for the flock after the lambing, especially for the young lambs. But, said we, the lambing will not be over till the first or second week in March, and bearing in mind that this field is to be prepared for Mangolds next year, how can we hope to have it ready for sowing by the first week in April? Moreover, all the vigorous growth of green Peas will be destroyed by the alternations of cold and wet to which it is quite certain to be exposed. Rather, much rather, let us plough in the entire mass of green growth at once, and rely upon it we shall lay up a store of precious fertility in the soil that must prove of infinite value to the root crop next season.

It is because we deplore the indiscriminate feeding off green crops by sheep at this season of the year that we have made this apparent digression from our subject. Yet it can hardly in fairness be considered a digression, for is not the feeding of sheep, in winter at any rate, generally done upon land requiring manure? Hoggets certainly are available for this purpose, and with such strong healthy young sheep we may do much by judicious folding for the improvement of poor land. For them Swedes are at once available, and we are able to calculate tolerably closely as to what the consumption must be to bring them on for the butcher, only it must not be forgotten that exposure to cold and wet may upset all our calculations. We may, however, take a mean, for to make a pound of mutton it requires 150 lbs. of Turnips out in the fields, and about 100 lbs. when the sheep have the benefit of snug enclosures and sheds. With the Swedes or Turnips a mixed diet of dry food, either of crushed cake and corn, or preferably of crushed Beans, and Oats or Barley, because the whole of this diet may be produced on the farm. Careful experiments by reliable authorities have shown that with a mixed diet the progress of sheep is much greater than when they are confined to one article of food, no matter how nutritious it may be. We must, however, see that the process of mixing and feeding is as simple as possible. Elaborate machinery and much labour are costly things in which we must not indulge, unless it is sufficiently evident that the end in view justifies the means.

It will be understood that our remarks here have special reference to wether hoggets, which are now passed on from the flock to the butcher so quickly that few of them reach the age of eighteen months. Certainly, with the present low prices we have every inducement to get them off our hands as soon as possible. With some clever farmers the high pressure system is carried so far that the wether hoggets are off

their hands by the end of July or early in August. The system has much in its favour, yet it probably answers best to select the more forward lambs for the earliest sales, and to follow with others batch after batch, so as not to incur a too heavy outlay all at once. It should be a point of good farming always to have some animals growing quickly into money, and this is managed among sheep by a process of selection, always taking a given number of the best from what may be termed the general flock, and putting them upon a more nutritious diet. In this way we avoid what is sometimes termed a "dead time," by which is meant an unprofitable time, when there is little if anything to sell, and yet payment for labour must go on.

WORK ON THE HOME FARM.

On heavy land the sowing of winter corn has been somewhat hindered. We continued, so far as was possible, to follow the ploughing closely with the seed drill. On the whole the corn has been got in well, and much of it has come up and is looking well. Of the more forward crops are Rye, Oats, Beans, and some Wheat. All are excellent plants, and the first are likely to be of much use to the sheep later on. Notwithstanding wet weather we have got through a lot of forking out of couch grass, for we still have some foul land. All of us, in some degree, are the sport of circumstances. Farms fall in, do what we will, and the land of such farms generally proves foul. No doubt in the palmy days of farming many a man hired a farm with very little knowledge of agriculture. With high prices for farm produce this did not much matter, a "living," and something more was always forthcoming, but as prices fell many a man fell too, for easy-going farming meant failure then, just as it does now. Well, we must do our best with land, be it foul or clean! To those who find the burden of hard times and labour payments press very heavily, we say, Do not forget that you have a resource in permanent pasture. On one of our off farms that is upwards of twenty miles from our residence, we shall certainly lay down a considerable area in permanent pasture next season. Meanwhile, we have striven to do all we could in clay-burning, draining, clearing the land, and judicious cropping to keep down expenses within reasonable limits. It is the expenses for labour of men and horses which mount up so seriously upon large arable farms. When the outlay passes certain limits, it is then, if not sooner, that arable land ceases to answer, and although both sheep and bullocks have fallen much in prices, yet permanent pasture may be made to answer; but mind, there must be no laying down of foul or undrained land, no trusting to the growth of natural grasses, but thorough process of culture, and the use of the very best mixture of Grasses and Clovers. Which those are we have told repeatedly, and we hope to do so again at the proper season. For now, if ever, we should have aim and purpose in our work, and our strokes should strike home, so that we may avoid failure, and do our very best still to make our farms answer.

OUR LETTER BOX.

Ploughing in Green Crops (*Auricula*).—Your query will receive more prominent attention and a fuller reply in the next issue of this Journal than can be given here.

Cabbages for Cows (*W. X.*).—Nearly all kinds of Cabbages are good for cows in full milk if they have white hearts without decayed leaves attached, but the best sort is the Drumhead Savoy, and they will not affect the taste of the milk but very slightly if without any decayed leaves. If, however, the milk is required for butter-making we cannot recommend Cabbages, but prefer Mangolds or Carrots, but best of all the large cattle Potatoes, which do not injure the flavour of the butter.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
1885. November.	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature			
		Dry.	Wet.			Max	Min	In sun.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	15 30.105	34.8	33.5	N.E.	41.2	42.8	32.6	71.2	28.0	—	
Monday	16 30.431	34.2	33.4	E.	42.0	42.2	29.2	63.2	10.7	—	
Tuesday	17 30.342	35.2	32.0	E.	40.4	42.0	28.3	65.8	17.8	—	
Wednesday	18 30.015	31.4	30.4	E.	39.3	41.7	28.6	63.2	20.1	—	
Thursday	19 29.981	39.3	37.7	N.E.	38.7	43.1	31.1	53.2	24.1	—	
Friday	20 29.974	42.4	40.4	E.	39.8	46.0	39.2	52.2	37.6	0.012	
Saturday	21 29.720	36.6	35.9	E.	40.4	44.5	34.1	58.4	25.8	—	
	30.081	36.3	34.8		40.7	43.6	31.9	61.0	24.9	0.012	

REMARKS.

15th.—Fine, bright, and cold.
 16th.—Fine, bright, and cold.
 17th.—Fine, bright, and cold.
 18th.—Fine, bright, and cold.
 19th.—Cloudy all day, much warmer.
 20th.—Cloudy, with a slight shower about noon, and rain at night.
 21st.—Fine as a whole, with some sunshine, but one or two slight showers.
 A week of fine winter weather. Temperature 6° below that of the preceding week, and about 5° below the average.—G. J. SIMONS.



COMING EVENTS

3	TH	Linnean Society at 8 P.M.
4	F	
5	S	Sale of Bulbs at Protheroe's Rooms.
6	SUN	SECOND SUNDAY IN ADVENT.
7	M	
8	TU	Royal Horticultural Society—Fruit and Floral Committees at 11 A.M.
9	W	Sale of Bulbs at Stevens' Rooms.

REFLECTIONS ON JUDGING.

INSTEAD of jotting down a few thoughts in a series of isolated notes, I will this week adopt a different method, and shall hope thereby to avoid criticism of a kind that provokes sharp retorts, which I have no pleasure in indulging in. In what I have written or may write there has been no intention, and will be none, of wounding the susceptibilities of anyone. It were far better not to write at all than to write with that intent.

A good deal has been said of late about judging at horticultural shows—that is, judging the products, but we do not hear so much about judging the judges; yet this is an established practice, and on the whole salutary. Reports of shows would be bald indeed and weary reading if they amounted to a mere register of the winners of prizes. Any clerk can accomplish that literary feat; but as the horticultural press attendants are something more than mere copyists they very properly endeavour to make their reports critical and suggestive. Readers of show reports desire to know something of the products that win prizes, and why they win, also to learn in what respect those which fail to secure a high position are relatively inferior. These points a practical reporter endeavours to indicate, and occasionally he may feel it his duty to question the strict accuracy of a verdict.

The fact that judges themselves are judged, not by competitors at shows alone, but by press attendants, can scarcely fail to have a beneficial influence; at least, they know quite well that if any errors are committed they are not likely to remain unrecorded. It is altogether creditable to the adjudicators at most important exhibitions that complaints are so few. The truth is, men who are really competent to estimate the merits of the products before them rarely make any flagrant mistake. No doubt some of the exhibitors, especially those who do not win such high honours as they expect, think they do; but then such individuals are necessarily prejudiced, while the judges are not, and in nineteen cases out of twenty good judges are right in their verdicts, whatever interested onlookers may say to the contrary. It is quite amusing sometimes to observe an individual throw up his arms in astonishment at a verdict, and point out how the awards ought to have been distributed. He judges the products in a minute—and the judges too—while these officials have bestowed infinite care and spent, it may be, half an hour in arriving at a fair and just verdict. The opinions of disappointed exhibitors cannot have any weight; but it is different with unprejudiced onlookers and practical men who are occasionally constrained to express an opinion adverse to the judges.

It frequently arises that judges have much difficulty in arriving at a decision, so conflicting are the claims of the products placed in competition, one quality predominating in one case and another in another. This clashing of qualities of different kinds renders it no easy matter to strike a balance

between them. In such cases the personal preferences of individuals cannot be subdued, and these may slightly vary; still, when two or three men of acknowledged competence are unanimous in giving a verdict it is prudent to hesitate in expressing an adverse opinion. At times the contest is so close that it amounts to a mere "toss up" as to where to place the cards, and equal prizes are then awarded. This is an easy method of settling the matter, and from one point of view it may be right—namely, that both are worthy of the amount that is offered, but at the same time it is questionable if two exhibits are ever staged of absolute equality.

Some such close competition appears to have existed at Bath, and it is quite evident the reporter of the Show was himself no bad judge when he had the courage to judge the judges. Whether they were right or wrong in their decision as to the relative merits of the Grapes, the admitted existence of those left room for remark, though the expressive term "favoured" may not have been happily chosen. Few, if any, however, will suppose that it was intended to suggest that anything more or less than strict justice was done according to the convictions of the adjudicators, and the word "fortunate" would have been less open to question. All the Grapes appear to have been good in some points, but Mr. Nash was the fortunate winner of the first prize. Then we come to the Pears, and we find what is to me quite a novel example of judging the judges. One evidently good judge says the finest collection, Mr. Bannister's, was passed; another judge, whose ability as a cultivator none will deny, regarded them from a different standpoint, other fruits, though smaller, yet uniform in size and quality, being regarded as more meritorious. Yet the "passed" collection is stated (page 470) on the authority of the exhibitor of it to have been granted an equal first prize. The reporter of the Show was obviously ignorant of this, and Mr. Ward makes no mention of the circumstance in his letter. Someone else, then, other than the judges granted the "first prize" in question. This proceeding cannot but be regarded as an extraordinary one; and there can be little doubt that if committees of societies judge their judges in this way some difficulty will be experienced in obtaining the services of first-rate adjudicators. The new method also practically invites disappointed exhibitors to clamour for a revision of the awards—a practice that cannot be to the permanent advantage of any society. It is open to committees to make an extra grant to any exhibitor who contributes worthily to a show, in terms outside those of the schedule, but to interfere in the awards of the judges without consulting them is an innovation that can scarcely be regarded as sound in principle, and is not calculated to increase the stability of societies nor win the approval of exhibitors.

Another matter demands attention—namely, the principle on which products should be judged. This is a subject of far-reaching public importance. When a prominent gardener advances the principle of uniformity throughout a collection as being of greater moment than individual merit, either of Pears, Chrysanthemums, or anything else, it becomes necessary to ask if such dictum is sound. If, for instance, a collection of Pears is passed because of a want of evenness in the fruits, it will become necessary to withdraw the finest dishes of Pitmaston Duchess, Beurré Diel, and other large Pears, and add smaller and inferior examples to bring them more nearly to the size of smaller varieties; and in a collection marked for its uniformity containing, amongst others, Beurré Diel and Beurré Capiaumont, it is certain the last named must be extraordinarily large, or the other correspondingly small. As an example of the weight of general evenness of moderate examples over individual merit, or each being good of its kind or variety, a stand of Chrysanthemums is introduced such as is not seen at exhibitions—namely, three large blooms and three Pompons in a collection of six varieties. It will be better perhaps to take

stands that are regularly seen and judged. Suppose, then, in a stand of six incurved blooms the back pair are as fine as they can be, and of the value of six points each; the next pair not nearly so large, but worth four points each; the remaining pair still smaller, and accorded three points each, we have a total of twenty-six points. The stand in competition is so even that the blooms examined individually are worth four points each, or a total of twenty-four points. Now the question arises, Would it be right to give the first prize to the stand that loses in intrinsic merit by two points, and the second prize to the stand which wins by that number? I leave the question open for reflection.

The same rule of judging applies to Pears. If general evenness of a collection is to stand before the individual merits of the varieties composing it, it will often be necessary to stage second-rate specimens of the larger Pears to secure a prize, whereas if the first-rate fruits excluded were placed in competition with those added, those left out would win the prize. There can be no fairer subject for criticism than this, and it is one in which nothing but good feeling and good fellowship should prevail in any discussion on the matter.—A THINKER.

REVIEW OF THE CHRYSANTHEMUM SEASON.

NOVELTIES have been brought forward in large numbers during the present season, which has been an extra busy one, as exhibitions are now more numerous than formerly; but I do not think there has been that general good quality amongst cut blooms as in some other years, except in a few instances. I fancy the severe frost of September 25th militated against the well-doing of some collections, particularly those located in low-lying districts. Those situated on more elevated sites escaped the frost somewhat more than others, while the roasting summer proved much too trying for the plants if at all neglected or where water was scarce. Those believers in well-ripened wood I fancy have had cause for rejoicing where ripened naturally, not prematurely. The season just past has been sufficient to convince me that well-ripened wood plays a very considerable part in the production of high-class blooms. For the benefit of those readers who are desirous of adding a few novelties to their stock, perhaps already too large, I will mention those varieties that came under my notice as being worthy of a place. As the Japanese are the largest in number and most generally popular I will name them first.

Belle Paule, a large full bloom with flat, long, drooping florets, white clearly margined with deep lilac. This variety was sent out last year, and this season has proved quite the best of the new ones. It is a tall vigorous grower, and with good treatment sure to produce fine blooms. This is a great acquisition.

Val d'Andorre, which is another of last year's new ones not much known, takes rank as the second best variety that has come to the front this season. It is a free robust grower, and is dwarf in habit although so strong; very fine blooms can be produced on plants 2 to 3 feet high. It is as invaluable for grouping as for cut blooms. The flowers are of large size, having a full centre with long reflexed florets, orange red shaded gold. This should be in every collection whether grown for exhibition or home decoration.

L'Adorable, a variety being sent out by Mr. N. Davis, Camberwell, is quite like the preceding variety in habit of growth and shape of flower. It is of large size, colour dark canary yellow, and is sure to come to the front next season.

L'Ebouriffée, a variety exhibited by Mr. Cannell at the National. It is of large size, shape like Criterion, which it resembles except in colour, which is of a bronzy gold. This, I think, will prove an acquisition.

Maiden's Blush.—This Mr. G. Stevens exhibited in splendid condition, and was rightly awarded certificates. It is somewhat after the Elaine type, except that the florets are longer. It is a large full flower of a pleasing shade of colour, which is blush white.

Madame de Sevin.—One of last year's new continental varieties, amaranth magenta. It is a beautiful colour, which is quite new. It is a grand variety for groups or home decoration, or when well grown will do for exhibition, but without it is in first-rate condition it is too small.

M. Astorg is a variety that has well borne out what it was said to be—a first-rate kind. I look upon it as an improved Elaine, as when fully expanded it is nearly white. It has long drooping florets, quite a full flower. The length of floret and the drooping graceful way they hang as compared to the short, stiff, almost erect ones of Elaine renders it a very desirable variety, and in that way an improved kind.

Fernand Féral, which is one of last year's continental varieties, is likely to prove a fine variety, more particularly for the early shows. It is a full flower and lasts a long time in bloom. The petals are slightly spiral, of a delicate lilac rose. It is of free growth, which is not too tall.

Beauté des Jardins, sent out last spring, is one of the best we have for decorative work. It is of dwarf habit, blooms freely, while the flowers have a strong violet scent.

Madame Laing.—A variety well shown by Messrs. J. Laing and Co. at the Crystal Palace Exhibition. Florets broad and flat, white deeply tinged with deep blush. A deep solid flower.

La Triomphante, a variety sent out by Mr. Cannell, of great promise, a very full flower, with broad reflexed florets, white.

The following I saw in Mr. N. Davis's collection at Lilford Road Nurseries, Camberwell, which I singled out as being desirable kinds:—Jupiter, fine large flower of a brilliant fiery red; Mons. Freeman, one of the broad-petalled section, rosy violet colour; Sir Moses, a bright crimson; Dr. Barrie, fluted petals of a reddish crimson, reverse of petals gold, golden centre, rather thin, but effective; Mrs. Townsend, rich in colour, which is a claret crimson, very fine; Galatea, a large flower, blush rose in colour.

New incurved varieties are very few in number; the only new one that promises to be a valuable addition is the bronze sport from Queen of England shown in several places by Messrs. J. Carter and Co., High Holborn, London. If it remains steadfast in colour and form as shown by them it must become a valuable addition to the incurved section, as it is so distinct in colour to any of the large varieties now in commerce. No doubt Messrs. Carter will grow and prove it more fully another year, when it will probably have a large demand.

Lord Alcester has gained in popularity since its introduction immensely. I rather think it now beats Jeanne d'Arc. Such a good "doer" is it that it may be seen in almost every collection. One thing I am sorry to see some of the raisers are doing—pushing worthless varieties into the market and calling them incurved, whereas they are nothing but mongrels, neither Japanese nor incurved. I think the object of the raiser is a good one—that of getting the bright colours of the Japanese section infused in the incurved; the consequence is the progeny is neither one thing nor the other in form, which is or should be the one great object in all incurved flowers.

Reflexed varieties have received a most valuable addition in the variety Cullingfordi. I consider this quite the best of the whole family either new or old; its colour is so striking, the flowers are of such depth and substance too, and with such lasting properties. This variety is sure to become popular. At one time I was in doubts whether it would be admissible as a reflexed variety, but now I consider that is its proper place. I know it is a hard matter to define which are Japanese and reflexed varieties. Some say there ought to be a class for reflexed Japanese. That, I think, would be more bewildering than ever, because the generality of the florets of the Japanese varieties reflex. Take, for instance, Fair Maid of Guernsey and Belle Paule, both decided flowers of that habit; therefore it would be almost impossible to define Japanese reflexed. The true type of a reflexed flower, or what might more properly be termed imbricated flowers, is Golden Christine, Emperor of China, Cloth of Gold, or Dr. Sharpe, for this reason—the petals of those varieties do imbricate, and they are much shorter in the centre of the flower than the outer ones. This is not the case in some of the Japanese varieties, which some say are or ought to be shown in the reflexed section. Take, for instance, Triomphe du Nord, and this is spoken of more than any other variety that ought to be admissible. In the reflexed classes the petals of that variety are much nearer of the same length than the petals of the varieties I name as being the correct reflexed type. A true reflexed type should be full—scarcely any space between the points of the petals. Now in some Japanese varieties there are very wide spaces between the tips of the petals, nor is the imbrication perfect through the petals being of the same length as each other. I contend that Cullingfordii has these requirements. I am prepared to find many people differ from me as to the constitution of the various sections of the Chrysanthemum, but in this particular instance I am unable to define it more clearly.

Through the kindness of Messrs. J. Laing & Co. I was enabled this season to grow a plant of the true Mdle. Madeleine Tezier, as suggested by the Journal, the variety that was supposed to be synonymous with Jeanne d'Arc. Flowers produced by this plant are decidedly reflexed, white, delicately tinted with blush, heavier round the bottom petals. It is of large size and full centre—quite an acquisition to the reflexed class. Distinction is another valuable addition to this class, under which heading it was sent to me last spring. Some catalogues describe it as a Japanese variety. The colour of our variety answers to the description given in the

catalogue under the Japanese heading. It is one of the deepest built flowers I know, close in the petal, and very solid, while the colour is yellow, shaded and speckled with reddish crimson.

Mdlle. Melanie Fabre, soft rose flamed with a darker shade, I saw in Mr. Davis' collection. When better known I fancy this will prove to be a good reflexed variety.

Marguerite Villageoise is the only good new kind produced this season among the Anemone Japanese section. This is one of Messrs. J. Laing's introducing. It is extra large and full in the centre, having what is termed plenty of "stuff" in it. As it is so distinct from any other variety it will be a useful addition. It is a deep lilac, tipped with a much lighter shade. If Messrs. T. Jackson & Son, Kingston-on-Thames, can bring out perfectly the White Fabian they have in hand they will do good service in this family, which is very interesting.

Bacchus is a variety exhibited this season as Anemone Japanese, and a good one it would be if it had a better centre. Its colour is very rich claret colour. Perhaps it was not in good form when staged; if so it may improve by culture. I noticed nothing new among the ordinary type of large-flowered Anemones, nor did I amongst the Anemone Pompons. The latter is a very interesting class, either grown for single flowers or in bunches, in which style they are very useful and effective in a cut state. Among the Pompons we have a very fine addition in Black Douglas, sent out by Mr. Cannell. As its name implies it is the darkest of the whole family, particularly full flower, good round form, and, as the petals are thin, it is devoid of all coarseness sometimes existing in some varieties of Pompons.

It is very pleasing to notice the general improvement throughout the country of the groups composed wholly of Chrysanthemums now that the system is becoming more studied and put into effect—a system taught and explained and forcibly illustrated by the groups arranged at several of the Kingston Shows by M. C. Orchard, The Gardens, Coombe Warren; but I venture to say that the best group yet staged was one this year at the same Exhibition by Mr. J. Bass, gardener to A. S. Price, Esq., Parkside House, Ewell; so dwarf were the plants, such healthy foliage and excellent blooms, and above all the arrangement of the colours was charming, so happily were they distributed.

Specimen plants are much better trained now than they were. A few years since the object was to get them as flat and as large as possible; now they are not nearly so stiffly tied. The quality of the flowers, too, is studied more than mere quantity. At exhibitions which have not long been in existence there is a great want of skill in the specimens, simply because no opportunities have been to see which is the best way to grow them. After a year or two a vast difference is discernible—the old-fashioned plants 5 feet high, a forest of stakes and leafless stems tied together reminding one of as many birch brooms, and the flowers so produced scarcely showing the true character of each variety; many that ought to be full-centred have large yellow eyes resembling single varieties more than anything else. These quickly make room for those dwarfed-grown plants, which can be seen somewhat more comfortably without the aid of step ladders, each plant representing the true character of each variety. This new state of things requires a little time and some study and careful handling, but when achieved the results are much more satisfactory both to the general observer and to the cultivator.—E. MOLYNEUX.

FRUIT AND PLANT HOUSES.

(Continued from page 445.)

STRUCTURES with flat eave plates allow the water passing down the rafter to lodge, and this is sucked up by the rafters, especially when the joints are not tight, which causes speedy decay; indeed, I have seen the rafter decayed at the under side for a yard or more up, whilst the external surfaces were comparatively sound, and this within seven years after erection. The woodwork ought to be so contrived that water will not lodge upon it either outside or inside the house. This is effected by chamfering off the right angles of the wood, and in a pleasing manner by the skilful horticultural builder. The sloping of the woodwork is also commendable through allowing a freer access of light to the interior, and it to some extent is useful as a preventive of drip so inimical in fruit and plant houses; indeed, they ought to be drip-proof, to effect which desirable result various expedients have been employed, such as strips of zinc on the under side of the rafters with the edge turned up so as to form a gutter on each side and convey the water to the bottom of the rafters. This is only a cobbling business and objectionable from obstructing light. Messrs. Foster & Pearson, Beeston, Notts, have the rafters or sash-bars with a groove on each side near the lower edge, which entirely prevents drip; at least, I failed to find a single drop of drip in a house constructed by them 54 feet long by 15 feet wide during the

dripping murky weather of this November. There is nothing so unpleasant as the drip, or rather miniature shower bath greeting those entering a house where moisture condenses and lodges over the doorway, and which is overcome by a very simple contrivance of a strip of metal inserted in the lintel, which prevents the water lodging over the door.

These are, it may seem, trifling matters, but they, notwithstanding, form the very foundation of the structure as regards economic and cultural value.

Before quitting the woodwork I ought, I think, to mention a letter I received from a firm of horticultural builders taking exception to my recommending pitch pine, as they find it subject to "dry rot," which I have to some extent noticed when this wood has been used in stables, but I have not noticed it when creosoted and used for houses that were kept at a uniform heat and moisture as that of moist plant houses. Nevertheless, I readily grant there is no objection to be taken to sound well-seasoned red deal. At the same time I would prefer teak for all structures, especially where the temperature is high and the atmosphere moist, but it is considerably dearer, though cheap in comparison with the materials used in many structures. There is as much difference in the appearance and wear of a house constructed of the best material in a proper manner compared with the showy and cheap (?) as there is in the textile fabrics between wool at first hand in broad cloths, as compared with the taking prices of shoddy. I am thankful for the above opinion, and only wish those holding different views would favour us in these columns with their observations and experiences.

The next most important matter is glass. I have used polished plate such as is silvered for mirrors, of various thicknesses, also the same ground on one side, rough or rolled plate, and glass of varied tint, without any remarkable discovery. The only ray that I have found of any benefit is that of the sun passing through glass slightly tinted green; the glass found in all our very old houses in tiny panes, as thin as a hard-worn sixpence, and known as crown. This has gone out of date, as it was too fragile and too uneven in thickness. For its thickness it was the toughest of all glass from the care exercised in annealing. This has given place to sheet glass—the best unquestionably if only it be good, and the only good is English, the foreign being unreliable both in quality and thickness. I prefer it with a green tint scarcely perceptible to the eye, nevertheless apparent in all our best English makes. Without prejudice to other manufacturers I may mention that of the Hartley's, Sunderland, as what horticultural glass should be. Fifteen or sixteen-ounce sheet of the quality known as thirds serves for ordinary purposes, but in the size of panes now employed it certainly ought not to be less for the roof than 21-oz., whilst for the sides and ends the lighter description answers. Twenty-six ounce, and even 32-oz., I have used without any advantage over the 21-oz., and as for plate it is only going to a great expense for no object only to parade extravagance. Thrift is wanted without abatement of utility. I have not seen any beneficial result accrue through the employment of plate glass or even of thick glass, provided that used is of sufficient strength to resist ordinary storms of wind, rain, snow, and hail.

Thick glass is supposed to prevent the radiation of heat more than thin; but I never found any sensible difference in houses glazed with plate from a quarter to three-eighths of an inch thick to what were the results in those glazed with 21-oz. glass. It made no difference in the heating surface required, consequently none in the fuel consumed; besides, I consider the solar rays pass more entire through thin glass than through thick. The rays being deflected in passing through the glass the diffusion must be greater in passing through thick than thin, and the rays are effective or defective in proportion to their directness. Rough plate is an example of this; the rays, though they may not be less, are more diffused—the same light, but broken, and less effective on plants in respect of evaporation, elaboration, and solidification—the essentials of fruitfulness. I readily grant plants will grow quicker under a roof of rough plate, attaining more ample foliage; still, it is not desirable glass for general purposes, and where a maximum of fertility in flowers or fruit or both is desired it is absolutely unsuitable. It may and does answer for foliage plants such as Ferns and Palms, but for those even that require light for the perfect colouring of the foliage such as Crotons, &c., it is positively inimical; indeed, it is questionable if the glass for all purposes ought not to be smooth and clean, depending upon temporary shade for protection against scorching rays, which, by the way, I may state are more due to inattention to early ventilation than any defects of glass. Even rough plate should have a green tint, as white, or, worse still, yellow, takes the colour out of Ferns and Palms, giving them a sickly yellow hue instead of that deep pleasing green so desirable.

As to glazing I do not propose to trouble your readers with the many different modes. I have no fancy for the tempting bait novelty or change, as I find nothing better than the old-fashioned putty

glazing, without any of it above the glass. Provided the glass is properly bedded in putty, it is taken off level with the upper surface of the glass, and the squares are securely nailed in, there is no objection to be taken to it. There is no leakage if the work is performed in a proper manner and the painting duly attended to. It is simple and effective, the glass readily placed in position, and repairs can be expeditiously effected by any person of ordinary intelligence. I am a staunch believer in laps, jump joints are useless, but the smaller the lap the better, and in no case should exceed a quarter of an inch—an eighth is still better, yet there must be a perfect lap from one side to the other, and not half an inch on one side and barely an eighth or none at the other. A large lap means water lodging and much repairs to do after the first severe weather, with, in the course of time, a strip of opaque matter across every pane corresponding to the width of the laps, and extending from neglect in washing over a great portion of the surface. Some people have an idea that wide laps are useful for ventilation, which they surely do not believe, or they would be more particular in keeping them free of accumulations of dirt. They are useless in that way, and serve no purpose only to make a frequent acquaintance with the glazier, to say nothing of their obstructing light, which every cultivator needs so much in winter.

There is one other matter in connection with glass in respect of the formation of the squares which deserves more than passing comment. When the squares or panes are cut square the water for the most part follows the rafter or sash bar, but the lower part of the square being convex, the upper part of the square of course being cut concave, the water is directed to the centre of the panes and runs down the centre of them to the gutter. Water does not lodge in the lap, as it drains to the centre, and passes away without leaving a drop, so that the danger of breakage from frost is reduced to a minimum, and the water is taken away from the parts most liable to decay or the rafters.

As regards paint it is needless to point to its necessity, but it is no use deferring it until the woodwork is in position, for should rain fall the pores and the joints will have absorbed all they can, and the painting is only so much material and labour wasted. The woodwork ought to be painted with at least two coats before fixing, and every joint or wherever a joiners' tool is employed on the woodwork in erecting it should be well coated with paint so as to cover it well and render the woodwork proof against the absorption of water. After fixing it should have two coats more, and due attention be afterwards given to its renewal, which is the better of a coat every year, but certainly should be given every other year, and then two coats. Of paints I have a preference for white lead brought to the proper consistence with linseed oil, with the needful turpentine for drying, but for wear a light stone colour is certainly preferable, as it does not show dirt so soon as white. Whatever the paint it should be the best lead and oil colour, and the less of the light substances as brown umber, or blue, &c., the better. The ironwork ought also to be painted before fixing, and if finished off a light blue the effect is pleasing. Black is too violently contrasting, and is the poorest to use imaginable, though very commonly employed. The dull red or chocolate now so fashionable is very durable, but unsightly.—G. ABBEY.

(To be continued.)

FORCING LILY OF THE VALLEY.

THE rapidly increasing popularity of these charming flowers is fully illustrated by the hundreds of thousands which annually reach this country from various Dutch, German, and other growers, the demand for clumps being on the decrease, and that for single crowns rapidly increasing. This preference for single crowns seems to arise from various causes, primarily, perhaps, from the fact that they may be obtained much more cheaply, and cost far less for carriage. A thousand single crowns, for instance, will go into a comparatively small box, the cost for carriage being trifling, while the clumps containing the same number of flowering crowns would constitute a rather bulky load. Single crowns, again, are more easily dealt with than are clumps, and may when being forced be placed into a very small space, while clumps must be potted—the smaller ones into 48's and the larger ones in 32's.

Having just received my first batch of a thousand crowns in boxes, it may be serviceable to some at this season of the year when so many are anxious to do them well if I state briefly the mode of procedure. This is so very simple that it is within the reach of all who possess a stove, and where a uniform bottom heat of from 75° to 85° is maintained. To be clearly understood in this matter I will ask the reader in thought to accompany me back a few weeks to the time when these crowns are first received either from the Continent direct or from his own seedsman at home. To get them early is always an important point. This I urge as important, so

that the crowns shall not be exposed to the vicissitudes of our ever-changing climate any longer than is possible. As soon as received they should be laid in the soil in the bundles as received, taking care to cover them with at least 4 or 6 inches of soil, and not leave the entire crown exposed as is often the case. I find coal ashes excellent to bury them in, and being light and open the frost does not penetrate deeply, and the crowns may be got at any time. I strongly recommend their being thus buried as soon as received, for this reason that they force better, and are not so liable to rot off at the neck of the crown as when left exposed to external influences. This is more noticeable in the earliest batch, and which need hard forcing. When they have been exposed, and are lifted and placed in heat at once, I have noticed a blue fungus form around the base of the crown, which eats them off in about a couple of days. This fungus is a rarity if the crowns are deeply covered, and which seems to keep them plump and fresh and ready for action; certainly it is a more natural state for them.

In some nurseries Lilies of the Valley are forced in great numbers, and special accommodation is at hand. In such cases they are generally planted out in the houses on a bed with plenty of bottom heat. Where smaller quantities are required the following will be found to answer well. I obtain some boxes 3 feet long or thereabouts, and about 22 inches wide and 8 inches deep. Such an one will take about four hundred crowns. Previous to untying the bundles I shorten the roots to about 4 inches long, after which they are placed in rows in the boxes as thickly as possible in cocoa fibre refuse, there being about an inch between the rows, and a similar distance from crown to crown, when the box is filled with as many as can be packed in it. Fill the box level with fibre and press rather firm, when they may be removed to a frame or pit slightly heated. Having been in this temperature a week or so they may be taken to the forcing house and placed on the bottom heat, and by covering them with slates a greater amount of heat will be retained than otherwise, and which also serves to keep them in darkness.

Given a constant bottom heat as above stated, they may be had in flower in about three weeks or a month, so that there is just time to get a batch in for Christmas, at which time they will be most acceptable. After that time, and especially if they have been brought on gradually, they come on much more quickly, and after the first early batch, together with giving a greater per-centage of flowers, we get foliage too, which is generally minus in the earliest batch. To meet this we lift some old patches from the ground and place them in strong heat under the stages perhaps, where they get sufficient light to give them colour.

While being forced water should be plentifully supplied, and at about the temperature of 75°. In about a fortnight they will be pushing through, when the slates must be removed. A hot-water circulating tank, having a direct feed from the boiler, constitutes my bottom-heat bed, which at the hottest end often exceeds 90°, and sometimes reaches 95°. At this point, however, I place the boxes on pots, allowing a 3-inch cavity. Here they come on admirably, and are all that could be desired, and after all they are not so difficult as many imagine, and being in boxes are easily transferred to a cooler house to harden off.—J. H. E.

NOTES BY THE WAY.

KEEPING POTATOES.—It may not be generally known that Potatoes can be kept sound and well-flavoured until next year's crop comes in. The following is the method (said to be a French one), which I closely followed with the best results:—A large boiler of water, the water being kept up to the boiling point. The Potatoes when well washed (avoid breaking the skin if possible) are placed in small baskets or nets, which are then rapidly thrust under water and there retained for about four seconds. The tubers in each batch on being withdrawn are spread out on the flooring to dry; when dry they are stored away in a dry dark room as nearly air-tight as possible. The Potatoes by this process will have lost all tendency to germination.

CALLA ÆTHIOPICA AS AN AQUATIC.—Several large pots of the above were sunk in the lake here over two years ago. In winter they are quite 3 feet below water level; though frozen last winter, yet they did not fail to throw up two or three good spathes to each pot in spring.

JUDGING CHRYSANTHEMUMS.—While willing to acknowledge Mr. Murphy's ability as a scribe, yet I do not think that he has any cause to be "sorry" that Mr. Pithers wrote so plainly of the Dublin shows. In my opinion Mr. Murphy's glossing over mistakes will be more detrimental to the cause he has at heart than Mr. Pithers' plain speech. "He that heareth reproof getteth understanding."—C. S. RITCHIE.

TRAINING PEACH TREES.

WITH reference to my remarks on this subject (page 407), Mr. Simpson, Wortley Hall, Sheffield, informs me that he advocates the two-limb system with maidens "for the sake of clearness to beginners," and that personally he is not particular, but "fills the house with bearing

wood as soon as he can according to circumstances." How rapidly this is accomplished may be gathered from some of the facts mentioned in his book on "Improved Pruning and Training Fruit Trees." For instance, a small and comparatively weakly Victoria Nectarine, a rider "with a few shoots upon it, and a stem as slender as a young Briar stock," was planted early in 1878, and the next season perfected a crop of five dozen good fruits, while during the season of 1880 this and other young trees planted at the same time bore from nine to thirteen dozen fine fruits each. Mention is also made of extraordinary and most rapidly grown trees of Peaches and Nectarines at Brayton Hall, Lambton Castle, and Eastnor Castle, and some time ago the Peach houses at Wilton were also described in this Journal, these fine houses being very rapidly filled on the unrestricted system. Plenty of other instances, including Cardiff Castle, could be quoted, were it necessary, in support of this decidedly improved system of training.—W. IGGULDEN.

[We have seen the Peach and Nectarine trees at Wortley Hall, and they were very fine indeed.]

WHITE PLUME CELERY.

I AM pleased in having the opportunity of giving Mr. McIndoe (page 443) some information on this. Snow will do it no harm, and only a severe frost which will injure other Celery will destroy it. Last winter it showed no signs of being injured after 12° of frost with us, but I dare say a severe frost would blacken it and make it pulpy. However, Celery is wanted before as well as after frost, and for use from the beginning of September until Christmas at least no Celery could surpass this in good qualities, especially for cooking as a second-course vegetable. "Utilitarian" (page 465) makes a mistake respecting this Celery. Evidently he never had it to try, as it is not at all like Cole's Superb Crystal White. Every portion of our plants becomes creamy white, and there are no green ones, but all are alike pale. As Mr. McIndoe seems to look at it from a reasonable point of view and comes to no hasty conclusions I shall have much pleasure in posting him a pinch of seed of the right sort in February next.—A KITCHEN GARDENER.

THIS White Plume, like all other plumage, looks best in fine weather, for 10° of frost ruined it. On examining the White Plume Celery after a night's frost, which we experienced here lately, we found that not much "white" remained, "decayed brown" I should think would describe its appearance; so that Mr. McIndoe need not wait to see how it would survive a snowstorm, for it is quite evident that it will not survive much frost.—R. GILCHRIST.

CERTIFICATED CHRYSANTHEMUMS.

AS noted in another page, at the meeting of the National Chrysanthemum Society, Wednesday, the 25th ult., the Japanese variety Belle Paule, which has already been described, was shown by Mr. N. Davis and Mr. Forbes, both receiving a certificate for it. Another variety from Messrs. Cannell & Sons was also similarly honoured, and appears likely to become fine for exhibition. This is described below, also Cullingfordi and Pietro Diaz, which were omitted last week.

BEAUTY OF SWANLEY (H. Cannell & Sons).—A handsome large semi-globular bloom of the Japanese type, with broad flat or slightly fluted erect and spreading florets, very full and of a soft rosy lilac tint. Very pretty and distinct as shown.

PIETRO DIAZ (M. Sullivan, Downshire House, Roehampton).—A large Japanese variety, with somewhat reflexed florets bright red, the margin and under surface golden. The plant is of dwarf habit and free-flowering. Certificated by the National Chrysanthemum Society.

CULLINGFORDI (C. Orchard).—This was certificated last year, but a similar honour was awarded at Kingston to Mr. C. Orchard, who grows it remarkably well. It is a grand variety, in colour an intensely rich crimson maroon, quite unequalled in that respect; the florets are also broad and reflexed in young blooms. Some dispute has arisen respecting the class in which this should be admitted, and unfortunately the confusion has been increased by the Kingston Society deciding it to be a Japanese, and the National Society, on the other hand, determine it to be a reflexed. As usually shown it is much better in the latter class.

Mr. W. E. Boyce, Holloway, writes: "In looking through your interesting account of Chrysanthemums certificated in 1885, I observe that you state Mr. Davis was awarded a first-class certificate for CHRYSANTHEMUM POMPONUM. The fact is, both myself and Mr. Davis exhibited Mandarin and Pomponium the same day. Mr. Davis was awarded a certificate for Mandarin and to me for Pomponium."

Several correspondents desire the address of M. B. Ghys, mentioned last week as the author of the "Essai sur le Chrysanthème." It is thus given on the work in question: "M. B. Ghys, Pharmacien, à Anzin (Nord), France." The "Essai" contains thirty pages and is published at the price of 1 franc.—L. C.

JUDGES AND THEIR WORK.

I WAS rather amused when I read the letter of Mr. L. V. Heathcote, to find how well the cap fitted at Leicester. I will not promise to satisfy his curiosity further than to say that I expected a reply from an entirely different quarter, and I shall be satisfied if the cap does not fit another midland town equally as well as Leicester, but perhaps they have profited by past experience and select judges from old exhibitors, or someone equally competent.

I am very pleased Mr. Heathcote has three such men who are thoroughly practical and experienced gardeners, as I have found but few such in our district who understand Apples and Pears, Potatoes and vegetables, to say nothing of the choicer kinds of fruits, flowers, and plants.

But there is one sentence I can hardly understand—"The remarks of 'J. L. B.' are absolutely untrue, and even if correct are a direct insult to the gentlemen referred to"—so I will leave it for others to solve. I may add that I had no intention of insulting anyone. A disappointed exhibitor is a very favourite term just now to apply to anyone who dares to say anything against judges.—J. L. B.

APPLE LADY SUDELEY.

THIS very beautiful early and highly perfumed Apple was first shown as Jacob's Strawberry at one of the meetings of the Royal Horticultural Society last year, and attracted a great deal of attention. It was grown and exhibited by Mr. Jacob of Petersfield, who cannot give any very definite account as to its origin; but whether it is novelty or an old variety rediscovered, it was unknown to all the most experienced fruit-growers who attended the meeting. The fruit is above medium size, being rather inclined to be large, over 3 inches in



Fig. 74.—Apple Lady Sudeley.

diameter, and exceeding 2½ inches high. It is roundish and bluntly ribbed, the ribs extending to the crown, where they form rather prominent knobs or ridges. The skin is bright golden yellow, almost entirely covered with brilliant dark crimson stripes shaded with paler crimson. On the shaded side the colour, with the exception of the ground, is paler; the surface is thinly strewn with fawn-coloured dots. Eye closed, with spreading connivent segments set in a deep and ribbed basin; tube conical, inclining to funnel-shape; stamens marginal. Stalk short and stout, deeply inserted in a round cavity. Flesh yellow, tender, very juicy, sweet, agreeably subacid, and of a highly perfumed flavour. Cells abaxile, obovate.

It is an early Apple of great beauty and excellence, ripening in August, and continuing in use till October. It has been well shown this year by Messrs. Bunyard & Co., Maidstone, by whom the stock has been acquired.

FORCING PLANTS.

IN gardens where large quantities of flowers are required it is necessary to set a house apart entirely for this purpose, which should be made perfectly sweet and clean without further delay. If the house selected contains a bed which can be filled with fermenting material so much the better, for flowering plants advance more rapidly by the moist genial heat derived from such a source than when the necessary temperature is maintained by hot-water pipes. Leaves are now plentiful in many establishments, and if good quantities have been stored away in a dry state for this purpose the fermenting material will not give much trouble in preparation. Oak and Beech leaves are the best for this purpose, as they contain heat for a much longer period than is the case

with those from other trees. One-third of long litter from the stables should be mixed with the leaves; but this should be well shaken out and thoroughly mixed with them, and the whole thrown into a heap in an open shed. If allowed to remain in this condition for two or three days fermentation will have commenced, when the whole should be turned daily to throw out rank steam. It is necessary to be careful in the preparation of this material before placing it in the house, for if not properly prepared before the bed is made up the ammonia thrown off will discolour the paint of the house, and will give a strong violent heat for a short time only; in fact, the material quickly decomposes if the bed when made up contains an excess of moisture. The time required for preparation will depend entirely upon the condition of the material as to moisture when the leaves and litter are first thrown into a heap. If well and judiciously prepared, and too much litter is not used, the bed inside the house will throw off a gentle moist heat, and continue to do so for a long time. This is what is needed, and the heat directly it displays any tendency to decline can soon be restored again by the introduction of a few barrowfuls of fresh material intermixed as the bed is turned over. When due care has been taken in the preparation of the material a few days only need elapse before the house can be filled with plants.

At first such plants as Ghent, Mollis and Indian Azaleas, Lilacs, Deutzias, Spiræas, Lily of the Valley, Tea Roses, Tulips, Hyacinths, and many other plants that it is necessary to bring forward, may be stood on the surface of the material for a few days or a week, and afterwards plunged. The varieties of Azalea indica are best stood upon the surface and not plunged. The bed of fermenting material will at first supply plenty of heat without the aid of that derived from the hot-water pipes. Nothing is gained by starting these plants in a high temperature, for they may fail to move if a hard uphill system of forcing is adopted. If the plants have been previously prepared for early forcing, all that is needed is a close atmosphere and a little warmth to excite them into activity, and when once growing a higher temperature may be maintained until they commence to unfold their flower buds. Directly they reach this stage they should receive cooler and more airy treatment, so that the flowers when expanded will contain colour and substance. Tea Roses should not be subjected to a higher temperature than 55° at night, neither should the temperature of the forcing house exceed 60° after the plants are once started. An exception of this may be made in the case of Lilac, Lily of the Valley, and Spiræas, for they will bear strong heat without injury.

Roses.—To succeed the Tea varieties introduced into the forcing house the next batch of plants should be under cover where they can be preserved from frost ready for introducing at any time, according to circumstances and the demand for flowers. The Hybrid Perpetuals intended for the earliest batch, and still outside, may now be pruned back and placed in a cool house. If required in bloom as early as possible, place the first batch in a vinery or Peach house ready for starting where the trees are intended to produce an early crop of fruit. The batch to follow them may have the protection of a cold house. The remainder of these varieties can remain outside for some time longer if the pots are plunged. All Tea varieties not yet wanted for forcing should be placed in cold frames or cool houses, where they can be protected from frost.—W. B.

JUDGING PEARS AND GRAPES AT THE BATH SHOW.

I THINK Mr. Ward has not improved his position by the use of the argument adopted on page 465. Not only did I express an honest opinion, but it was also the opinion of many practical gardeners, all known to both Mr. Ward and myself, and whose names I could give, that errors of judgment occurred more especially in the Pear classes. Mr. Ward claims to have been consistent throughout the classes, but it has yet to be proved that consistency and correctness of judgment are necessarily conjunctive. In my opinion, Mr. Taylor's Alicantes were very superior to any staged as far as finish and denseness of bloom were concerned, and should have been either first or third. They were not so "gappy" as Mr. Ward represents, neither were the third-prize bunches so "dirty" as he states they were. Mr. Nash, for whom I have great respect, is one of the most uniformly successful exhibitors at both the Bath and Bristol Shows, no one ever I should say grudging him his success, and his Alicantes are usually superb. This season he exhibited perfect bunches in August, but those shown at Bath were cut from overcropped Vines and were not so black as they might have been. When I used the word "favoured" I did not imply unfairness in decision, but, with the Editor's permission I will withdraw it and substitute lucky.

Mr. Ward did not, I think, attend the Bristol Show, yet he asserts that Messrs. Nash and Taylor "occupied the same positions with the same Grapes there." How does he know they were the same Grapes? and even if they were, two bunches only instead of three as at Bath were shown, and this might easily have made a material difference.

As to the Pears, I think it would have been better if Mr. Ward had let my criticism pass unnoticed. His estimate of Mr. Bannister's six dishes of four fruits each, not six, was wide of the mark, as there was no such marked disparity as he asserts. What if Pitmaston Duchess were in one dish, and that very small sort Winter Nelis in another? or, to adopt Mr. Ward's argument, what if three large-flowering Chrysanthemums were on the same board as three Pompons? If the latter were to be included, and were as well grown as their bigger brethren, must the fact of their being naturally small necessitate their being "passed?" My contention at the Bath Show was that each variety ought to have been judged on its own merits and without reference to its neighbours, and I

repeat it here. Every dish Mr. Bannister staged was equally good. Ripeness had nothing to do with it, ripe fruit only being stipulated for in the case of a single dish of Pears. In the "Notes and Gleanings" of last week it will have been observed that the Bath Committee awarded Mr. Bannister an equal first prize. What Messrs. Coleman and Wildsmith would have done at Bath nobody knows, and their names might well have been left out.—YOUR REPORTER.

VENUS'S EARLY DWARF CABBAGE.

If Mr. Venus has any Cabbages ready at the time when Mr. Inglis sends his collection to the Fruit Committee for their inspection he has no objection whatever to sending them, but as Howick is much earlier than Allerburn House, it is possible they may not be ready at the same time. However, I enclose some seed of Venus's selection, and if Mr. Inglis will send some of his perhaps the Editor will be kind enough to have them grown side by side, and under the same circumstances, and I report thereon. This, I think, will be a fair way to decide the matter.

Mr. Inglis understands that Venus's Cabbage is a selection from Cook's Early Dwarf, and that he is in possession of a selection from the same variety, which he believes is superior to that possessed by Mr. Venus. This is certainly an admission that Mr. Inglis thinks there is a difference in the two selections.

It is nearly twenty years since a few Cabbage plants were selected from a seed bed and given to Mr. Venus. During all that time he has always selected the largest and finest for seed purposes. So long has this Cabbage been connected with the name of Venus, and so familiar in this neighbourhood that, when recommending it, it never occurred to my mind to make any inquiry as to any original name that it might possess.

I have only once seen Cook's Early Dwarf growing. What I saw were more globular in form, and not near so large as what we have had from Mr. Venus. My only object in recommending this Cabbage was simply to try and make more widely known a variety that I knew was of great merit, and I thought too little known.

During the past twenty-six years I have derived much pleasure and profit from the *Journal of Horticulture*, and thought I might be doing some good in recommending such an excellent article.—JOSEPH OLIVER, *Eslington Park, Ayrwick.*

[We will have the Cabbages fairly tried if Mr. Inglis sends us seed as suggested.]

ALPINE PLANTS AND THEIR CULTIVATION.

THERE has long been a general though erroneous idea that the culture of alpine plants is beset with great difficulty; this, though lessened during the past few years, is by no means fully dispelled, for many would gladly take Alpines in hand, but they have no rockery, and appear to think that such a structure must be of great height. That such ideas are without foundation is obvious if we consider for a moment the great altitude at which many of the choicest plants of Alpine regions are found. Is it not rather a matter for surprise that we can successfully grow such numbers of them at home in the lowlands? Such great altitudes are not indispensable in the culture of these plants, nor do we require elaborate and expensive rockeries; indeed a number of them may be successfully grown in good soil on an even surface.

One of the primary points in the cultivation of alpine plants, and indeed any other class of plants, is a fondness for that particular group of plants. Nothing which may be written can in any degree compare with the picture presented by the Alpine region in flower, and nothing can in any way enlighten those who indulge in their cultivation so much as to see them growing in their native haunts. There is many a hint, many a small secret, to be gained as to their preference to this or that rock against which it may be growing. Happily, however, this preference of soils is confined to few species under cultivation since plants which are said to have a distinct hatred for such and such soil have been grown luxuriantly in that particular soil, so that it would appear that such precise preparations are not indispensable. This has repeatedly been the case during my own experience, and I may here mention two plants, *Rhododendron ferrugineum* and *hirsutum*; the former in a wild state always (or nearly so) inhabiting granitic rocks, and the latter limestone; and not only do travellers recognise the two species by their habitats (for the flowers are very similar), but they even assert that neither will grow on the opposite formation. Whether this be so or not I cannot determine, but neither limestone or granite is indispensable in the cultivation of the two species, both having grown in company with *Daphne genkwa* and *Andromeda* in a mixture of peat, loam, and sandy grit. For another instance I would name *Gentiana verna*, one of the loveliest plants of the Alps, often found at high elevations and reputedly fond of limestone; the same plant, however, occurs, though less frequently, in England and Ireland, and when found within the limits of our own isle it is invariably in a rich loamy pasture. Seeing that it does admirably in loamy soils generally under cultivation, the limestone

portion need no longer be regarded as essential to its well-being or success.

Other instances I have in mind where *Saxifraga Burseriana*, *Gentiana pumila*, and *Edraianthus dalmaticus* grow to the greatest perfection in loamy soils of ordinary character, by which I mean not specially prepared soil, and which receives annually a dressing of manure. Here we have three choice alpine plants growing luxuriantly in ordinary soil containing manure. There are few growers of alpine plants which allow them manure, but I am assured that they benefit by it. My reasons for dwelling more particularly on the food of choice alpine plants, and in doing so to show how indifferent are many of the so-called alpine plants to the soil in which they are placed, is to endeavour to remove the opinion that particular soils must be had for certain plants. Laying down hard-and-fast rules as regards soil has debarred not a few from enjoying these modest beauties of the Alps in our gardens at home, and kept many more from attempting their cultivation. The majority of alpine plants may be grown with complete success in a fairly rich sandy loam; others prefer peat, and others peat and loam in equal proportions. Those that will not thrive in such soils as these are few, and their failure may readily be traced to other causes. Where limestone is deemed essential to a few plants, and not easily obtained, it will be best supplied in the shape of old mortar rubbish. For such plants as the encrusted species of *Saxifragas* this is agreeable to the plants, though by no means essential to their success. Lime, too, is very often supplied without thought; for example, some waters abound in lime, and when the plants receive copious supplies of those which are supposed to delight in it and those that abhor it all receive it alike.

One thing which the alpine tourist would always do well to note is whether any particular plant or plants prefer wet spongy ground to dry rocky soils, and whether they generally grow in sunny or shady spots. No doubt they will be found to occur in a variety of situations and soils, in which case the most luxuriant plants should be examined and noted accordingly. It may not be generally known that in a wild state *Helleborus niger* to a considerable extent inhabits soils abounding with granitic rock, but to insure success in England we give it a deep and thoroughly enriched loam, and these cannot be either too deep or too good for these plants. *Pinguiculas* in their mountain home are not unfrequently found on banks of steep stones, not singly, but by thousands, the stones being kept moist by trickling streams from above. Here it would appear that the one great want is supplied by the moisture alone, and without which the plants would soon perish. I have seen this mode of growing them well illustrated in the York nurseries, and charmingly natural they appear when thus placed, but notwithstanding which they may be grown and flowered equally well in small colonies on an even surface in spongy peat and sphagnum moss. To these I could add many more instances, all, however, having a similar bearing—viz., that elaborate and expensive rockeries are not absolutely necessary for the successful culture of alpine plants in the lowlands, but I fully realise the value of well-constructed rockeries, which, however, are anything but numerous. Heaps of stones, a disgrace to the name of rockwork, may occasionally be seen upon which alpine plants cannot thrive, and the only one in nursery gardens known to the writer is that in the York nurseries. This is worthy the name, a veritable specimen of natural rock, and while such a one cannot easily be imitated, there are other means of forming and constructing such places as suit the majority of alpine plants in most gardens.—E. JENKINS.

(To be continued.)



THE annual general meeting of the NATIONAL AURICULA and NATIONAL CARNATION and PICOTEE SOCIETIES will be held, by permission of the Council of the Royal Horticultural Society, in the Conservatory, South Kensington, as soon after twelve o'clock as possible, on Tuesday, December 8th, 1885. The business of the meeting will be the election of officers and Committee, receiving the Secretary's and Treasurer's report, the election of Judges for the ensuing year, and any other necessary business as may pertain to the annual general meeting.

—A GRAND SHOW OF ORCHIDS AT BIRMINGHAM is announced

to be held in the Botanical Garden, Edgbaston, on Wednesday and Thursday, May 12th and 13th, 1886, when prizes to the amount of £141 will be offered in eleven classes. The first five are for groups of twenty, ten, and six plants for nurserymen and amateurs, and in the others *Odontoglossum*, *Cattleyas*, *Laelias*, *Masdevallias*, and cut Orchid flowers are provided for. The Hon. Secretaries are William Southall and Hugh Nettlefold, Esq.'s.

—ONE of the best stove flowering plants of recent introduction is *AMASONIA PUNICEA*, for which plant cultivators are indebted to Messrs. J. Veitch & Sons, Chelsea. It has been shown and certificated at most of the leading exhibitions this year, and has attracted much attention, owing to its distinctness and beauty. It lasts in good condition for a surprisingly long time, plants having been in flower for over three months at Chelsea, and there are several now which have by no means lost all their attractions. The chief beauty resides in the bright red bracts which accompany the yellowish tubular flowers in long terminal racemes, the leaves being elliptical, dark green, and bold in appearance. One very good quality must not be overlooked—namely, it is most easily grown and propagated, and there is no doubt it would make a most effective specimen for exhibition.

—WE are informed that the Directors of the GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY have fixed their 1886 Exhibitions to be held in the St. Andrew's Hall, Granville Street, Glasgow, as follows—Spring, Wednesday, 24th March, 1886. Autumn, Wednesday, 8th September, 1886.

—MR. W. MONK, Forest House, Leytonstone, writes:—"I wish to thank 'D., Deal,' for his remarks on page 468 in favour of the TRAINED SPECIMEN CHRYSANTHEMUMS at the Aquarium Exhibition. I am glad that someone has spoken out in favour of the cultivation of Chrysanthemums in pots, because Mr. Iggulden last year wrote to say that they are not wanted at the shows and ought not to be encouraged. In my opinion a show without good specimen plants is not worth visiting."

—AT the NORTHAMPTON CHRYSANTHEMUM SHOW we are informed that Mr. W. A. Walter, gardener to Alfred B. Loder, Esq., was very successful in the open classes for cut blooms, taking second for twenty-four incurves, first for twenty-four Japanese, and in Class A, for gardeners within a radius of thirty miles of Northampton, he obtained second for twelve Japanese, distinct, second for six, one variety; first for twelve incurved, distinct; first for six, distinct; first for six, one variety, first for six, *Anemone*; and first for six, reflexed; Mr. Underwood Delapré Abbey, and Mr. W. S. Miller, Whittlebury, taking the remaining prizes in the same classes in the order of their names, with the exception of twelve Japanese and six one variety Japanese, where Mr. Underwood was first with good blooms.

—MR. C. WARING writes:—"At the NEWPORT HORTICULTURAL SOCIETY'S SHOW, Monmouth, held on the 19th inst., I gained the second prize for Japanese Chrysanthemum cut blooms; they were from cut-down plants grown for decoration only. In your report of the Show my employer's name should be Mrs. J. Aikin, it is misprinted Atkins."

—"G." sends the following paragraph—"THE APHIDES have hitherto been supposed to be the most prolific of living beings; and it is disappointing to find a writer who has been at the pains to count the progeny of a single Rose aphid, declaring that the individuals only number 32,768,000,000,000,000,000. He, no doubt, did not take a fair sample of aphids, and we hope he will try again with a result that will do more justice to this interesting insect. If he would also take the trouble to write the result in words instead of figures, he would gratify many persons."

—MR. W. F. BATEMAN, Kents Bank, Carnforth, writes:—"As an evidence of the MILDNESS OF THE SEASON, a swallow was seen flitting about over the ornamental water at Grange-over-Sands this afternoon; the bird seemed to have a remarkably fine coat of feathers, and there seemed plenty of food in the shape of insects in the air."

—"ENTOMOLOGIST" writes in reference to APRICOT BRANCHES DYING:—"Some few years since examples of branches that had perished from an insect depredator were sent to me for examination. The wood had been tunnelled by the larvæ of a clearwing moth, the special foe of the Pear twigs and wood—viz., *Sesia myopæforme*. I have not been able to hear of any similar instances, but as the species once occurred on the Apricot it might do again. Should you hear of any

case of Apricot failure where there is reason to suspect this insect may be concerned I would like to know about it."

— AN interesting description of a HYBRID PALM was recently given in the "Revue Horticole," by M. Carrière. It appears that a cross was obtained some time ago between *Chamærops humilis* and *Phoenix dactylifera*, the former being the seed-bearing parent. This was named *Microphœnix decipiens*, and when it flowered it was crossed with *Chamærops excelsa*, thus making the hybrid the seed parent. This experiment also proved successful, for plants of an intermediate character have been raised, upon which the name *Microphœnix Sahuti* has been bestowed in honour of the raiser, M. Sahut of Montpellier.

— THE *Tropical Agriculturist* remarks:—"The good people at home seem to be uncommonly bothered by the two products CACAO AND COCOA NUT. An English firm, who have made a specialty of 'Ceylon chocolate,' illustrate their advertisements of it with the picture of a man climbing a Coconut Palm and throwing Cacao Beans down to the gatherers below!"

— MR. R. MORSE, The Lodge, Cotham House, Tyndalls Park, Clifton, Bristol, writes:—"Allow me to correct a mistake in the report of the BRISTOL CHRYSANTHEMUM SHOW in the Journal of last week. It is stated that table plants were shown in great numbers, the majority of them being highly meritorious. Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., was first. It should have been Mr. R. Morse, gardener to S. Budgetts, Esq., first, Mr. Bannister not being awarded a prize in the class for table plants."

— A CORRESPONDENT writes to an Indian paper as follows on WOODEN LABELS FOR TREES:—"The following method of preserving wooden labels that are to be used on trees or in exposed places is recommended:—Thoroughly soak the pieces of wood in a strong solution of sulphate of iron; then lay them, after they are dry, in lime water. This causes the formation of sulphate of lime, a very insoluble salt, in the wood. The rapid destruction of the labels by the weather is thus prevented. Bass mats, twine, and other substances used in tying or covering up trees or plants, when treated in the same manner, are similarly preserved. At a recent meeting of the Horticultural Society in Berlin wooden labels thus treated were shown which had been constantly exposed to the weather during two years without being affected thereby."

— IN a colonial contemporary Mr. J. E. Taylor, Editor of "Science Gossip," thus refers to the BRACKEN FERN IN AUSTRALIA:—"This seems to be as great a nuisance to the agriculturist of these parts as the rabbits are to the squatter. The rich volcanic soils feed it well, and it spreads and develops accordingly. It costs a good deal, both in trouble and money, to keep it down. Burning the Fern only seems to make it grow more luxuriantly next year; chopping the 'roots' apparently tends to spread it. The so-called 'root' of the bracken is in reality an underground stem, or rhizome, the same part which in the Tree Fern we regard as the trunk. Within this stem, under ground or above ground, there is stored each year a supply of starch and other plant food. Every year's fronds contribute to the supply. The young opening fronds draw upon the vegetable banking account until they are fully developed, and then they repay the parent by contributing towards the stored-up supply in the stem. It is evident, therefore, that if we cut or mow down the young, half-coiled fronds of the bracken, just at the time when they are developing, and when they have been abstracting the nourishment from the stem, the latter will be impoverished. If we mow them down year by year the stems must wither and die. This may seem a rather tedious process, but in a few years it would prove an effective one."

WELLINGTONIA GIGANTEA.

THIS noble tree is well known in many gardens, but it is more frequently seen in extensive pleasure grounds than in small gardens, and there is no reason it should not be planted in both of these as much as in the former. Some Conifers and trees are more suitable for open positions than others, as they have a habit of spreading more than ascending, but the Wellingtonia is not one of these, as it is really narrow in its proportions at the base, considering its height. We have some old and young trees of it here, and both are very ornamental. The largest is nearly 60 feet in height, and its stem 3 feet from the ground is 13 feet 9 inches in circumference. Two years ago this specimen produced many clusters of cones near the top, but these have fallen, and recently numbers of cones have formed on the lower branches. There is another specimen a short way from this, equally high, but not so thick, and it is sterile.

Both of these have had the shelter of other trees for a considerable time, or indeed throughout all their young days, but for some years past their props have shot above this protection, and as they are now subject to some strong gales from the sea I fear they will not go much higher. The young specimens were planted by Royalty four years ago. They were 18 inches high when planted. One is now 6 feet 6 inches, and the other 9 inches less. From this it will be seen they grow moderately quick, and from first to last they retain a beautiful symmetrical outline and conical form. It would be unwise to plant them so near the edge of a walk that the branches would intrude in a few years, but if they are kept 10 feet or so from the edge there is little danger of their doing this. They are not over-particular as to soil, but succeed best in a deep loam, or position free from a predominance of stones. I have seen some very good specimens growing in ordinary garden soil.—J. MUIR, *Margam*.

PEAR TREES AT CARDIFF CASTLE.

WHEN on a visit to Cardiff Castle gardens, over which Mr. A. Pettigrew presides with such marked ability, we were very much impressed with the fine healthy appearance of the Pear trees, and the conclusion self and party of practical gardeners arrived at was, that taking all things into consideration a finer lot of trees could not well be found. For my part, I very much question whether another such a collection of about the same age is to be seen in this country, and as Mr. Pettigrew kindly favoured me with a few of the principal details of his practice with them, these I now place before the readers of the *Journal of Horticulture*. The kitchen garden walls are furnished with horizontally trained trees, while several of the long open borders are occupied with rows of pyramids, and in each case there was much to admire, especially seeing it had only taken ten years to bring them to such a profitable size. Mr. Pettigrew started with maidens, or unpruned and untrained trees, in each instance, those intended for pyramids being planted at a distance of 6 feet from the Box edging, and 14 feet apart. Early in the winter they were cut down to within 18 inches of the ground, and in the following spring they broke well, eventually ripening from three to four strong shoots, which were shortened at the early winter pruning to 2 feet from where they started, leaving the central or leading shoot a little longer than the others. This system of pruning was practised, leaving more or less growth according to circumstances, till the trees were well furnished, after which all the growths not required to fill the tree were spurred in regularly at the autumn pruning, but the principal branches are not shortened unless badly ripened, in which case the plan is to cut to a good bud.

It may here be stated that Mr. Pettigrew does not favour the practice of constantly pinching and stopping the young shoots during the summer, but to quote his own words, "all the pruning of pyramids is done, if possible, in the autumn and before the new year," and he further added that "the trees have been in fine bearing condition for some years, and all that is required to insure good crops is good weather when they are in flower." That his practice is the right one anyone who has seen the trees must admit, and at the time of my visit many of those grand specimens were so heavily cropped as to need props to support the principal branches.

The trees are planted in sorts, or from three to nine of each, and they have grown from 12 feet to 20 feet in height, and from 5 feet to 12 feet in diameter, each tree in a good season being capable of perfecting from 3 to 5 bushels of fine fruit. The following are the principal sorts grown, with the dimensions of a few of them—The trees of Pitmaston Duchess are among the best in the garden, each of the nine trees averaging 20 feet in height, and 12 feet through near the ground. They flower very freely every year, but generally get nipped by the frost, the consequence being rather short crops of very large fruit. On a south wall it crops remarkably well, and the fruit are found of excellent flavour. Williams' Bon Chrétien have attained a height of 14 feet, and are 6 feet through, the trees rarely failing to bear well. Beurré Clairgeau is of columnar habit, growing to a height of 14 feet, and only 5 feet through. It is not found a good bearer as a pyramid, but is an enormous cropper on a south wall, though the variety scarcely merits so good a position. Glou Morceau is about 14 feet high and 8 feet through, and is fairly profitable as a pyramid, while Easter Beurré has attained a height of 10 feet and 6 feet in diameter. There are several very handsome trees of Louise Bonne of Jersey, and these are about 10 feet high and 8 feet through. It is found to be one of the most free-bearing sorts in cultivation, besides being handsome and of excellent quality. Marie Louise Neaville has grown to a height of 10 feet, and about 8 feet in diameter, generally bearing well. Beurré Superfin also forms a good pyramid, and is very free-bearing and good in quality. These trees are about 10 feet high and 6 feet through. Duchesse d'Angoulême, another free-bearing sort, is 12 feet high and as much through, while Beurré Diel has attained a height of 20 feet and 8 feet through, usually cropping well. Beurré d'Amanlis are about 12 feet high and 10 feet through, and is a wonderful cropper, the quality also being much liked. Jargonelle this season perfected enormous crops, and these trees are 14 high and 10 feet through. Marie Louise has grown to a height of about 12 feet, and about 10 feet in diameter. The six trees of Bergamotte Esperen are fully 12 feet high and 8 feet through, and this was also carrying exceptionally heavy crops. This does not complete the list of varieties grown as pyramids, but enough are given to enable my readers to form some idea of the style of trees so rapidly created.

For furnishing the walls, 12 feet in height, the maidens were planted 21 feet apart, and the whole of the space is now occupied. They were

pruned at first to within 14 inches of the ground; these also broke well the following spring, and three well-placed branches were allowed to grow—two, one on each side, being trained horizontally on the wall, and the other perpendicularly. This central shoot was shortened at pruning time, leaving from 18 inches to 20 inches of new wood, according to circumstances, and the following spring the three shoots again selected and properly laid in, this going on annually till the top of the wall was reached. In this manner a fine clear main stem was secured, this in every case being well and regularly furnished with horizontal branches. The latter are never shortened till their limit is reached, unless it happened that they were not properly ripened, when it was considered necessary to cut to where it was ripened. Mr. Pettigrew, while the trees were young, examined them when they were starting in the spring and removed "two or more buds from the points of the permanent branches," this naturally strengthening the central or most important break. Root-pruning is also resorted to when it is required in order to bring any of the trees into good bearing order, and it is almost needless to add that all the trees are on the Pear stock, and that the soil is of a character to favour fruit culture, though this does not in the least detract from the merit of the achievement.

The following sorts are preferred by Mr. Pettigrew for wall culture, and most of the sorts can be relied upon for fruiting in even less favoured localities—Jargonelle, Williams' Bon Chrétien, Marie Louise, Doyenné du Comice, Fondante d'Automne, Pitmaston Duchess, Gansel's Bergamot, Brown Benrre, Duchesse d'Angoulême, Benrre Bosc, General Todleben, Beurré Clairgeau, Glou Morceau, Beurré Diel, Josephine de Malines, Crassane, Knight's Monarch, Chaumontel, Winter Nelis, Ne Plus Meuris, Bergamotte Esperen, and Easter Beurré.—W. IGGULDEN.

CHRYSANTHEMUM NOTES.

CHRYSANTHEMUM CULLINGFORDI.—The Committee of the Kingston and Surbiton Chrysanthemum Society met last evening and fixed Tuesday and Wednesday, November 9th and 10th, as the date of next year's exhibition. They had also brought under their notice as to whether we should admit the new variety, Cullingfordi, in the Japanese classes. Apart from its character as a type of Japanese or reflexed, it was pointed out that if we confined it to the reflexed class we should limit its cultivation as an exhibition variety, for we should lose it in the specimen plant classes, as we have no provision for reflexed varieties in those classes, the prizes being offered for incurved or Japanese respectively. It might be said, Why not admit them with the incurved and say, "large-flowered varieties, Japanese excluded?" Then growers say, "Judges have such a weakness for incurved that a man that shows a reflexed in a class stands at a disadvantage, other points being equal." The variety under notice seems such a good grower that it is the general opinion it will make a good specimen Japanese and be a great attraction on account of its high colour. Then as to its character. Knowing the point was going to be discussed, I produced the two blooms enclosed, the one fully expanded flower of Cullingfordi and the other a reflexed variety, Stevens' Sulphur Gem, a variety raised by Mr. Stevens of Putney and sent to me for trial. The latter is a good type of a reflexed flower, quite different from the Christines and other so-called reflexed varieties. Cullingfordi resembles in size and shape the character of Elaine, but if anything the florets are more erect than that variety, and it has their beautiful golden colour on the reverse side of the florets so characteristic of the Japanese, and that is not to be found in King of the Crimson or other dark reflexed varieties. The opinion of the Committee was that if we excluded this variety on principle we should have to exclude Elaine, Triomphe du Nord, and others, and at some future time there may be enough to make a separate class for Japanese reflexed, as we have done the Anemones, but that time is not yet come, so the Committee passed a resolution and decided to recognise it as a Japanese.

I have sent you the two blooms. Will you give us your opinion on the subject? You will allow, of course, for the reduction in size of Cullingfordi through being a stale bloom and also the loss of colour. This grew in an 8-inch pot and carried five flowers. I have one now in a 6-inch pot measuring just 2 feet high, including pot, and carrying a bloom as large as this one. So with a better start another year I think it could be grown larger and will look well in a stand of Japs.

I see Mr. Castle has not included in his list the first-class certificate I had for Cullingfordi at Kingston. I should have had one at the Palace, but it was certificated there last year.—C. ORCHARD.

[In view of two conflicting decisions on this subject we prefer to wait the issue of events.]

NATIONAL CHRYSANTHEMUM SOCIETY.—A considerable number of blooms were submitted at the meeting on November 25th, the principal exhibitors being Messrs. Cannell & Sons, N. Davis, R. Owen, Veitch and Sons, and W. Wright (Temple Gardens). First-class certificates were awarded for the following:—

Beauty of Swanley (Cannell).—A large full Japanese flower; colour rosy blush, suffused purple, with erect fluted florets.

Belle Panle (N. Davis and R. Owen).—A magnificent Japanese variety of recent introduction; colour white, heavily edged with bright lilac purple.

The following were highly commended for decorative purposes:—

Sulphur Gem (G. Stevens).—A sulphur reflexed flower in the way of Annie Salter.

La Favorite (Veitch and Cannell).—A hybrid Pompon; colour bright rosy pink.

Ruhrum Perfectum (Davis).—Pompon; very rich crimson.

Mdlle. Melanie Fahre (Wright).—A reflexed Japanese, likely to prove a very useful variety; colour rosy peach.

Mr. N. Davis called the Committee's attention to blooms of Cullingfordi submitted by him to test their opinion as to the class in which the variety should be shown, and it was unanimously resolved that it should be classed as a reflexed flower. The next meeting of the Society is Wednesday, December 9th, at the Royal Aquarium.

CHRYSANTHEMUM BELLE PAULE.—This fine Japanese variety will, when it becomes plentiful, be a great favourite with exhibitors. Its fine shape and colour, pure white with lilac edges, is very distinct from any Japanese variety I am acquainted with; it very much resembles Fair Maid of Guernsey in foliage, wood, and habit, which is no small point in its favour.—O. PAGE, Fern Lodge, Bracknell, Berks.

CLONMEL CHRYSANTHEMUM AND FRUIT SHOW.

NOTWITHSTANDING the prevailing depression which unfortunately affects every interest and the political excitement, Clonmel and vicinity, thanks to a few spirited gentlemen, has come to the front and held its first Chrysanthemum, though not its first fruit Show, on the 26th ult. You must permit me to specially mention the Committee who commenced the good work, the premier reference being due to the Honorary Secretary, Thomas Phelan, Esq., Spring Gardens; Frederick Clibborn, Esq., Anner House; and H. S. Boyd, Esq., Suirmount. These gentlemen formed, the managing Committee, and had associated with them George Gould, Esq., Birdhill, and Capt. Bagwell, D.L., Marlfield, all near this town. There were three sections in the schedule—plants in pots, cut blooms, and fruit divided into six classes. As notice of the intended Show was only published less than a month since, the Committee, to invite competition, decided to commence modestly, and have no reason to complain of the result.

In the class for six plants in pots there were four handsome well-bloomed groups, not trained, yet very floriferous and decorative. First F. Clibborn, Esq., (gardener, Mr. P. Crowley); second G. Gough, Esq. (gardener, Mr. T. Bulfin). Next came the cut bloom section, the incurved and Japanese being separate classes. The first prize for the best twelve incurved went to Thos. Phelan, Esq., with the following varieties really well done—Empress of India, Golden Empress, Lord Wolseley, Mr. Bunn, Lady Hardinge, Jeanne d'Arc, Nil Desperandum, Golden Queen of England, Princess of Wales, Bronze Jardin des Plantes, Alfred Salter, and White Venus; set up, naming from left to right—Empress of India was of immense size, and fully 5 inches deep. Mr. Phelan's gardener is P. Halpin, but the plants received his own close supervision; Mrs. Malcomson (head gardener, Mr. J. Crehan) was a good second, having the aforementioned blooms except the Rundle family, that rarely come near the others in size, no matter how well done. Fine blooms were shown by Mr. Clibborn, but they were too far gone, and lost points in that way. There were five entries all creditable. Next came the Japanese, around the stands of which was a buzz of excitement all day, and again when illuminated in the evening. Again Mr. Phelan came easily first with large though perfect blooms that would probably take a prize at any show in the kingdom. His stand contained the following dozen typical distinct varieties, naming from the left. Top row—Mons. Astorg, Mdlle. Audiguier, Comte Germiny, J. Delaux; second row—Rubrum striatum, Lady Selborne, James Salter, and Curiosity; front row—Bouquet Fait, Golden Dragon, Simon Delaux, and Peter the Great. Great difficulty was experienced in deciding between the next three entries, Messrs. Boyd's, Clibborn's and Crehan's, the former ultimately winning by two points. He had nine new varieties of last year's introduction, but with one exception Mr. Phelan's top row plants were of great size, especially Mdlle. Audiguier and J. Delaux, in fact the whole dozen varieties seem thoroughly reliable all seasons. The exception alluded to was two immense blooms, perfect in every particular, in Mrs. Malcomson's stand of Agreements de la Nature, within a fraction of 9 inches in diameter. All the exhibitors in this class could just as readily stage two dozen distinct varieties; and for non-competition to compete the display, Mr. Phelan staged, all told, four dozen distinct varieties of cut blooms; Mr. Clibborn three, and an equal number from Mr. Boyd, without counting those sent in pots or for decorative purposes.

The next two classes, as might be expected, did not attract much attention—viz., twelve reflexed and Anemone-flowered, and a similar number of Pompons in bunches. Messrs. Boyd and Phelan, already named, divided the honours, first and second, in the order named between them. The newer introductions of the Fabian de Mediana type and three new fimbriated varieties in Mr. Boyd's stand were much admired. The first prize in the amateurs' class for a dozen "any variety" went to Mrs. Jellico, Cabir. Lastly, in this section came the disposition of a large silver medal, offered by Messrs. Saunders, Friars Walk Nurseries, Cork, for the best collection of Chrysanthemums in the show. This deservedly went to the indefatigable Hon. Secretary, Mr. Phelan. Before passing to the fruit department it may be mentioned the Show was held in the spacious ballroom of the Court house, the stands and tables being draped with scarlet cloth, and the walls festooned most artistically with white and crimson wreaths. A large central table was charmingly arranged with Palms, Cycads, Bamboos, Poinsettias, &c., down the centre; Orchids, Dracenas, Crotons, and Maidenhair Ferns, then gradually sloped down to the stands with the best taste, while from the vestibule outside sweet music was discoursed by the fine Militia band of local Artillery. The prizes in the fruit section were for "the best collections." Mrs. Malcomson (Mr. Crehan) won easily first prize with Melons, two varieties of Grapes, and large collections, two dozen varieties of Pears and Apples, each kind. Second prize went to Captain Bagwell (Mr. Cleary, gardener) for five dishes of Pears, Apples (kitchen and dessert), Nuts Medlars, &c. The other exhibitors were Mrs. Crean, Coolgreany, and the aforementioned Messrs. Boyd and Phelan. Thus commenced what, is hoped, will yet become one of the best provincial Chrysanthemum Shows. Mr. F. W. Burbidge, F.L.S. Trinity College Botanic Gardens, Dublin, was one of the Judges, but missed his train; Mr. D. Saunders, Friars Walk, Nurseries, Cork, another, was detained by press of business; and in their

unavoidable absence your correspondent had reluctantly to act alone.—
W. J. MURPHY.

ERIOBOTRYA JAPONICA (LOQUAT) FRUITING IN THE OPEN AIR IN ENGLAND.

BEING much interested in your reply to "Medicus," page 414 in a recent Journal respecting the above plant, I beg to enclose for the Editor's inspection a leaf from a plant growing against a south wall (front of the mansion here, six miles from Tunbridge), also a seed from one of the fruits which ripened in the latter part of September of this year. The plant has been in its present position for probably over fifty years. We have an old workman employed in the gardens who has been on the estate nearly forty years, and he has no recollection of its being planted.

This is the first time that the tree has been known to fruit, and possibly it would not have been observed this season had it not been accidentally observed by a lady from an upper window. The form of the fruit much resembled a small summer Pippin Apple, both in size and colour. If the above simple statement requires further authentication, I would refer to my worthy employer, who first called my attention to the beautiful shining yellow fruit peeping out from among the large dark green foliage. I noticed, when at Linton Park four or five years ago, Mr. Groom, one of dear old Robson's successors, had several fruits on a plant under glass, but I have not before seen the fruit of this country's produce, although I have been constantly gardening for the past thirty years from beyond John o' Groats southwards.—WM. CHISHOLM, *Oxon Heath Park Gardens, Tunbridge, Kent.*

[The leaf sent was very fine, 1 foot long and 5 inches broad, proving the plant to be in vigorous health.]

THE ONION FARMS OF OHIO.

AN American paper gives the following description of the most extensive Onion farms in the United States. Ohio has four remarkable "Onion beds," Berea, Perry, Kinsman, and Aurora, but those at Berea are the most noted, and at Perry the most scattering, for anyone can raise Onions in the latter place. In a general way the practices at Berea govern all the rest. Onions have been raised there as a special crop for at least twenty-five years. The cultivation has never been abandoned on any of the farms, but, on the contrary, has gradually increased, so that the original fifty acres has now spread over five times that area. The first Onion lands were located about the margin of a marshy lake, known locally as Lake Abram. In years the farm has been extended by clearing, the lake has been drained down to less than one-third of its size, adjoining swamps have been cleared out and Onions planted, and even the uplands have, by modern ideas of fertilising, been made to yield profitable crops of Onions. Along Rocky River occasional "pockets of muck" are found. One of the most noticeable of these is the farm of Dr. D. T. Gould, located among encircling hills, and so completely drained that the floods and disasters that so often overtake the owners of the low farms never trouble him, and it is on this that some of the most interesting problems relating to Onion culture have been solved and some of the mysteries cleared up, as will be shown further on.

The great Onion farm comprises nearly 200 acres. It is composed of the richest and blackest of vegetable mould, from 4 to 25 feet in thickness, and completely free from clay, and shows but little if any disposition to turn to clay. The soil packs fairly well, and sufficiently not to blow away, except on rare occasions. The water line of constant moisture does not vary much from 2 feet from the surface, and fairly dry seasons are therefore more to be desired than feared. The danger is of too much water. The discharge, or outlet of the lake, finds no fall for over two miles, and a freshet is liable to cause the lake to overflow its boundaries and submerge the Onion lands, once its natural bed; this season three inundations occurred. But the drainage and lay of the fields are all made to conform to certain rules, and the damage is not as great as one would suppose. The farm is traversed at stated distances with wide ditches, often planked like a flume, and these are again crossed and recrossed by smaller ditches and underdrains. At the foot of the low hills that surround the basin huge canal-like ditches with their inside embankments, looking very warlike, are dug going to the river, and these keep out the hillside brooks and the rainfall from the high lands, and convey it away to the streams.

The division of the land is a matter of curiosity to the visitor, whose ideas of line fences are associated with rail and wire. The farm at Berea is owned by about forty persons, but as about six acres is the largest area of crop controlled by one man, the growing of the crop is thus farmed out to hundreds of renters, who occupy from one-fourth acre up to two or three. The rental is half of the crop, one to furnish muck and fertility; the other the seed and labour. The land is rarely rented for a monetary consideration. The Onions are made to pay rent, and the owner and renter thus share all successes and failures. Onions fluctuate so in value one year with another that it is hard to say what rent amounts to, but probably one year with another 100 dollars per acre is about the sum received from the rent. These lands are not for sale; they cannot be purchased, and if they could speculators would gladly purchase them at 1000 dollars per acre as an investment.

Once these lands were supposed to be of inexhaustible fertility and would never require any artificial aid, but now well-rotted manure, ashes, bonemeal, limekiln waste, &c., are used in great quantities, and the principal office of the soil seems to be a receptacle for the fertility, and agent to change it into plant food. Less manure is used each year, and more purchased fertilisers. The adding of great quantities of manure tends to lighten the soil, and the object is to make it as compact as possible without interference with rapid working. There is already enough vegetable matter, and will be for years, and the crop better responds to concentrated manures, like bone meal, &c. Deep working is also objected to. A few years ago it was argued that deep turning would be advisable, but now no one recommends it, and surface-stirring of the soil is only practised. Spring harrows,

notably the Whipple, are held in great favour, as they stir all the soil, leave no unworked places, and do not clog. The oblique set of the teeth seem to perfectly prepare the soil, and when the roller has followed nothing seems to be desired.

CYPRIPEDIUMS IN VINERIES.

CAN any of your correspondents recommend a *Cypripedium* which will make a good companion for *C. insigne*, which does well with us? It flowered in the spring, showing two flowers on one stem, and is in bloom again this autumn with seven stems. We have only one house, which has to do duty as a vinery; it has a rockery built against the back wall and planted with Ferns, besides stages filled with Ferns in pots, *Adiantums* generally, which do well with us. Then in the autumn it is filled with *Chrysanthemums* in pots, which do fairly well. The house is 30 feet by 15 feet, is heated with a flue, and we use a little fire all winter, which keeps the house between 40° and 50°, according to the weather. The Vines start during March, and come on gently as the weather improves. Our Grapes (Black Hamburgs) always finish well and have a good flavour.

I shall be glad to see some remarks from Mr. Molyneux on *Chrysanthemum*-growing. I think he has set a good example to us young men as to what can be done by perseverance.—D. R. D.

GOODWOOD.

PLEASANTLY situated on one of the southern fringes of the famous South Downs and within four miles of Chichester is Goodwood, the charming Sussex residence of His Grace the Duke of Richmond, K.G. Goodwood does not boast a very ancient history, only dating from the early part of the last century, when the estate which previously formed part of the Manor of East Lavant came by purchase into the possession of the first Duke of Richmond, who built the greater part of the present magnificent residence. The name is, however, not altogether unknown, as it has gained a widespread celebrity on account of its famous race-course and annual races, and horticulturally for its grand specimens of Cedars.

The house is a magnificent example of the Grecian style of architecture, the massive columns supporting the portico at the principal entrance being of a very imposing character. The walls are built with small flints collected for the purpose from the neighbouring downs, and a very pretty effect is produced thereby. This noble structure occupies a grand position commanding extensive views of the surrounding country, including the seacoast from Worthing to Portsmouth, with the Isle of Wight in the distance, and is surrounded by a remarkably well-wooded and beautifully undulated park of 2000 acres. The park slopes gently southward, and as the visitor enters it from one of the southern entrances, and follows the bold sweeping course of the long and capitably made drive, the scene before him presents one of the richest panoramas of sylvan beauty it is possible to behold. The magnificent specimens of Cedars of Lebanon and remarkable groves of *Quercus Ilex* rising terrace-like one above the other, a huge promontory of the Downs revealing its masses of chalk through the distant foliage, and the Pine-clad slopes stretching away to the verge of the horizon, recalled to our mind, as we gazed upon this scene, the lines of Milton, whose words faithfully portray its beauties as—

"A sylvan scene, and as the ranks ascend
Shade above shade, a woody theatre
Of stateliest view."

Nowhere, we are told on good authority, does the *Quercus Ilex* succeed so well as it does at Goodwood. Planted on the northern and eastern sides of the mansion, they form an excellent shelter to the latter as well as the gardens. There is a very large specimen of *Cedrus Libani* growing in the park, which has very few equals in size in the kingdom. This tree was planted in 1761, and has now attained a height of about 68 to 70 feet, and its principal branches measuring from 50 to 55 feet in length. This noble specimen was much larger in width, but time and heavy gales and snowstorms have dealt somewhat harshly with it and caused it to lose several of its large branches. Those who are interested in these fine specimens of Cedars of Lebanon will find a full page illustration of the one we have just described in that excellent and valuable work Veitch's "Manual of the Coniferae."

The principal front of the mansion opens almost immediately into the park. The ornamental grounds on this side are of very modest pretensions, being confined to a few beds within an ornamental iron fence. These beds are filled chiefly with sweet-scented flowers, such as *Heliotrope*, *Stocks*, *Mignonette*, and *Carnations*, intermixed with *Zonal Pelargoniums*, single *Petunias*, and *Salvia patens* in accordance with the wish of the Duchess. Hard by is a remarkably large and vigorous example of the Cork Oak (*Quercus Suber*) with its peculiar corrugated outer bark, and a number of other fine trees.

A very prettily designed conservatory in three divisions sweeps round in a graceful curve from the left of the principal front, and this is beautifully fitted inside and tastefully arranged with choice ornamental and flowering plants. As the family is only resident here in July and August, all the efforts of the gardeners are concentrated on the preparation of the best display during that time, and especially during the race week, when the guests amount to upwards of 200. Particularly conspicuous among the flowering plants in this structure were a large quantity of the beautiful blue and white varieties of *Campanula pyramidalis*. These are, indeed, most effective for conservatory decoration at the period we are

writing of and later on. The late Mr. Geo. Westland used to make a special feature of growing this *Campanula* for the early autumn decoration of the beautiful conservatory at Witley Court. *Bougainvillea spectabilis* was thriving and flowering splendidly in this cool structure. This beautiful climber is generally grown in too high a temperature, with the natural result—a paucity of flowers.

Situated at the back of the conservatory, and enclosed within a square hedge of Privet or Laurels, are the plant houses principally devoted to growing small foliage and flowering plants for table and house decoration. A couple of houses are more or less occupied with Orchids, many of which are very large specimens, and used a few years ago to be great objects of attraction at the leading shows at South Kensington and the Botanic, Regent's Park. Particularly noteworthy for size and healthiness were *Vandas insignis* and *cærulea*, *Aerides virens*, *Cypripedium Harrisianum*, *Dendrobium nobile*, *densiflorum*, *speciosum* and *Hilli*, *Cattleya labiata*, *Skinneri*, &c., with several species of *Oncidiums*, *Anguloas*, and *Lælias*. One house is devoted to the lovely and chaste Amazon Lily (*Eucharis amazonica*), the whole of the plants being conspicuous for vigour; and we may mention, by the way, that the drying-off process is not practised here, an evident proof that an active and continued growth is the most rational method of growing these useful plants.

From the plant houses we are conducted to the lawn, which is pronounced by competent judges to rank with the finest examples of its kind in England. It is indeed a beautiful lawn, unblemished by garish parterres or beds, and its quiet beauty is greatly enhanced by the noble trees and shrubs which so artistically fringe its sides that extend for upwards of a mile, and form a vista of such exquisite beauty as only Goodwood with its rich arborescent treasures can do.

Leaving this charming lawn to our left, we pass along greensward walks beneath a canopy of foliage of gigantic Oaks, Cedars, Chestnuts, and Limes, until we come to the hermitage, an immense hollow Jell surrounded by old ruins, in which are a number of caverns, subterranean passages, rookeries and rockeries, and other features of a wildly picturesque description. One peculiar and noteworthy feature of the caverns was the fact of the floors being paved with horses' teeth, and the roofs and sides of univalves or beautiful samples of shells. Within a stone's throw of this weird-looking spot is the flower garden and arboretum, which occupies a position unequalled for beauty of surroundings. It is surrounded on all sides, except the south, by immense trees of *Quercus Ilex*, *Cedrus atlantica*, Chestnuts and Limes; towering up to an immense height behind these were lofty examples of the Scotch Fir (*Pinus sylvestris*) and Lombardy Poplars, whilst to the front were masses of *Rhododendrons*, *Azaleas*, and other shrubs, thus forming an amphitheatre of rich verdant foliage, which in addition to its great beauty forms an excellent shelter. Some very striking specimens of Conifers were thriving remarkably well here, notably *Wellingtonia* (*Sequoia*) *gigantea*, *Cryptomeria japonica*, *Cedrus Deodara*, *Pinus insignis*, and several others. There is, too, a large and lofty specimen of the Tulip Tree (*Liriodendron*), which must be very pretty when in full blossom. The beds are of simple design and few in number, and these are mostly filled with herbaceous plants, Lilies, and single Dahlias. There is one bed of Zonal Pelargoniums, and these have remained in the bed without lifting or protecting for three years, a conclusive proof of the value of the shelter afforded by the trees just mentioned. On the south side is an old wall, against which is a rustic framework of wood with a walk underneath. The sides and roof of this rustic woodwork are covered with the Traveller's Joy (*Clematis Vitalba*), and other species, such as *Jackmanni*, &c., *Jasminums* in variety, and climbing Roses, which grow in happy confusion, and form a very pretty bower, and is altogether an excellent plan for turning an otherwise unsightly wall into a very pretty object. In front of this are two long herbaceous borders divided by a walk, and in these are such showy hardy plants as *Rudbeckia Newmani*, *Pentstemons*, *Antirrhinums*, *Delphiniums*, *Statice*, *Carnations*, and *Campanulas* in variety. Continuing our stroll through avenues and groves of trees, and other pleasant features of landscape beauty, we find ourselves back to the spot whence we started on our tour round the pleasure grounds. We have yet the fruit and vegetable gardens, as well as the forcing houses, to see, and to see these we have to go a considerable distance across the park, as the latter departments are a long way apart from the former.

The kitchen garden is of an extensive character—we forget the exact dimensions, and is surrounded by high walls built in the form of a parallelogram, and here, as in the pleasure grounds, the north and eastern sides are sheltered by the thick dense growth of the *Quercus Ilex*. Just inside the entrance gates is the spacious and comfortable-looking residence of the able gardener-in-chief, Mr. Rutland. The walls are covered with a capital and well-trained lot of fruit trees. Peaches do specially well here, as also do Nectarines. *Amsden June* is a great favourite variety of Peach here, and Lord Napier among the Nectarines. We saw the trees of the latter variety heavily laden with large and high-coloured fruit. Another wall is devoted to growing the best varieties of Pears, most of which were carrying heavy crops of fruit. The remaining walls were covered with Plums and Cherries. A few large standard Apple and Pear trees were dotted about here and there, with a miscellaneous collection of bush fruits and Strawberries.

Vegetables, as might be expected in the case of such a large establishment, are grown on a large scale here, hence immense quarters of the useful classes of Brassicas, Carrots, Parsnips, and Beet are grown. In order to keep up a supply of Shorthorn Carrots during the winter sowings are made on a south border in the end of July and beginning of August. The young plants make little roots by the end of the year, and are then fit for drawing for use. The whole of the crops were looking

in the best possible condition of health, notwithstanding the excessive drought. We omitted when describing the fruit trees to mention how freely the large Fig trees bear and ripen their fruit in the open air there. Owing to the dry weather the fruit is not so large, neither did it ripen so early in consequence this season.

The forcing department, which occupies an open position in the centre of the kitchen garden, consists of several vineries, Peach houses, Pine stoves, Melon and Cucumber houses, and pits.

Grape-growing is well understood and carried out, as the records of the various leading shows will testify. But few Grapes were hanging on the Vines at the time of our visit, as the produce of several houses are consumed during the race week. A portion of a house of Mrs. Pince remained, the bunches of which were very fine and beautifully coloured: The whole of the Vines were in splendid condition, both wood and foliage testifying by their robust and vigorous appearance that they are looked well after here. Mr. Rutland adopts a capital plan of securing early Grapes, and which is well worthy of record. In a three-quarter span-roof house there is a pit about 4 feet deep on each side of the path. Each of these pits are half filled with a capital compost, and in this young one-year-old Vines are planted about 18 inches or 2 feet apart. The second year the Vines are left the length of the roof, and are allowed to bear a crop of fruit. The remainder of the beds are filled with compost, and this secures a heavy third crop the following year. It is worked upon the same principle as is adopted in the case of pot Vines, with this exception, that the Vines will bear heavy crops for three successive seasons, whereas in the case of pot Vines it is useless to attempt growing a second crop. Young Vines are kept constantly growing on, and should any of the canes exhibit any tendency to weakness from overcropping, after the second year they are replaced by the young Vines just mentioned. After the fourth year the old Vines give way to new ones with a renewal of the compost. We omitted to mention that the house is in two divisions, which enables the Vines in one house to be renewed whilst the other is bearing. This plan is decidedly superior to growing Vines in pots for early forcing, as the returns are greater in proportion to the expenditure and labour involved. We may add that the plan has been carried out with great success here for many years past.

Pines are grown well and in quantity; especially noteworthy were some grand fruiting examples of Smooth Cayenne, Charlotte Rothschild, and the Queen. In the Melon houses were some remarkably handsome fruits of that capital variety, Dr. Hogg, in their last stage of ripening. This is a favourite variety with the family. Many readers will remember reading an account a year or so ago of a gigantic Melon raised at Goodwood from seed sent home by Major General Drury Lowe from Egypt, and exhibited by Mr. Rutland at South Kensington. Peaches early and late are grown well under glass, as also are Nectarines, these being represented by veteran trees of large proportions of those capital sorts, Royal George Peach and Elruge Nectarine. Having completed our tour through the houses we return by way of a large roserie leading up to our guide's house, which, by the way, is nearly covered on one side by a large plant of that beautiful climber, *Passiflora cærulea Newmani*. This variety, which originated not far from Goodwood, is a very superior form of *cærulea*, and deserves to be more generally grown than it is.

We completed our tour of inspection by visiting the fruit garden, which is situated at a still greater distance from the kitchen garden than the latter from the flower and pleasure grounds. Owing to the departments being situated so far apart the duty of superintending these is not an easy one. The fruit garden is situated about two miles away, and occupies the site of an ancient garden attached to the mouldering ruins of a once princely residence—Halmaker Castle, formerly the property of the Derby family, but for some years now belonging to the Duke of Richmond. But little now remains of the Castle, which occupies a commanding position, except a few of its immensely thick outer walls. There is a fine avenue of ancient Spanish Chestnuts with gnarly stems, indicative of the attainment of a hoary and venerable age. Growing up into vigorous bushes, in the floors of the ancient hall and chapel, are a number of Filberts in strange contrast with the revelry of the one and the sanctity of the other in centuries gone by. Another strange feature was the sight of seeing a crop of Potatoes growing at a high elevation on what had originally been the floor of a bedroom. The outer walls still remain up to the original level of the bedroom floor, to which level in the course of time the falling *débris* has accumulated. On this a soil has been formed by the decomposition of vegetable matter, enough, with a little addition in fact, to grow the Potatoes just mentioned. In the old gardens and a small orchard adjoining there is a good collection of the very best varieties of culinary and dessert Apples, chiefly standards. On the walls are trained good varieties of Pears and Peaches. Plums, especially Victorias, were so heavily laden with fruit that every branch had to be supported by a prop. The situation of the orchard is high and very much exposed, and the soil and subsoil very stony. Notwithstanding this Mr. Rutland states that the trees bear freely, produce fine fruit, which is always beautifully coloured; and, moreover, the trees do not exhibit that tendency to grossness of growth which is so characteristic of trees grown in low situations. Samples of Apples grown here have never failed in competition at the leading shows to secure first honours.

I need only add that my visit was rendered a most pleasant one by the hospitality of both Mr. and Mrs. Rutland.—T. W. S.

PRUNING DENDROBIUM NOBILE.

I BEG once more to trouble you with a few remarks about *Dendrobium nobile*. You will remember I said all the old growths were cut

away from the two plants I had at South Kensington on the following day after I brought them home. These two plants have now finished their growth for this season. Though one of the plants stood in a dry room in London for more than a week without any water, and in consequence lost most of its roots, it has made splendid growths; in fact, I think, rather better than they were last year. I hope next spring to get some fine flowers from these growths. As some Orchid growers are slow to believe that it is possible to make growth and flower them in one season, I should be glad if those who are still doubtful would try for themselves what they can do. If any of the Committee who saw the plants at South Kensington would care to see them now, I shall be pleased to show them to anyone who will take the trouble to come.—H. C. PRINSEP.

SIR JOSEPH DALTON HOOKER.

LAST week we announced that Sir J. D. Hooker had resigned the directorship of the Royal Gardens, Kew, and as the time is an opportune one we now present our readers with a portrait of this gentleman, accompanied by a review of his career, which proves how well he deserves the world-wide fame he has won as an accomplished botanist.

Sir J. D. Hooker is the son of Sir William Jackson Hooker, and was born at Halesworth, Suffolk, June 30th, 1817, and is therefore now sixty-eight years of age, happily still in the enjoyment of good health and apparently none the worse for the exposure and fatigue he endured in his early travels. He was educated at Glasgow, and obtained the degree of M.D. from the university of that city in 1839. Very shortly afterwards Dr. Hooker commenced his active career as assistant surgeon in the Antarctic Expedition under the command of Sir James Clark Ross, and during three years' travels in the southern seas accumulated vast stores of knowledge relative to the floras of New Zealand, Van Dieman's Land, and other islands. The information thus acquired was embodied in "The Botany of the Antarctic Voyage," published in six volumes, the first in 1847 and the last in 1860, which forms a most valuable work of reference upon all points connected with the interesting vegetation of those regions. After performing the duties of botanist to the Geological Survey of Great Britain in 1846, Dr. Hooker in the following year set out on his memorable journey to the Himalayas, where he explored the Sikkim district, experienced many dangerous adventures, and greatly enriched our knowledge of the numerous charming Rhododendrons which are found in that country. A superb work, "The Rhododendrons of the Sikkim Himalaya," published in 1849 to 1851, contains a number of beautifully executed sketches of these handsome plants, which drew much attention to them, and a large proportion of the best species have been since introduced at various times. The collection at Kew now comprises most of the leading forms, and visitors to the temperate house in the pleasure grounds have often had occasion to admire the grand flowers of *R. Aucklandi*, *R. Edgeworthi*, *R. argenteum*, and others of a similar character.

In 1841 Sir William Jackson Hooker was appointed successor to Mr. W. T. Aiton as director of the Royal Gardens, Kew, and Dr. Hooker subsequent to his return from India—namely, in 1855—was appointed assistant-director in the same establishment. A botanical tour in Syria was undertaken in 1860, the principal subject of investigation being the native Oaks, and a paper embodying the results was read before the Linnean Society soon after his return. The death of Sir W. J. Hooker in 1865 led to the appointment of his son as successor, and he has most ably carried on the work of improvement commenced by his father, having placed Kew Gardens in the foremost rank as a scientific institution.

Much attention was attracted to the Darwinian views upon "the origin of species" and cognate matters by the eloquent opening address delivered by Dr. Hooker before the "British Association" at Norwich in 1868, and of which we gave a full notice in our issue of September 10th of that year (page 189). In 1871 Dr. Hooker, accompanied by Mr. John Ball, spent some time in botanically exploring Morocco, where a large number of plants was obtained and imported to this country. The most recent expedition was that to the United States in 1877, where he spent three months with Dr. Asa Gray, whom he assisted in the botany of the United States for the Government Surveys.

Numerous honours have most worthily fallen to Sir J. D. Hooker. At the Oxford Commemoration in 1866 the honorary degree of D.C.L. was conferred upon him, and in the same year he received the degree of LL.D. from the University of Cambridge. In 1869 he was appointed Civil Companion of the Order of the Bath. The Royal Society elected him President in 1873; this post he resigned in 1878, and in the same year the University of Dublin accorded him the degree of LL.D. In 1877 he was created Knight Commander of the Star of India for the services rendered to the Indian Government. The Society of Arts in 1883 awarded Sir Joseph Hooker the Albert Medal for "the services rendered to the arts, manufactures, and commerce by promoting an accurate knowledge of the floras and economic vegetable products of the Colonies and Dependencies of the Empire." The Royal Geographical Society also in the same year awarded him their founder's medal "for his eminent services to scientific geography, extending through a long series of years and over a large portion of the globe, while engaged in voyages in the antarctic and Australian seas, and journeys to India and Himalaya, in Morocco and in the United States of America, and more especially for his long-continued researches in botanical geography, which have thrown light on the form of the land in prehistoric times, and the causes of the present distribution of the various forms of vegetable life on the earth."

Several of Sir J. D. Hooker's works have been noticed in the course of the preceding remarks, but the others must not be omitted, as they rank amongst the most important botanical works published in this country.

The "Genera Plantarum," which was commenced in 1862, and which, with the aid of Mr. Bentham, was brought to a conclusion a year or two since, is an extraordinary production, necessitating enormous labour and care. The *Himalayan Journals*, two vols., published in 1854, contain interesting descriptions of travels in that region, and while of scientific value also possess much popular interest, being written in a free and agreeable style. The "Student's Flora of the British Islands" first appeared in 1871, and has now become the accepted handbook for amateur botanists who study our native plants. Another very popular work is the "Primer of Botany," which has assisted some thousands in mastering the elements of modern botanical science. The "Handbook of the New Zealand Flora" and the "Flora Novæ Zealandiæ (Cryptogamia)" are highly important and exhaustive works which have added greatly to the reputation of the author. In addition to these a "Journal of a Tour in Morocco and the Great Atlas" was published, together with several papers in the Linnean Society's "Transactions," and the able lecture on "Insular Floras," which was delivered before the British Association at Nottingham. The editorship of the "Botanical Magazine" has also been entrusted to Sir J. D. Hooker for some years past, and a valuable series of plates has been published during that time, including representations of many rare and beautiful plants which have flowered at Kew.

In 1874 the "Flora of British India" was commenced, and up to the present only three volumes have been issued, as owing to Sir Joseph's numerous official duties he has not hitherto been able to devote to it the time needed by such an undertaking. Now he intends applying the leisure which his release from office will afford to the completion of this important work. It might have been supposed that after such an active career, and with such a record, Sir Joseph Hooker would be content to rest, but with him, as with all true lovers of science, work must have been his pleasure, or he could never have accomplished so much.

In the great establishment, which has been under the directorship of Sir J. D. Hooker for the past twenty years, will also be found ample testimonies to his ability and devotedness to the advancement of botanical science on a broad foundation. Of special importance are the wonderful museums containing the economic products of the vegetable kingdom, the nucleus of which collection was contributed by Sir W. J. Hooker in 1847. Since then they have been enormously increased by the efforts of the retiring director with the help of innumerable friends and correspondents in all parts of the world, until these museums have become vast storehouses representing the uses of plants as food, medicine, clothing, ornament, and for many other purposes. The importance of this department is widely recognised, and additions are constantly being made, the transference in 1878 of the India Museum collection to Kew Museum increasing the latter by 4000 specimens, which have been carefully arranged with the others in their natural orders. As an example of how greatly the collection has been extended, it may be remarked that in 1847 one room sufficed to contain the whole of it, now three large buildings are devoted to it.

Another department which owes much to the Hookers, both father and son, is the Herbarium, which as a general collection of dried plants is unrivalled in the world. It contains large numbers of specimens collected by Sir Joseph Hooker himself, besides contributions from all the principal travellers and botanists who have wandered in search of plants in both tropical and temperate climates. It has become the centre of botanical knowledge not only of Britain but of Europe, and is resorted to by all the most distinguished naturalists of the day. This alone would have rendered Kew famed.

Many improvements have been effected during Sir Joseph's directorship and through his influence, which can only be briefly noted, but prominence must be given to the wonderful gallery of floral paintings presented to the gardens by Miss Marianne North, a monument of industry and skill which could not have found a more appropriate home than at Kew. The Jodrell Laboratory for botanical research is another institution of considerable scientific importance, in which much valuable work has already been performed. The surprising collections of living plants have been extended, better housed, and better cultivated, while the correspondence with colonial botanic gardens has been enormously increased with advantage to both; large quantities of Cinchonas, Gutta-percha-yielding plants, and others of economic importance having been reared at Kew and exported thence to various parts of the British empire, where valuable plantations have been formed.

These are only a few examples of the work that has been done, but they will suffice to indicate how well Sir Joseph Hooker has earned his retirement.

HARDY PLANTS AT MALPAS.

IT was getting late in June when I had a few hours' enjoyment amongst the alpine and other hardy flowers at Edge Hall, where the generous owner, Rev. C. Wolley Dod, indulges his enthusiasm for the plants he loves so well. No wonder the place had such a wealth of beauty when we understand what pains are taken to develop the culture of hardy flowers, for after seeing most of the best collections in the country I confess I never saw anything equal to the wealth of interest there was at Edge at the time of my visit. To the lover of hardy flowers the collection is essentially an educational one, because Mr. Wolley Dod subjects the merits of the majority of his plants to a crucial test. They are cultivated with zeal, at the same time keen discrimination is exercised, so that while you see the choicest gems in the highest state of cultivation, weedy plants are extremely scarce; in fact, there are few plants encouraged which may not well be included in all collections. We often

observe Mr. Wolley Dod complaining about the climatic conditions of his immediate surroundings, but regardless of these, as well as the uncanny nature of the soil, he has with much patience and labour achieved a success which is rare.

Dotted about are some charming pieces of rockwork, happily accommodating the choicest rarities in unusual health, and mostly in good masses or colonies, so that every ledge or nook is replete with interest, the mere enumeration of which would crowd out too much other useful matter from the Journal. Special attention is given to certain series of plants; for instance, *Liliums*, *Aquilegias*, Alpine *Dianthus*es, and Cam-

variety of colour and form of flower, of course consistent with the vagaries of *Columbines*. Short, medium, and long-spurred, European and New World forms have united to produce a most interesting and beautiful series of intermediates. The species *cœrulea*, *vulgaris*, *chrysanthus*, *californicus*, *canadensis*, and others have all been utilised, and the result is a progeny alike for its differentiations and extreme interest, while for the hardy flower garden we can scarcely recommend anything so heartily. We noticed the true, but scarce, *A. Skinneri* and *A. canadensis* in very strong condition. Mr. Dod thinks this is the chief factor in producing the shades of red and orange predominating in many of his seedlings.



Fig. 75.—SIR JOSEPH DALTON HOOKER, K.C.S.I., F.R.S.

panulas, to say nothing of the most charming effect produced by the Poppies. Rarely have I seen a more striking example of flower gardening than a good-sized piece of rockwork pretty thickly dotted with most floriferous patches of the different varieties of *Papaver nudicaule*, amongst which goodly numbers of *P. umbrosum* were distributed, with its deep crimson flowers in association with the yellow, which, and shades of orange-scarlet of *nudicaule*, presented a unique picture.

AQUILEGIAS.

Turning, then, to the *Columbines*, we have a striking example of the value of these flowers of all gardens, provided they are liberally treated and rigidly selected. Every season the best flowers are selected and crossed if considered necessary for seed-saving, as a fresh batch is raised every season. The young plants are put in beds of rich soil early in the season, and by the following spring they are strong enough to bloom profusely. Although they were just past their best at the time of my visit, yet there was abundance of evidence of the high pitch reached, there being every

CAMPANULAS.

Amongst the *Campanulas* was a most instructive series of forms of *C. rotundifolia*, revealing much variation both as regards size of flowers, habit, and times of flowering. One form was especially fine, producing very large bells; indeed, apart from the others close by it, we might be pardoned for regarding it as some other species. Of course this series included some other so-called distinct species from southern and middle Europe, if my memory serves me well, but there was essentially no distinction between them and our wild *C. rotundifolia*, when studied in connection with what are evidently intermediates. There were also grand masses of *C. abietina* upon a small rockery in full bloom. To me there was a mystery about this, as I failed to get it to bloom satisfactorily, and have noticed it in at least three different collections flowering only very indifferently; but here the tufts appeared to be all flower-stems. The bunches of stems were at least a foot through, well furnished with the large light blue bells, and is certainly one of the best species for the rockery. I believe it was distributed by Gusmus of Austria. The rare

little *C. Waldsteiniana* was well represented, the greyish tufts being crowded with its charming little erect flowers; also *muralis* (*Portenschlagiana*), numerous forms of *garganica*, *pulla*, *pusilla*, &c.

LILIUMS.

The Liliiums were also a most beautiful feature and remarkably well grown, although but few of them were in bloom so early in the year, yet most of them gave excellent promise of a rich display. The Caucasian *L. Szovitzianum* was well in flower in different parts of the garden, some with very large heads carrying more flowers than I have previously seen under cultivation, but this is due to the very liberal treatment it receives, for its fare is sumptuous. A good supply of rotten manure with loam and a good dusting of bone dust is given at the time of planting, which evidently agrees with this Lily. *L. giganteum* is splendidly grown. There were four specimens with large flower-stems, and it is likely the largest would be 8 feet or more high and well furnished. It is a noble-looking plant even when not in flower, and is certainly quite hardy. It suffers most in early spring, when its tender foliage is frequently injured by frost; slight protection at that season meets its wants and it richly merits such attention. *L. Martagon album* and *dalmaticum* were showing well, also *Humboldtii*, the forms of *pardalinum*, and many others. The occupants of the Lily house looked exceedingly healthy and strong, and no doubt later in the season were well worth seeing. Some clumps of Christmas Roses in this house were well furnished, very large and healthy foliage. The masses of the Californian Lilies, which I took to be *pardalinum*, and perhaps some of its numerous forms, as well as superhum from the Eastern States were represented in strong masses in the bog bed, which is evidently the best place to grow, although as far as I remember this bed was not particularly wet and boggy. Perhaps it would be better to call it a peat bed maintained in a pretty moist condition.

ALPINE PINKS.

A word as to the charming series of Alpine Pinks represented in gardens and nurseries under the names of *D. alpinus*, *neglectus*, and *glacialis*. They were planted side by side, seedlings raised and flowered together, and certainly there was a striking resemblance between what are generally understood to be distinct species. The most striking difference at any time would appear to be in the foliage and the floriferousness; for instance, the foliage of *alpinus* is different to what is known as *glacialis* and *neglectus*, while both these are much more tufted in growth and free-flowering than *alpinus*; but such a series of seedlings as were in flower at Edge is certainly very convincing that at most only one species can be recognised, and that is likely to be *D. alpinus*. According to Mr. Wolley Dod's experience, these charming little Pinks are best raised from seed each season, as they are so liable to go off after flowering; but I must say that in this particular I have found *glacialis* and *neglectus* greater sinners than *alpinus*, which under favourable conditions grows freely into a large tuft and may be pretty easily increased by means of cuttings, which root freely in a cold frame.

ALPINE PLANTS.

The notes made of other meritorious alpinus upon the numerous rockeries are copious, but it will only be necessary to mention a few of the best for general cultivation—kinds, in fact, which every lover of alpinus may well covet. *Oethionema grandiflora* was crowded with flowers and formed a most conspicuous feature. The rare *Arnica montana* was quite at home, although rather a fastidious subject to establish. *Coronilla iberica* formed broad sheets of elegant foliage and golden yellow flowers. *Lychnis Lagasce* is a bright little species crowded with rosy pink flowers. A large number of the choicest encrusted *Saxifragas* are accommodated on small rockeries at the ends of the greenhouses, where there are some unusually fine examples of *S. longifolia*. *S. Macnabiana* was very fine upon another rockery; this is a beautiful variety, the flowers being crowded and copiously spotted it should find a home in all collections. The rare *Geranium argenteum* forms good tufts of its silky white foliage and blossoms well; it is only at Mr. Whitehead's of Bickley that I have seen it equal to those at Edge. The yellow *Dryas Drummondii* and the Arctic Bramble (*Rubus arcticus*) are quite at home, the former especially forming large masses. *Veronica pinguifolia* crowded with white flowers and glaucous foliage, convinced one that it is one of the best alpine shrubs we possess. The Himalayan *Cyananthus lobatus* was charming. The fleshy rootstocks are happy under a ledge, from which the pretty shoots are sent out bearing the blue funnel-shaped flowers; this alpine is much too seldom seen. *Onosma taurica*, *Linaria anticaria*, *Erodium Reichardi*, and a host of others were clad in their best dress, and constituted really a feast for those inclined to fancy them.

CHOICE HARDY PLANTS.

Other plants worthy of mention in the borders at the foot of and upon the walls are the "Horned Poppy" of California, *Romneya Coulteri*, which was in excellent health, showing flowers, and later in the year I saw flowers from the same plant exhibited at a local show; this is a plant well worthy much trouble to cultivate, although much is not required. *Primula sikkimensis* major was most conspicuous at the foot of a wall, with tall stout stems supporting very large umbels of primrose yellow flowers, so much superior to what one is accustomed to see that the form well deserves its majority. Harper Crewe's *Doronicum* is now well known; it is an invaluable plant for borders, especially the freely divided and replanted. *Armeria cephalotes* in several shades were very conspicuous. *Rosa rugosa* and its white variety are very showy shrubs both for rockeries and borders. *Erigeron aurantiacum* was splendid in a small bed, the flowers being very

large and highly coloured, it is really a good plant. The forms of *Lychnis viscaria*, both double and single, were effective; while a very different plant was found in *Ligularia macrophylla*, with massive glaucous foliage and tall panicles of yellow flowers, an unique plant. The Blue Poppy, *Meconopsis Wallichii*, was interesting but not over-attractive, nevertheless desirable. The Madeira Orchis *foliosa* is quite at home in the peat bed, while *Cypripedium calceolus*, *candidum*, and *spectabilis* were attractive at the foot of a wall; other species were, I think, past. *Ranunculus bullatus* fl.-pl. is an excellent double Crowsfoot, dwarf in habit, with large yellow flowers. *Allium neapolitanum*, *Pentstemon glaber*, *Cheiranthus Marshallii*, *Hieracium villosum*, *Chrysobactron Hookeri*, were vigorous and most effective, while *Asphodelus ramosus* as here represented, must be regarded as a very effective and desirable plant.

I am reminded in penning these remarks that a short contribution was published in the Journal a little over three years since upon the same collection, and as I had not visited the place between the time when those notes were made and last June, I was enabled to recognise what a marked improvement has been made in every way. Mr. Wolley Dod is indefatigable, and where three years since there was a good-sized kitchen garden I think it was only represented by a solitary Cauliflower, but there is ground beyond for vegetables, and long may the collection of hardy flowers be a source of enjoyment to its present owner. This rambling sketch I know is most inadequate, and conveys but a poor idea of its richness.—J. T. R.

THE LIVERPOOL SHOW.

NOVEMBER 24TH AND 25TH.

THE above Show was held in St. George's Hall, and proved equal in merit to those previously held by the Society. There was a slight falling off in the number and quality of the stove and greenhouse plants as compared with the exhibits of the past few years, but this is undoubtedly due to Mr. W. Mease having discontinued exhibiting. It would, however, perhaps be as well if Crotons and such tender stove plants were not exhibited at this season of the year, but provision made in the schedule for groups of *Chrysanthemums* instead. A little more provision for Palms would also be an advantage, and if arranged down the centre of the tables running the whole length of the hall the appearance of the exhibition would be materially improved, for the Exhibition just held had a flat appearance and was less beautiful in this respect than some previously held by this well-managed Society. The Show was a great success as far as the exhibits were concerned, but this cannot be said of the finances, as the first day was most unfavourable for visitors, being dark and very wet. The second was very little better in this respect, and, unfortunately, the Liverpool elections were held on this day. The anticipations of some that this would prove an advantage to the Society were not realised, for the opposite was the result.

CHRYSANTHEMUMS.

Cut Blooms.—These were more numerous than we have before seen them at this Society's Show, for the prizes offered were well contested in every class. The Japanese blooms throughout were remarkably fine, but the incurved were scarcely equal to those generally staged by the Liverpool growers. This may be accounted for by Messrs. Lindsay, Mease, and other leading exhibitors showing at Hull and other places this year. The blooms on the whole, however, were very creditable to the exhibitors. In the class for eighteen incurved and the same number of Japanese, distinct varieties, four collections were staged. The prizewinners in the order named were Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Woolton; Mr. F. Roberts, gardener to W. D. Holt, Esq., Landsfield Park, West Derby; and Mr. T. Leadbetter, gardener to R. N. Dale, Esq., Bromborough Hall. The blooms of Japanese in the first and second collections were very close, but Mr. Jellico took the lead with his incurved blooms, which were larger in size than those of Mr. Roberts, while in freshness and colour they were about equal; Mr. Jellico, however, well won the silver cup given by Messrs. J. Williams & Co., 62, Mount Pleasant. The best of the incurved blooms were Empress of India, Golden Empress, Queen of England, John Salter, Lord Alcester, Jeanne d'Arc, Refulgence, Mr. Bunn, White Beverley, Lord Wolseley, Emily Dale, Princess of Wales, Barbara, Mrs. Heale, Jardin des Plantes, Cherub, Sir Stafford Carey, and Princess Beatrice; Japanese—Soliel Levant, Japonaise, Belle Paule, Comte de Germiny, Sarnia, Golden Dragon, Fair Maid of Guernsey, Mdle. Lacroix, Meg Merilees, F. A. Davies, Boule d'Or, Criterion, Elaine, Balmoreau, Madame C. Audiguer, Peter the Great, and Mons. J. Laing.

For twenty-four incurved, Mr. J. Jellico was again first with a capital stand of blooms, and noticeable amongst them were Empress of India, John Salter, Lord Alcester (very fine), Lord Wolseley, Golden Empress, Refulgence, Princess of Teck, Mrs. Heale, and Jardin des Plantes. Mr. Leadbetter was a good second, having very fine flowers of Lady Hardinge, Alfred Salter, and Princess of Wales. Only two collections were staged in this class. Four competitors entered the class for eighteen blooms, and Mr. J. Martin, gardener to Mrs. W. G. Bateson, was the successful exhibitor. This collection contained remarkably good blooms of Jeanne d'Arc, Queen of England, and Alfred Salter. Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, was a good second, the bloom of Lord Alcester and Princess Beatrice in this stand being especially fine. Mr. E. Broadeys, gardener to W. H. Jones, Esq., The Grange, Hooton, was placed third. For twelve blooms four collections were again staged, and the whole of the exhibits were praiseworthy. Mr. J. Wilson, gardener to J. E. Reynolds, Esq., Landsfield Park, West Derby, gained the premier position, and staged grand blooms of Lord Alcester, Empress of India and Golden Empress, both very large; Mrs. W. Shipman and John Salter were also very good. Messrs. T. Leadbetter and A. R. Cox were second and third respectively. In the corresponding class for twelve blooms the competition was keen, and several collections were staged for the three prizes offered. Mr. C. Osborne, gardener to W. S. Taylor, Esq., Ivy House, Allerton, took the lead, followed by Mr. F. Roberts with smaller but slightly fresher flowers. Mr. C. Gittins, gardener to W. W. Brocklebank,

Esq., Bromborough, third with rather flat blooms. The principal winner for six blooms was Mr. W. Riding, gardener to W. W. Sandbrook, Esq.

For twenty-four Japanese varieties, distinct, Mr. A. R. Cox was deservedly placed first with a magnificent collection of bright, fresh, large blooms. Mr. J. Martin was placed second and Mr. F. Roberts third with rather small but very fresh blooms. The premier collection comprised the following:—Belle Paule, Curiosity, Red Gauntlet, Peter the Great, Japonaise, Fair Maid of Guernsey, Madame C. Audiguier, Mons. Astorg, Balmoreau, Duchess of Albany, Daimio, Boule d'Or, Baron de Prailly, Criterion, F. A. Davies, Elaine, Comte de Germiny, Mons. Tarin, Chang, Mons. Burnet, Golden Dragon, Fernand Feral, and Meg Merrilees. Four collections were staged in this class. For eighteen blooms five competitors staged, and the whole were highly commendable, as the various collections scarcely contained a poor flower. Mr. J. Wilson took the lead and staged wonderful flowers of Criterion, Golden Dragon, F. A. Davies, Mons. J. Laing, Baron de Prailly, and Boule d'Or. Mr. J. Jellico was placed second, and had very fine Meg Merrilees and Triomphe de la Rue des Châlets, the remaining blooms being rather smaller than the first-prize collection. For twelve blooms three boxes only were staged, the prizetakers being in the order named—Mr. C. Osborne, Mr. E. Broadeys, and Mr. E. Curson, gardener to E. Meycock, Esq., Egerton Park, Rock Ferry.

The prizewinners for six reflexed blooms were Messrs. W. Wilson and J. Jellico, the former staging grand flowers of King of the Crimson, Lilac and Golden Christine, Dr. Sharp, Mrs. Forsyth, and Chevalier Domage. Four collections were staged for the prizes offered for six Anemone-flowered varieties. Mr. W. Wilson was again first with fine examples of Bijou, Acquisition, Gluck, Lady Margaret, and Fleur de Marie; Mr. A. R. Cox second, and Mr. C. Watson, gardener to F. Tobin, Esq., Mersey Road, Aigburth, third. The remaining two small classes provided in the schedule were well filled but call for no special remark.

Chrysanthemums in Pots.—These were as numerous as usual, but the closely trained specimens that are generally a feature were not on the whole quite equal to the usual excellent condition in which these plants are shown. The classes provided for bushes or untrained specimens were certainly better than any we have seen in St. George's Hall before, but there is still room for great improvement. For six large-flowering trained plants, Mr. J. Hughes, gardener to H. McIver, Esq., Allerton, was well to the fore with good plants, well flowered, of Jardin des Plantes, George Glenny, Mrs. Shipman, Empress of India, Lady Hardinge, and John Salter. Mr. C. Finnigan, Palace Gardens, New Brighton, second with well-grown specimens, but considerably smaller blooms. Mr. W. Bustard, gardener to J. Lewis, Esq., Aigburth, was third, four collections being staged. For three plants Mr. T. Jones, gardener to W. C. Clarke, Esq., was first; Mr. J. Harrison, gardener to G. Pilkington, Esq., Woolton, second; and Mr. C. Finnigan third. For one plant Mr. J. Hughes took the lead, followed by Messrs. T. Jones and C. Finnigan. For six Pompons trained Mr. C. Finnigan took the lead with well-grown, profusely flowered plants of Lilac, White, and Golden Cedo Nulli, Mr. Astie, Mrs. Wheeler, and St. Michael. Mr. J. Hughes was placed second with rather smaller plants, which were remarkably fresh, but scarcely in full bloom, Mr. W. Bustard the remaining award. With three plants the successful competitors were Messrs. C. Finnigan, T. Blackmore, gardener to Major Pemberton, Fairfield, and J. Hughes, all staging creditable plants. Mr. Hughes took the lead with one plant, followed by Messrs. C. Finnigan and T. Blackmore. Eight exhibitors staged for the prizes offered in this class. Mr. E. Green, gardener to J. Woolright, Esq., Mossley Hill, was first in the class for one standard as well as in the corresponding class for one pyramid.

PLANTS.

Stove and Greenhouse Plants.—Mr. A. R. Cox won premier honours for six plants with good large plants of *Latania borbonica*, *Dicksonia antarctica*, and *Croton Queen Victoria* well coloured; *Ixora coccinea*, a good plant fairly well flowered; *Erica hyemalis*, 5 feet through, very fine; and a large plant of *Epacris* not named. Mr. J. Jellico was placed second with a grand well-flowered example of *Rhododendron Princess Royal*, *Cycas revoluta*, *Croton Hawkeri*, a good plant, but the whole of the foliage drooping, *Centropogon Lucyanus* fairly flowered, a good pot of *Calanthe Veitchii*, and a well-grown plant of *Latania borbonica*. Mr. A. Crosbie, gardener to B. Hall, Esq., Dudlow House, was awarded the remaining prize. For four plants the same competitor was again placed first, having a grand plant of *Cypripedium insigne* with over twenty flowers fully expanded, a large plant of *Ixora Dixiana* in good condition for this season of the year, and *Croton Disraeli* very good. Mr. R. Cubbon, gardener to Mrs. Alison Johnson, Woolton, was second, having good *Eucharis amazonica*, carrying nearly twenty spikes, and two good *Ocotons Weismanni* and *C. interruptus*. Mr. A. Crosbie was placed third, having also a good *Eucharis* and *Cocos Weddelliana*.

Table Plants.—Good numbers of these were staged, and no less than twelve competitors arranged plants for the three prizes given for six plants. Those exhibited were of small size and in admirable condition, for there was not a faulty or an unsuitable plant amongst the exhibits. The plants were arranged down one of the central tables, nearly the whole length of the hall, in one row down the centre. Mr. J. Agnew, gardener to Mrs. Watts, was deservedly placed first with beautiful little plants of *Dracena gracilis*, *D. Sydneyi*, *Pandanus Veitchii*, *Cocos Weddelliana*, *Croton interruptus aureus*, and *C. Rodeckianus*. Mr. T. Fleetwood, gardener to T. H. Harrison, Esq., Holmfild, was a good second, and Mr. J. Hurst, gardener to W. B. Bowering, Esq., third.

Ferns.—The classes devoted to Ferns were well filled, and the plants staged by the various exhibitors were freely developed specimens. For four stove and greenhouse kinds Mr. R. Cubbon was deservedly placed first with grand plants, about 5 or 6 feet in diameter, of *Microlepia hirta cristata*, *Dicksonia antarctica*, *Davallia Mooreana*, and *Adiantum trapeziforme*. Mr. T. Gowan, gardener to J. Cunningham, Esq., was second with *Adiantum farleyense*, *A. Veitchii* very fine, *Gleichenia spelunca*, and *Gymnogramma argyrophyllum*. Mr. A. R. Cox was third, and his collection of plants was also very good. For one Tree Fern Mr. R. Cubbon was again first with a grand example of *Dicksonia antarctica*; second Mr. J. Lowndes, gardener to S. S. Parker, Esq., Aigburth, who staged the same variety.

Palms and Cycads.—Two classes only were provided for these plants, and in the class for three Mr. R. Cubbon was well to the front with *Cycas*

revoluta, *Areca lutescens*, and *Seaforthia elegans*, all being clean, well-grown, fair-sized specimens. Mr. J. Vaughan, gardener to R. C. Callart, Esq., The Hollies, Aigburth, was placed second, and Mr. C. Finnigan third. For one plant Mr. R. Cubbon was the only exhibitor, and was awarded the first prize offered.

Primulas.—There were not numerous, but were well grown and very creditable to the exhibitors. For six plants, Mr. T. Foster, gardener to J. Braucker, Esq., Wavertree, was first, while Mr. Agnew was placed second with larger but not such well-bloomed plants as those in the leading collection. Mr. E. Green was the remaining prizetaker.

Mignonette and Epiphyllums.—The first was not staged in large numbers but the exhibits were good. For one standard Mr. W. Wilson was placed first; second, Mr. J. Lewis; and third, Mr. J. Hurst. *Epiphyllums* were very good and well bloomed, but their appearance was destroyed by the manner of staking adopted. Some of the plants, which were standards, had nearly twenty stakes in them to support their heads. Nothing could have looked more unsightly than these down the centre of the fruit tables, for the whole of the stakes were seen.

Pelargoniums, Cyclamens, and Poinsettias.—Only one exhibitor staged in this class for six plants. The plants were well grown and profusely flowered, considering the season of the year. Mr. W. Wilson was awarded the first prize. Only one exhibitor staged in the class for *Cyclamens*, which need no further comment. *Poinsettias* were very good, and Mr. A. Crosbie took the lead for six plants possessing large well-developed heads, with foliage down to the base.

Orchids.—There was a slight falling off in the number of these plants exhibited, which no doubt is due to Mr. W. Mease retiring from the field as an exhibitor and the dispersion of the collection belonging to the late T. S. Walker, Esq. The prizes offered, however, were well contested, but the exhibits were not so numerous as previously. For three plants Mr. T. North, gardener to E. Harvey, Esq., Aigburth, took the lead with a fine example of *Odontoglossum Rossi majus* with twenty or more flowers, a large pan of *Cypripedium Spicerianum*, and *Odontoglossum grande* with three fine spikes. Mr. W. Moss, gardener to W. Holland, Esq., Aigburth, was a good second with *Odontoglossum Alexandrae* with three spikes, *Burlingtonia fragrans*, and *Cymbidium Mastersiana*. Mr. E. Green was a very good third. For one plant Mr. T. Worth was again first with *Laelia elegans picta*; Mr. Moss followed with *Cypripedium Sedeni* with about ten spikes, and Mr. A. R. Cox third with *Oncidium varicosum*. Seven or eight competitors staged for the prizes offered in this class. For one *Cypripedium* Mr. Moss was placed first with a large pan of *C. insigne* with about thirty flowers, Mr. A. R. Cox, second with a good plant of the same variety, and Mr. C. Coppel, gardener to Stanley Rogerson, Esq., St. Michael's Hamlet, third. For two *Calanthes* Mr. W. Moss was first, and the same exhibitor was also successful for one plant.

Bouquets.—Those shown were on the whole light, shapely, and composed of very choice flowers. For one (open class) Miss M. A. Cooke, Southport, was first, and Mr. G. Downes, Lodge Lane, second. In the corresponding class for one Mr. A. Crosbie was followed by Mr. Watts, and Mr. J. Fairhurst, gardener to P. H. Blessig, Esq., Allerton. For one epergne or vase Mr. J. Lewis was first and Mr. C. Coppel second.

FRUIT.

On the whole the display of fruit was not only more numerous than on previous occasions, but the quality throughout was superior. The exhibition of fruit alone was considered by those capable of judging to have been the finest show of fruit that has been brought together this autumn. For twelve distinct dishes Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, gained the premier position with fair Muscat of Alexandria Grapes, Alicante, Gros Colman, good in bunch, berry, and colour, and a very fine example of Mrs. Pearson Grape, a small Hero of Lockinge Melon. Pears Beurré Clairgeau, Marie Louise, and Duchesse d'Angoulême were large. Apples King of the Pippins, Winter Pearmain, and Queen Charlotte were also large and well coloured. Mr. J. Bennett, gardener to Hon. C. H. Wynne, North Wales, was second with good Alicante and Gros Colman Grapes. The bunches staged of Foster's Seedling and Syrian were small in the berry; Cox's Pomona Apple and Urbaniste Pears were very good. Mr. W. Hannagan, gardener to R. C. Naylor, Esq., Hooton Hall, Cheshire, was third, and staged good Alicante and Gros Colman Grapes. For six dishes Mr. Goodacre was again first with very fine examples of Muscat of Alexandria and Gros Colman Grapes, the latter being well coloured with very large berries, Beurré Diel and Marie Louise Pears, a fine dish of Blenheim Pippin Apples, and a small Melon. Mr. Hannagan was a close second, and staged remarkably fine fruits of Marie Louise and Doyenné du Comice Pears. Mr. J. Hurst gained the remaining prize. Eight collections were staged in this class.

Grapes.—For two bunches of black Grapes (Muscat flavoured) five exhibitors competed for the prizes. Mr. J. Hollingsworth, gardener to F. Campbell, Esq., Woodseat, gained the premier position with good bunches of Mrs. Pince, perfect in colour and large in both bunch and berry. Mr. J. Barker, gardener to Alderman Raynes, Rock Ferry, was placed second with Madresfield Court, perfect in colour and size of berry, but the bunches were rather small. Mr. Goodacre secured the remaining award with bunches a little less, but in other respects equally good. In the corresponding class for two bunches (without Muscat flavour) no less than sixteen exhibitors staged, and there was not a faulty exhibit in the whole. Mr. A. Collins, gardener to Samuel Smith, Esq., Prince's Park, gained the premier award with very large well-coloured bunches of Gros Guillaume. Mr. J. Hollingsworth was placed second with smaller but perfectly shaped well-coloured examples of the same variety; Mr. Goodacre third with Gros Colman, the two finest bunches of this variety in the Exhibition, the bunches being large, the colour good, and the berries of great size. Mr. T. Bradshaw, gardener to W. Watson, Esq., Spital, was awarded an extra prize for two large perfectly finished bunches of Alicante. For two bunches of Black Hamburgs there were only three competitors, but the fruit was in good condition, considering the season of the year, for this variety. Messrs. Goodacre, J. Barker, and T. Fleetwood were the prizetakers.

For two bunches of Muscat of Alexandria Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, was well ahead with the two finest bunches of this variety in the Show, the bunches in question being large

in size with large even berries perfectly coloured. Mr. J. Bounds, gardener to A. L. Jones, Esq., Aigburth, and Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, were placed second and third in the order named. There were six exhibitors of two bunches of any other variety of white Grapes. Mr. J. Hollingsworth was first with clean large bunches of Golden Queen. Mr. J. Wallis, gardener to Rev. W. Sneyd, Keele Hall, Staffordshire, was second with the same variety, and Mr. Goodacre third, also showing the same kind. All the competitors in this class staged Golden Queen, and the majority were of a dirty colour. For four bunches Mr. Hollingsworth took the lead with grand bunches of Mrs. Pince, Trebbiano, Alicante, and Golden Queen; Mr. T. Elsworthy being placed second with Golden Queen, Alicante, Alnwick Seedling very fine, and Muscat of Alexandria, Mr. Goodacre being third. Thirty-two bunches were staged for the prizes offered. Mr. J. Bennett was the only exhibitor in the two classes for Pines, and staged some large good fruits, for which he was awarded the two first prizes.

Pears.—These were not only numerous but the exhibits throughout were of the finest quality, being both large in size and well coloured. For eight dishes of dessert kinds, distinct, Rev. L. Garnett, Christleton Rectory, Chester, was well to the front with remarkable examples of Gansel's Bergamot, Pitmaston Duchess very fine, Doyenné du Comice very large, Beurré Bosc, General Todtleben, Brown Beurré, Maréchal de Cour, and Marie Louise. Mr. Goodacre was a capital second, who staged Catshead Bergamot, Pitmaston Duchess, Duchesse d'Angoulême, and other kinds as named above. Mr. Hannagan was third, and in addition to those named above this collection contained a very fine dish of Hacon's Incomparable. No less than fifty-six dishes of fruit were staged in this class. For four dishes the competition was equally good, and as many exhibitors staged collections. Mr. T. Weeden, gardener to T. Case Morris, Esq., Beechwood, Aigburth, gained the premier position with grand dishes of Beurré Diel, Pitmaston Duchesse extra large, Glou Morceau, and Doyenné du Comice. Mr. J. Lowndes was second, and Mr. Hannagan third, both showing remarkably well. For one dish the Rev. L. Garnett was placed first with a splendid dish of Doyenné du Comice; second, Mr. N. E. Owen, gardener to Viscount Combermere, Salop, with Marie Louise; and Mr. J. Davies, gardener to Rev. R. Arkwright third. Twelve dishes were staged. About the same quantity was staged for one dish of stewing kinds. Mr. T. Weeden was well first with Pitmaston Duchess, probably three times larger than any other fruit of this variety in the Exhibition. The fruits were wonderfully fine, and said to have been grown on a small plant in a pot. Mr. J. Davies second with Catillac, and Mr. Hannagan third with the same variety.

Apples.—These were large and much better coloured than we have previously seen exhibited at this Society's exhibition. Eight collections were staged in the class for six dishes of dessert kinds. Mr. F. Miller, gardener to J. F. Friend, Esq., Moorgate, was well first with superbly coloured large fruit of Fearn's Pippin, Scarlet Pearmain, King of the Pippins, Ribston Pippin, Cornish Aromatic, and Blenheim Pippin. Mr. Goodacre was a good second, and staged very fine dishes of Blenheim Nonesuch, King of the Pippins, Winter Pearmain, Cox's Orange Pippin, and Adam's Pearmain. Mr. J. Davies was placed third with similar varieties. For three dishes the successful exhibitors were Mr. A. Eaton, gardener to H. Robinson, Esq.; Mr. R. Brownhill, gardener to R. Hargraves, Esq., Ravenswood, Rock Ferry; and Mr. J. Lowndes. Eight collections were staged in this class. In the class for one dish nine exhibitors staged. Rev. L. Garnett took the lead with Cox's Orange Pippin, Messrs. E. Owen and J. Barker second and third. For eight dishes of kitchen varieties seventy-two dishes were staged. Mr. F. Miller was well first with Mère de Ménage, Waltham Abbey Seedling, Annie Elizabeth, Alexandra, Blenheim Pippin, Peasgood's Nonesuch, and Small's Admirable; all were large and well-coloured examples. Mr. Goodacre was a close second and Mr. W. Edwards, Thinghill, Hereford, third. For four dishes eight collections were staged, the successful competitors being Messrs. L. D. Turner, T. Weeden, and J. Kelly, gardener to R. Singlehurst, Esq., Aigburth. For one dish Mr. Edwards, Hereford, was well first, Mr. F. Miller second, and Mr. J. Davies third.

Vegetables were not very largely shown, as only two classes were provided for them. For a collection of six varieties Mr. Goodacre took the lead with grand samples, followed by Mr. Hannagan and Mr. N. E. Owen. The same exhibitor was again first for one dish of Tomatoes, Dedham Favourite; Mr. J. Smeatham, gardener to F. D. Nuttall, Esq., St. Helens, second, and Mr. J. Bounds third.

Miscellaneous Exhibits.—These added materially to the beauty of the Exhibition. Messrs. R. P. Ker & Sons, Aigburth, contributed a beautiful bank of Cyclamens, which were very effective and much admired, for which a first-class certificate was awarded. A similar award was made to the Liverpool Horticultural Company (John Cowan) for an assortment of small decorative flowering and foliage plants. Certificates of merit were also awarded to Messrs. James Dickson & Sons, Newton Nurseries, Chester, for a collection of eighty varieties of Apples and about thirty varieties of Pears; Messrs. R. Smith & Co., Worcester; Messrs. F. & A. Dickson and Sons, The Upton Nursery, Chester; and Mr. C. Rylance, Aughton, Ormskirk. The collections from all were large and very praiseworthy. Messrs. Blake and Mackenzie exhibited a quantity of their plant and cut flower boxes. Mr. E. Sydney contributed a large quantity of vases and other similar articles made of slag ware. Mr. J. P. Bethell exhibited a large quantity of their unique folding flower boxes.

The arrangements of this very fine Exhibition were of a very complete and satisfactory character, and the highest credit is due to Mr. Bridge, the able Secretary, as well as the whole of the working Committee.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S

WINTER SHOW.—NOVEMBER 25TH AND 26TH.

It was a happy thought to get up an Apple and Pear Congress in connection with the Winter Show this year, for had it not been for these fruits the Show must have been a failure. There were hardly any pot plants of merit; the Chrysanthemums in pots were of indifferent quality, and though there were some blooms of these of good size shown the competition was of the poorest description. Vegetables and hardy fruits were the only articles which brought out any competition.

For a table of plants, Chrysanthemums and others, 40 feet by 10 feet, Messrs. Ireland and Thomson took first prize, the centre of the group being a bold and effective mass of naturally grown Chrysanthemums with a broad edging of stove and greenhouse plants round the central group. Messrs. Methven and Sons were second. For a table of the same kind of plants confined to gardeners, and 20 feet by 5 feet, Mr. Grossart, gardener to Mr. Buchanan, Oswald Road, was first, and Mr. Smith, Restalrig, second. Stove and greenhouse plants were very poor, though Mr. Scott, gardener to Lord Elphinstone, Carberry Tower, showed six good foliage plants. Mr. Niel Fraser, Murrayfield, in the class for six exotic Ferns, had good specimens of *Gymnogramma javanica*, a distinct species, with little in its general appearance to suggest the family to which it belongs. A very fine *Goniophlebium appendiculatum*, a *Davallia dissecta*, and *Todea intermedia* were the best of the other kinds. Some good *Adiantums* in variety were also shown. Mr. Grossart was the only exhibitor of two Orchids, getting for these first prize, and staging a fine plant of *Lælia autumnalis atro-rubens* with five strong spikes, and *Vanda carulea* with one spike. A large number of prizes were offered for Chrysanthemums in pots, but the plants staged were of the poorest description. Some of the nurserymen sent fine groups of *Coniferae* and hardy shrubs suitable for winter decoration, and for these Messrs. Ireland and Thomson took first prize with fine plants, Messrs. Methven and Sons being second with an equally effective lot but plants of a smaller size. The rest of the prizes for plants brought out a poor competition.

Of the Chrysanthemum blooms, the best were those which follow:—Twenty incurved (nurserymen), first to Mr. T. B. Morton, Mowden Bridge Nursery, Darlington, his best blooms being Lord Alcester, Alfred Salter, John Salter, Princess of Wales, Beauty, and Prince Alfred. Second Messrs. Ireland and Thomson. Twenty Japanese—First Messrs. Ireland & Thomson, who had among others very fine examples of Elaine, Criterion, Fair Maid of Guernsey, Comte de Germiny, Mad. C. Audiguier, F. A. Davis, La Nympe, Mad. A. Roze, Curiosity, and Henri Jacotot. Mr. Morton was a close second. For ten incurved, ten Japanese, and ten reflexed Mr. Morton was first—of the latter Cullingfordi was very fine—also first for ten Anemones, among which the Japanese varieties, *Sœur Dorothee Souille*, *Fabian de Mediana*, and *Marquise de Telleville* were good.

In the gardeners' classes Mr. Forbes, gardener to J. S. Morgan, Esq., Dover House, Roehampton, was first with good, though rather aged blooms; Mr. Carruthers, Corstophine, second, with much looser blooms. For twelve Japanese Mr. Carruthers was first, his blooms having the colours blanched through forcing, Mr. Forbes being second with much finer blooms. Mr. Forbes was also first for twelve incurved and ten Japanese, and for six Anemone and six reflexed, and for six sent out since 1882, with F. A. Davies, Jeanne d'Arc, Mr. J. Laing, Lord Wolseley, Lord Alcester, and Duchess of Albany. Some pretty bouquets were shown, and Messrs. Todd & Co., and Messrs. Methven & Sons, showed beautiful examples of wreaths, &c.

There were only two collections of six sorts fruit staged, Mr. McIndoe, Hutton Hall, Gnisborough, being first with a Pine Apple, Trebbiano, and Barbarossa Grapes, very fine Beurré Diel Pears, Blenheim Pippin Apples, and Oranges. Mr. McIntyre, The Glen, Innerleithen, had the other collection. Mr. Hunter, Lambton Gardens, Durham, and Mr. McIndoe were the fortunate exhibitors of Pine Apples. For eight bunches Grapes four exhibitors staged, Mr. Murray, Park Hall, Falkirk, being easily first with extra large and fine bunches of Gros Colman, Mrs. Pince, Syrian, Gros Guillaume, Lady Downe's, and fine Golden Queen. Mr. McHattie, gardener to the Marquis of Lothian, Newbattle Abbey, Dalkeith, second. In the class of four bunches Mr. Murray was again first with Lady Downe's, Gros Colman, Mrs. Pince, and Alicante, all fine. Mr. D. Howie, gardener to Rev. Mr. Bruce, Donimale, second with equally good though small bunches. Mr. Murray, with two extra good Black Hamburgs, was first in that class, Mr. Mattheson, gardener to the Duchess of Roxburgh, Broxmouth, Dunbar, was first for two bunches of Muscat of Alexandria, very fine; and Mr. Johnston, gardener to Earl of Strathmore, Glamis, second, also with good fruits. For one bunch of same Grape Mr. G. Greig, gardener, Craigend Park, was first. Mr. Borthwick, gardener to Sir G. Montgomery, Stobo Castle, Peebles, first for one bunch Black Hamburg rather shrivelled. For one bunch of Alicante Mr. Niell, gardener to F. Allen, Esq., Peelwallis, Ayton, was first with a very fine example. For one bunch Gros Colman Mr. Murray, gardener to T. L. Learmonth, Esq., Parkhall, Falkirk, was first with a remarkably fine example. From Mr. Murray, gardener to Marquis of Ailsa, came the finest Alnwick Seedling. Mr. Brunton, gardener to Sir A. Kinloch, Bart., Gilmerton, Drem, had the best flavoured black, Muscat Hamburg; Mr. McIndoe the best flavoured white, Muscat of Alexandria. Mr. Niell, Ayton, had the finest bloomed bunch, Alicante. The best bunch of any other black Grape than those named in schedule was an extra fine example of Mrs. Pince from Mr. Jeffrey, gardener to A. Pringle, Esq., Craigcleuch, Langholm.

Pears, though not numerous, were generally of fine quality, most of them being evidently the produce of trees grown in glass structures. For a collection of twenty or more sorts Mr. Hunter, gardener to the Earl of Durham Lambton Gardens, was first with among other grand examples of Beurre Diel, Napoleon, Duchesse d'Angoulême, Pitmaston Duchess, General Todtleben, Marie Louise, Drondeau, Dr. Delafosse, and Marie Benoist. Mr. McIndoe second with a much larger number of sorts, but the fruits much smaller. The same exhibitors were first and second respectively for twelve sorts of Pears; Mr. Murray, Parkhall, first for six sorts; and for two sorts Mr. McIndoe first and Mr. Black, Smeaton Gardens, Preston Kirk, second with fine fruit from wall cordons.

The prizes for Apples were very keenly contested, examples from orchard houses, wall trees, espaliers, cordons, and bushes being presented. For a collection of thirty or more varieties, Mr. McKenzie, gardener to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, was first, showing among other fine examples of stove Apples, Peasgood's Nonsuch, Mère de Ménage, Alexander, Gloria Mundi, Cobbet's Pearmain, and Waltham Abbey Seedling. Mr. Galloway, gardener to the Earl Minto, Minto, Hawick, second with a very even lot, grown on wall trees, and extra well finished for Scotch Apples, Ravelston Pippin, Striped Beaufin, Ribston, Blenheim, King of Pippins, and Adams' Pearmain were the best. For twelve sorts Mr. McIndoe was first, his best being Gasgoigne's Seedling, Mère de Ménage, and Waltham Abbey Seedling. Mr. Potter, Seaclyff, North Berwick, second. For six sorts Mr. Brunton was first. Among other single dishes the following were good—

viz., Blenheim Orange, Mr. McIntyre, gardener to Mrs. Pease, Woodside, Darlington, being first; Stirling Castle, first Mr. Lamont, Kennet House; Golden Noble, first Mr. D. Logan, Coldstream; Lord Suffield, first Mr. Potter; Warner's King, first Mr. McKelvie, who also had first for King of the Pippins. The heaviest Apples being Gloria Mundi from Mr. McKenzie, Linton Park.

Vegetables were a very good show. For twelve varieties (market gardeners) Mr. Logan, Coldstream, was first with a fair lot. Mr. Potter, Seaciff, being first in the gardeners' class with good Celery, Tomatoes, fine Brussels Sprouts, and Veitch's Protecting Autumn Broccoli. For twelve Tomatoes Mr. Gordon, Niddrie House, was first. Mr. Potter had extra fine Brussels Sprouts; Cauliflowers, Onions, and Leeks were very fine. Mr. Cockburn, Stenton, East Lothian, showed a very fine dwarf strain of Parsley, and Mr. Donaldson, Keith Hall, had the best Potatoes.

Among miscellaneous exhibits was a basket of rare and beautiful flowers from Dr. Paterson, Bridge of Allan; basket of Grapes from Mr. Thomson, Clovenfords; examples of variously trained Apple trees from Messrs. Dickson & Co.; and a table of fine plants from Messrs. Laird & Sons, Pinkhill.

APPLE AND PEAR "CONGRESS."

The Apple and Pear "Congress," as already stated, saved the Show from being a failure. The whole of the northern half of the Waverley Market, and the west end of that building was set apart for these fruits. Four tables, each over a hundred yards in length, besides several smaller tables, were filled entirely with the fruit sent for the Congress. About 12,000 dishes of fruit were staged, and all parts of the United Kingdom and Ireland were represented in addition to a few dishes from Switzerland and a good collection from Nova Scotia. The British Apples came from such diverse quarters as the Orkney Islands, the Isle of Mull, Caithness, &c., in the north of Scotland, and Surrey and Kent in the south of England. Taking the Scotch Apples first, the county which staged the largest number of dishes was the home one, Midlothian, 1350 being set up by seventeen exhibitors, several of whom were nurserymen. Roxburghshire came next with 750 dishes, East Lothian with 660, and Lanark with 510. As a whole the finest fruit came from East Lothian, Roxburghshire, and Berwickshire, though there were individual cases in other counties, even the far north, where good fruit was to be found. Judging from the fruit staged the number of sorts which are relied on are not numerous, a few well-known sorts being found in most of the collections. One of the most common is the Old Catshead; Warner's King, Keswick Codlin, and Lord Suffield are also very common sorts, and in most districts these grow to a good size. In fact Catshead from Orkney was quite as large as it is to be found in the south of Scotland, though of course very green.

Aberdeen.—There were twelve exhibitors from this county and about 340 dishes were staged some of the fruit was very good, while others was extremely green, hard, and small. Messrs. Cocker & Sons, Aberdeen, staged eighty-four sorts Apples, Tower of Glamis, Stirling Castle, Worcester Pearmain, and Wellington being very good. Mr. Donaldson, gardener to Earl of Kintore, Inverury, had sixty-three dishes Apples and nine of Pears, the latter small and green, the Apples good, Warner's King, Red Astrachan, and Kentish Fillbasket very good. Mr. Harris, Kincardine, O'Neil, in his twenty-four sorts had good Dutch Codlin, Cellini, Golden Spire, and Fulwood, in addition to sorts already named. Other exhibitors were Mr. Forrest, Haddo House, Messrs. W. Smith & Sons (150 dishes), Mr. Harper, Monalten Gardens, Mr. P. Glennie, Bielack, Mr. R. Pirie, Castle Newe, Mr. Farquhar, Fyvie Castle, Mr. Smith Dunecht, Mr. J. Hardy, Aboyne, Mr. Stephen, Crathes Castle, and Mr. Kilgour, Edge Hill.

Ayrshire.—Five exhibitors, 266 dishes. Mr. A. Bogie, Auchans House, 170 sorts though small well coloured, some good examples from wall or from pot culture; Mr. Gilchrist, Hurlford, thirty dishes well coloured; Mr. Wilson, Auchincrim, Ayr, forty-two dishes, including a fine dish of Duchesse d'Angoulême Pears; Mr. Gallacher, Kilkerran, Maybole, nine dishes of very good fruit, Pott's Seedling and Ecklinville, fine; Mr. McKinnon, Dumfries House, fifteen dishes.

Argyleshire.—Mr. Grierson, Torleisk Gardens, Tobermory, Isle of Mull, had seventeen dishes, Alexander, Lord Suffield, and Cox's Pomona from a south wall being very fine indeed, and Thorle Pippin and Dumelow's Seedling from standard, good.

Berwickshire.—Eight exhibits came from this county, some very good fruit being staged. Mr. Fowler, Mertoun House, St. Boswells, showed fifty-six sorts of Apples and eighteen of Pears; of the latter Beurré Diel, Marie Louise, and St. Lawrence were fine, Peasgood's Nonsuch, Paradise Pippin, Worcester Pearmain, and Lord Suffield among the Apples very fine. Mr. McIntosh, Paxton House, Berwick, staged 110 dishes, not of a large size of fruit but well coloured. Mr. Cairns of The Hirsell; Mr. Renton, Lees; and Mr. Hogg, Hope Park, Coldstream, each staged very large collections of fine fruit. The latter had very fine Conseiller de la Cour and Beurré Clairgeau Pears; and among the Apples in these collections were White Melrose, Cox's Pomona, Court Pendu Plat, and Manx Codlin. Mr. Robertson, Cowden Knowes, Earlston, forty dishes of rather small fruits.

Banffshire.—Mr. Berry, Cullen House, Cullen, staged 100 dishes, eighteen of which were Pears; the Apples were small though well coloured.

Caithnesshire.—Mr. D. Munro, Keiss Castle, Wick, showed thirty sorts mostly small, Catshead large.

Clackmannan.—Mr. J. Lamont, Kennet House, had fifty sorts of good eize though wanting in colour.

Dumbartonshire.—Mr. Mitchell, Camis Eskan, had thirty dishes, mostly small and very green.

Dumfriesshire.—Messrs. Thomas Kennedy & Co., Dumfries, 100 dishes of very good fruits, Gloria Mundi, Mère de Ménage, Golden Spire, Lord Derby, Catshead, Hollandbury, and Tower of Glamis the best. Mr. J. Hamilton, Dorncliff, Moffat, twenty dishes of very small fruits.

East Lothian.—Eight exhibitors. Most of the fruit shown was of a good size, and some of it well coloured. Mr. Black, gardener, Smeaton House, Prestonkirk, showed sixty-three dishes, Newtown Pippin and Irish Peach fine. Mr. Brotherston, Earl of Haddington, Tynninghame, had eighty-four dishes, Warner's King, Ecklinville, Mère de Ménage, Cox's Pomona, being good. Mr. Brunton, gardener to Sir A. Kinloch, Bart., Gilmerton, Drem, had twenty-two dishes Pears and 110 Apples, fruit fine. Stone's Apple Old

English Codlin, and Cellini firm. Mr. Dow, gardener to Sir D. Baird, Newbyth, had sixteen dishes Pears, sixty-one Apples; the Pears very fine, especially Moorfowl Egg, Beurré Diel, Beurré d'Amanlis, and Hacon's Incomparable. Mr. Garrett, gardener to J. B. Balfour, Esq., Whittinghame, showed eighty dishes of Apples, the fruit of good size, but wanting in colour, Golden Noble fine. Mr. G. Potter, Seaciff, North Berwick, had sixty-seven dishes, good colour, fine fruit. Mr. Morrison, gardener to Miss Hamilton, Archerfield, Drem, had thirty dishes Pears and 110 Apples. These were generally small. Mr. McKelvie, Broxmouth, Dunbar, contributed thirty-six sorts, good highly coloured. First Warner's King and Greenup's Pippin especially fine.

Fife.—Five collections, 240 dishes, five exhibitors, fruit generally good size and well coloured. Mr. Grant, Cambo House, Crail, had sixty-two dishes. Mr. Henderson, Balbirnie, Markinch, showed sixty-four of rather smallish fruits. Mr. Williamson, gardener to J. H. Riggs, Esq., Tarvet House, Cupar, had seventy-two dishes, very good. Mr. Tait, gardener to Sir T. Coutts Lindsay, Bart., Balcarries, fifty dishes of good well-coloured fruits.

Forfar.—Three exhibitors, 410 dishes. Messrs. Laird and Sinclair had 350 dishes, some of which were very good. Mr. D. D. Anderson, Green-bourne, Monifieth, contributed eighty dishes, and Mr. Johnston, Glamis Castle, Glamis, eighty dishes of small and green fruits.

Lanarkshire.—510 dishes, ten exhibitors. Mr. Gorrie, gardener to W. H. Hoyler, Esq., Mauldslee, Carlisle, had 285 dishes small but highly coloured fruits. Mr. King, Dalzell Gardens, Motherwell, had fifty dishes, also small and some well coloured, the others were generally poor and wanting in colour.

Midlothian.—Seventeen exhibitors, 1350 dishes. Mr. Dunn, gardener to Duke of Buccleuch, Dalkeith, staged seventy dishes of Pears and 260 of Apples, the fruit being generally of a small size and rather greenish. Sixty dishes were from dwarf bush, two years planted, the other four old standards, the latter much the best fruit. Yorkshire Beauty, Lord Suffield, and Alfriston were most noticeable in this collection, to which we may have an opportunity to refer again. The fruit in most of the other collections was also small in size and wanting in colour. Mr. Smith, gardener to Earl of Stair, Oxenford, and Mr. Gray, gardener to Sir J. Don Wanchope, Bart., Edmonston, having some good fruit in their collections. Messrs. Dickson and Co., Waterloo Place, staged 150 dishes from the Silverton Nurseries, some good examples being among these, Greenup's Pippin, Lord Suffield, Warner's King, Ecklinville (five seedlings) being among the best.

Morayshire.—Messrs. R. & A. Morrison, Elgin, staged a good collection of highly coloured fruit, Peasgood's Nonesuch being very fine; and Mr. Chrystal, gardener to Sir W. Gordon-Cumming, Bart., Altyre, Forres, had fifty dishes of fairly good fruits.

Nairnshire.—Two collections came from this northern county, but the fruit was rather small.

Orkney.—Mr. J. McDonald, gardener, Balfour Castle, sent twenty-one dishes, which were mostly small and very green.

Peeblesshire.—From the hilly county three exhibitors forwarded small collections, the best being from Sir C. Tennant, Bart., The Glen, Innerleithen. Those from Mr. Borthwick, Stobo Castle, Peebles, and from Mr. McFarlane, King's Meadow, were smaller and very green. Stirling Castle was fine from the last-named exhibitor.

Perthshire.—There were ten exhibitors from this county, who sent about 440 dishes. Much of the fruit was very small and greenish, but good examples were present in some of the collections. Mr. Robertson, Fern Bank House, Errol, staged 100 dishes, some of which were very good. Mr. Browning, The Gardens, Dupplin, Perth, had fifty dishes, very good, Lord Suffield being fine. Mr. Brown, Abercainey, had thirty dishes, and Mr. W. Bisset, gardener to Sir R. Moncrieff, Bart., Bridge of Earn, fifty dishes.

Renfrew.—Mr. Maxwell, gardener to Mrs. Clarke, Ralston House, sent thirty dishes, but the fruit was small and green.

Roxburghshire.—Seven hundred and fifty dishes came from this county, sent by seven exhibitors. Some of the fruit was very good. The best came from Mr. Dalrymple-Elliston, St. Boswells, the fruit evidently having been the produce of orchard house culture. There were forty-seven dishes of Pears and thirty-three of Apples in this collection. Of the former Uvedale's St. Germain, Bergamotte Esperen, Beurré d'Anjou, Passe Colmar, Beurré Diel, Doyenné du Comice, Nouvelle Fulvie, and Glou Morceau were especially fine; and of the latter Warner's King, Alfriston, Reinette du Canada, Rossignol, and Peasgood's Nonesuch. Mr. Kerr, Sunlaws, Kelso, showed forty-three dishes, many of which were good. The best were Catshead, Alfriston, Mère de Ménage, Dumelow's Seedling, Gravenstein, and Worcester Pearmain. Messrs. Stuart & Mein, Kelso, showed 210 dishes, a good and representative collection, mostly grown on nursery trees. Messrs. Laing and Mather, Kelso, had 150 sorts of Apples and eighteen Pears, which had been sent from local gardeners through them. There was much fairly good fruit, Golden Noble, Gravenstein, Maltster, Manx Codlin, Ecklinville, and Warner's King being most noticed. Messrs. Ormiston & Renwick, Melrose, sent 200 dishes very good, examples of White Melrose, Manx Codlin, The Queen, and Cox's Pomona being noticeable. Mr. Thomson, Eildon Hall, sent twenty-four dishes of good fruit.

Ross-shire.—Mr. Munro, gardener to A. Matheson, Esq., Duncraig, Stornoway, had 100 dishes, thirty of which were Pears of poor quality, and the Apples very green. Mr. Simpson, gardener to K. S. Mackenzie, Esq., Brahan Castle, Conon Bridge, fourteen Pears and sixteen Apples, not large, but many well coloured.

Stirlingshire.—Four hundred and two dishes came from this county sent by four exhibitors. Messrs. Drummond & Sons, Stirling, sent 186 dishes, seventy-eight of which were Pears. The fruit was mostly green, but some of good size, the best sorts being Warner's King, Catshead, Stirling Castle, Blenheim Pippin, Lord Suffield, and Yorkshire Greening. Mr. Souza, Touch, sent 110 dishes, eighteen of which were Pears, all small and mostly green. Mr. Carnegie, Leckie House, Stirling, sent twenty-three dishes of Apples and nine dishes of good Pears. The others were very poor.

Selkirkshire.—Mr. Anderson, Broadmeadows, forty dishes of fairly good Apples; Catshead, Stirling Castle, and Lord Suffield the best.

Sutherlandshire.—Mr. Melville, Dunrobin Castle, sent twenty dishes, and Mr. Urquhart, Skibo Castle, Dornoch, thirty dishes, very small and green; Catshead large.

Wigtonshire.—Mr. P. Lemon, gardener to J. F. Hathorn, Esq., Castle Wigg, Whithorn, had thirty-one dishes of green and small fruit.

ENGLAND.—The English Apples were largely shown on the tables, a large number of these being undistinguishable from the average Scotch as to size and quality. This of course refers to those from the north of England, as the large collection from Little & Ballantyne, Carlisle, and others. Kent sent the finest collection in the Show, that of Messrs. G. Bunyard & Sons, Maidstone; while the best from gardens was that of Mr. Smith, gardener to the Earl of Rosebery, Mentmore, Bucks. As with the Scotch counties, we shall take these in their alphabetical order.

Buckinghamshire.—As above noted, Mr. Smith forwarded the finest collection shown by gardeners, and consisted of 180 dishes of Apples, several of which were duplicates. The fruit was of good size and well coloured, the more remarkable being Blenheim Pippin, Bess Pool, Ecklinville, Warner's King, Gloria Mundi, Waltham Abbey Seedling, Cox's Pomona, Hanwell Souring, Alfriston, Golden Spire, Peasgood's Nonsuch, and Lady Henniker. Mr. G. T. Miles, gardener to Lord Carrington, Wycombe Abbey, sent twenty-six dishes Pears and thirty-four of Apples. Of the former, Beurré Diel and Glou Morceau were good, and of the latter, Dumelow's Seedling, Warner's King, Golden Noble, and Mère de Ménége.

Cumberland.—Messrs. Little & Ballantyne, Carlisle, set up 560 dishes, mainly from the gardens of this county. Much of the fruit was small and green, though much of it, on the other hand, was good. Lord Suffield, Brabant Bellefleur, Melon, Warner's King, Gloria Mundi, and Bank Apple were among the best sorts.

Durham.—Mr. Hunter, gardener to Earl of Durham, Lambton, sent fifty dishes of very green fruit, though generally of good size, Lord Suffield and Lord Derby the best.

Hertfordshire.—From Mr. Watkins, Pomona Farm, Withington, came 210 dishes and eighty of the cider kinds, which attracted much attention from their beautiful colouring. The other sorts were also very highly coloured. Tom Putt, Mère de Ménége, Calville Rouge, Royal Codlin, Greaves' Pippin, Yorkshire Beauty, and Flanders Pippin were the most noticeable in this lot.

Kent.—Messrs. G. Bunyard & Son, Maidstone, showed 300 dishes, the finest samples being Cox's Orange, Gascoigne's Seedling, Dutch Mignonne, Lady Henniker, Cox's Pomona, New Hawthornden, Melon, Wellington, Warner's King, Peasgood's Nonsuch, Lord Derby, Mère de Ménége, Annie Elizabeth, Bleuheim Pippin, Hoary Morning, Gloria Mundi, Alexander, Worcester Pearmain, Reinette Van Mons, Nanny, Cornish Aromatic, Stirling Castle, Golden Noble, Duchess of Gloucester, &c., very fine. Pears—Beurré Rance, Beurré Diel, Doyenné de Comice, D'urondeau, Marie Benoist, &c. Mr. McLean, gardener to Jas. Whatman, Esq., Vinters Park, Maidstone, had forty dishes, of which the best were Stone Pippin, Blenheim Pippin, Warner's King, &c. Mr. R. Young, 52, High Street, Sittingbourne, thirty dishes of fairly good Apples and a few Pears. Mr. Killick, Langley, a few dishes of fine fruit, including Stevens' Seedling, Tower of Glamis, King of the Pippins, and Blenheim Pippin.

Rutland.—Mr. Ingram, Belvoir Gardens, showed thirty-seven dishes of Pears, of which the following were fine:—Beurré d'Anjou, Beurré Clairgeau, General Todtleben, Pitmaston Duchess, and Hayshe's Bergamot; and fifty-eight dishes of Apples, of which Lord Lennox, Flower of Kent, Cox's Pomona, Peasgood's Nonsuch, Golden Noble, Lord Derby, Warner's King, and Blenheim Pippin were very fine.

Leicester.—Messrs. Harrison & Sons, Leicester, sent a good collection, Lord Melbourne being the most noticeable kind.

Middlesex.—Messrs. Veitch & Sons, Fulham Nurseries, London, sent a fine collection consisting of 145 sorts of Apples and seventy-four sorts of Pears. Some of the finest examples of Apples were Bismarck, King of the Pippins, Gloria Mundi, Mère de Ménége, Warner's King, Barker's Seedling, Hollandbury, Sandringham, Flower of Kent, Stirling Castle, Beauman's Red Reinette. Of Pears, Duchesse d'Angoulême, Beurré Diel, Hayshe's Prince Consort and Victoria, Beurré Clairgeau, Knight's Monarch, Glou Morceau, and Forelle were best. Mr. Barron, the Royal Horticultural Society's Gardens, Chiswick, sent 100 sorts Apples and 100 of Pears; of the latter were grand examples of Duchesse d'Angoulême, Passe Crassane, Triomphe de Jodoigne, Beurré Bachelier, Marie Benoist, Beurré d'Anjou, Maréchal de Cour, and Maréchal Vaillant; and of Apples, Stone Apple, Alexander, Small's Admirable, Mrs. Barron, Golden Noble, Beauman's Red Winter Reinette.

Norfolk.—Mr. S. Castle, West Lynn, King's Lynn, sent forty-five dishes, some of these being very good, notably so Warner's King, Mère de Ménége, Yorkshire Beauty, Norfolk Beaufu, and Hawthornden.

Northumberland.—There were four exhibitors from this county. Mr. Inglis, gardener to Lord Grey, Howick, had 110 dishes Apples and 200 Pears. Of the latter very good dishes of Hacon's Incomparable, Beurré Diel, and Duchesse d'Angoulême from cordons. Some of the Apples were very small. Amongst the best were Catshead, Gravenstein, Mère de Ménége, Costard, Red Autumn Calville, Yorkshire Beauty, Warner's King, and Alfriston. Mr. Harris, gardener to the Duke of Northumberland, Alnwick Castle, sent thirty-two dishes Pears and 114 of Apples. Of the former Souvenir du Congrès, Beurre Superfin, Marie Louise, and Josephine de Malines were good. Mr. McAdam, Haggerstone Castle, sent sixty-eight dishes, some of the fruit being good, but much of it small; and from Mr. Berrie, gardener to the Earl of Tankerville, Chillingham Castle, eighteen dishes of well-coloured good examples.

Shropshire.—Mr. Jessels, Aquicote House, Newport, sent twenty dishes of rather poor fruits, and from Mr. Sherwood, gardener to J. C. B. Boroughs, Esq., Chetwynd Park, Newport, sixty-four dishes of Apples and forty-one of Pears, all of which were rather small in size.

Surrey.—Mr. Burnett, The Deepdene, Dorking, sent eighty-six dishes of Apples and thirty of Pears. Of the former very good examples of Hornead Pearmain, Cox's Pomona, and Hollandbury, and of the latter Beurré Bosc was of large size.

Sussex.—Mr. Rust, gardener to the Marquis of Abergavenny, Eridge Castle, had 100 dishes of Apples and twenty of Pears, generally of poor quality for the south of England.

Worcester.—From Mr. Ritchie, Eurdenton, Gardens, Worcester, 120 dishes of Apples, and thirty of Pears. The Apples being mostly small, though well coloured.

Yorkshire.—Mr. Tindal, gardener to Sir Joseph Copley, Bart., Spottedborough Hall, Doncaster, sent about thirty dishes of Pears and a few fairly good Apples. Mr. McIndoe, Hutton Hall, Guisborough, twenty-one dishes of green Apples.

WALES was poorly represented, only three collections having been forwarded.

Denbigh.—Mr. Loundau, The Quinta, Chirk, sent 100 dishes of good fruits, the finest being New Hawthornden, Ecklinville, Warner's King, Gloria Mundi, Peasgood's Nonsuch, and Stirling Castle.

IRELAND.—Half a dozen exhibitors hailed from Ireland, some of the fruit being good, and much of it small and green.

Antrim.—Mr. C. Warwick, gardener to Lord O'Neil, Shanes Castle, Antrim, sent seventy-two dishes of generally small, though some of it fairly good, fruits.

Co. Down.—Messrs. Rogers, McElliott, & Co., Newry, sent forty dishes of good well-coloured fruits, English Codlin, Warner's King, and Catshead being best. Mr. Blackburn, Abbotstown Gardens, Castlerock, also sent a collection.

Galway.—Mr. Cobham, Garbally Gardens, Ballinasloe, sent sixty dishes, of which Alfriston, Peasgood's Nonsuch, and Cox's Orange were good.

Mayo.—Mr. R. Farrell, Westport, sent thirty dishes of good well-coloured fruit.

Sligo.—Thirty-five dishes of poor fruit came from this county.

Wexford.—Mr. Turner, Courtown, Gorey, had seventy dishes of good fruit, some of the best were Dumelow's Seedling, Cox's Pomona, Golden Noble, and Blenheim Pippin.

Wicklow.—One collection of ninety-six dishes came from this county, wanting in size and colour of fruit.

SWITZERLAND.—Herr Strasse, Insbruck, Tyrol, showed eight dishes of beautiful clear-coloured fruit, though not of great size.

NOVA SCOTIA.—From here came 110 sorts, many of these were very remarkable for size. Some of the finest were Esopus Spitzenberg, Hoary Morning, Waggoner, Harris, Biglow, Mother, Blenheim Pippin, extra; Fox Pippin, Gloria Mundi, Calashen, Fameuse, Rymer, Gravenstein, Maiden's Blush, King of Tompkins County, extra; Golden Russet, and Kaigu's Spitzenberg.



HARDY FRUIT GARDEN.

Winter Pruning.—For many years it has been a settled plan with us to try and get the winter pruning of fruit trees as forward as possible before Christmas. Pears, Plums, and Cherries are usually done first, then come the Apples, bush fruit, and, lastly, wall trees generally. The only thing left late in the season is the pruning of Nuts and Filberts, all which are left till pollen is so plentiful in the catkins that the impregnation of the female blossom is insured. When the pruning is left till January cold weather not infrequently sets in with such severity that the work is hindered, and there is some risk of spring being upon us before it is done. Therefore let no opportunity be lost of pushing on the work. Thin all crowded spur and branch growth, for without free admission of air and light among the branches the trees cannot continue healthy nor the fruit become fully developed. Often have we gone over our favourite trees again and again before we became fully satisfied with our work. Our object in pruning, too, is not only to render a tree fruitful, but to insure so far as we can the production of really fine fruit. No doubt fruit-thinning contributes materially to this, but we prefer first of all to keep lateral growth thin, and also to thin the fruit when necessary. Avoid excessive pruning of Cherry trees; they are always liable to suffer so much from severe pruning that trees so treated often die. We have lost many trees from this cause, the sorts which have suffered most being Morello, Kentish, Early Purple Gean, Duchesse de Palluan, Early Rivers, and Transparent.

Lateral growth shortened to 6 or 8 inches in August must now be pruned to two or three buds. Do not prune with a long oblique cut, but rather with a short one, taking especial care that the bottom part of the cut is above the bud, in order that there may be plenty of tissue around the base of the bud to insure a full free flow of sap to it when growth begins. Making one side of the cut below the bud is a common error, a piece of slovenly careless practice to be avoided. See that the growth of all young trees is shortened sufficiently to insure a free lateral growth, and take care that the lower branches of pyramids and palmate verriers have a sufficient start to insure robust growth before the upper branches make much progress. Do not prune the shoots of Fig trees now; thin them, if necessary, leaving enough to be tied in thickly. It is from the buds near the tips of the branches that we shall obtain the fruit crop next year.

Stake and tie securely espaliers and other trees requiring supports; also examine the supports and fastenings of newly planted trees occasionally, and see that no roots or stems become loosened in the soil.

Of bush fruits prune away the old wood of Raspberries and Blackberries, and tie in new growths for next year's crop. Raspberries are shortened to about 4 feet, it is quite immaterial whether Blackberries are shortened or not; but it is important to have new growth for fruiting and not old spurred growth. Thin out Black Currant wood, cutting old crowded growth clean down to the ground. Red and White Currants and Gooseberries may also be pruned now, and the bushes should then be

syringed well with a liquor of softsoap dissolved in hot water, and a mixture of lime and soot. See that the branches are well coated with it to keep the buds safe from the ravages of birds. Let the annual surface dressing of the whole of the soil among the hushes and Raspberries follow at once. Old hotbeds or half-decayed stable or cowhouse manure answers admirably for this purpose. There must be no digging among bushes, only the surface dressing of dung, which serves both to keep the bushes healthy and vigorous and to keep down caterpillars in summer.

FRUIT FORCING.

VINES.—*Early-forced Vines.*—When the buds in the early house that was closed last month show signs of swelling, the inside borders should receive another supply of water in the case of vigorous young Vines, and liquid manure where they are old and require stimulating, applying it at a temperature of 80° to 90°. Some good fermenting leaves and short stable manure laid in heaps or ridges on the inside borders will help the surface roots, giving heat and genial moisture to the atmosphere, and so reduce the necessity for strong fires and incessant syringing. Young canes that have not been forced early will require bending down to a horizontal position to insure an even break down to the base, but old Vines that have been some years may be tied down to the trellis immediately they are pruned. The dormant parts should be syringed three or four times a day until growth begins. Turn the fermenting materials over at short intervals, adding fresh material as necessary from the reserve ground to prevent the temperature falling below 75°—i.e., in the materials. Give a little air every day, allowing an advance to 70° or 75°, with gleams of sunshine, and the night ranging between 55° and 60° for the present. When the Vines are fairly moving all the buds show signs of breaking, remove the litter or fern from the outside border and cover with dry warm leaves to a depth of 18 inches, making them very firm, and place old lights or shutters over all, with a sharp pitch to the front for throwing off snow and rain.

Early Vines in Pots.—Pay attention to the fermenting material in pits containing these, and if every pot is stood on a pedestal built up from the bottom of the pit frequent additions may be made as the heat declines, the whole mass may be turned over without displacing them, and root-action will be steadier and less liable to a check when the pots are only partially covered or surrounded by the plunging material. Disbud and increase the temperature to 70° or 75° by day when fine, but do not allow the temperature to exceed 60° (and a few degrees lower will be better when the weather is severe) at night.

Late Houses.—The attention of growers of late-keeping Grapes cannot too often be directed to the importance of starting the Vines and helping them forward with fire heat in the spring rather than trusting to solar heat in summer, and baying to fire hard in late summer and autumn to get the fruit and wood ripe, or apparently so, by November. In fine seasons this answers very well, but in ordinary seasons it is not safe, as the foliage hangs late and is liberated by a rapid depression of temperature. This sudden check, though it brings the leaves down, is not ripening, and the Grapes rarely retain their colour and freshness until the time arrives for cutting in January, and when Grapes begin shrinking on the Vines it is useless trying to keep them until May. All Grapes intended for keeping fresh and sound for some months after they are cut should now be hanging on leafless Vines that completed the year's functions by the close of November. Where the Grapes are in this condition keep the temperature steady at night at 40° to 45°, with just sufficient fire heat to dispel damp and to protect from frost. For Muscats the temperature must range a little higher, or about 50° by day, the chief thing being to prevent the deposition of moisture upon these and other thin-skinned Grapes; but fire heat, even with these, must be used sparingly, as they soon shrivel in a warm over-dry atmosphere. In damp weather, the outside atmosphere being charged with moisture, the house should be kept close, dry, and cool; and in clear weather, the nights being frosty, some fishing nets or, better still, canvas drawn over the lights, will prevent radiation and lessen the need of fire heat and reduce its parching influence to a minimum, whilst the subdued light in the daytime will help the Grapes retain colour and secure a greater equalisation of temperature.

Where late autumn vineries are required for plants the bunches, if any remain upon the Vines, may be cut and taken to the Grape room, the latter being cleansed, warmed, and ventilated. The bottles ought to be clean and filled with clear sweet rain water a few days before they are wanted, otherwise fire heat will have to be used to expel damp after the Grapes are introduced, and an excess of fire heat is quite as unfavourable to long perfect keeping as an excess of moisture. A piece or pieces of charcoal placed in each bottle is advisable. The Vines being free of leaves, each bunch should be cut to the pruning bud, and all the shoots beyond the bunches left intact to prevent loss of moisture from the berries when the atmosphere is dry. The Grape room ought to have thick or hollow walls, and dry with perfect ventilation and sufficient heating power to keep the air dry and the temperature steady at 45°. When the Grapes are cut, and before the winter occupants are taken in, all work in connection with the roots should have attention, and the pruning attended to, and the house put into thorough order ready for a fresh start when the proper time arrives. It is a pity that Vines should be made to act second to bedding plants, even at their resting period, for our experience points to the necessity of a complete season of rest for the Vines with full exposure to the atmosphere of a well-ventilated empty house. Select well-ripened prunings from these mid-season Vines for future stock, and lay them in the open air.

PINES.—During the next two months we may expect many sunless

weather, with long cold nights, constituting a condition not favourable to ventilation, though it may be advanced under favourable conditions, but such is not advisably enforced, nor is it judicious. A slow rate of progress should therefore be aimed at, lowering the temperature to its minimum in each compartment, that for the fruiting house being kept at 65° to 70°; 60° to 65° in the succession houses, and 55° to 60° in compartments where suckers are located. The atmosphere of the fruiting house will, in order to make the best of the fruit, require to be of an invigorating nature, and need unremitting attention. Sprinkling the pathways, and moistening other available surfaces in the house as they become dry, must be strictly accorded, and in proportion to the fire heat applied and the aridity that prevails so must the syringing of the plants be regulated. In light airy houses the plants will need dewing at least once a day, and on bright ones twice. This may be done so long as the water in the axils of the leaves are not surcharged to an extent that will affect the state of the soil around the collar of the plants—a condition that must be avoided. The plants should be examined once a week, and those that really require moisture should be given an abundant supply of tepid weak liquid manure. Plants in fermenting beds will not require nearly so much water as those subjected to bottom heat from hot-water pipes, but they must be seen to as advised and their requirements promptly met. Successional houses and nursing pits having less heat will have a more equable state of moisture, which it should be the object to maintain, employing no more fire heat than is absolutely necessary, employing night coverings as the best means of dispensing with fire heat, and securing an atmosphere favourable to the steady progress of the plants. Let the plants have the full benefit of light and sun, closing early.

PLANT HOUSES.

Poinsettias.—The brilliant scarlet bracts of these plants are more serviceable for various forms of decoration after Christmas than they are before. Perhaps the worst month in the year for flowers is January, and if grown specially for that period they will prove invaluable. If they have enjoyed an intermediate temperature only since they were removed from the cold frames they will now be dwarf and sturdy, with hold leathery foliage down to their base. The bracts will have commenced forming, and if the plants are required previous to the time indicated they should be brought forward in a temperature of 60° to 65°. The plants should be arranged close to the glass, for light and heat are essential to develop large well-coloured bracts. If the plants are not wanted they should be allowed to remain in their present position, where they will steadily unfold fair-sized heads. It is much better to sacrifice a little in the size of the heads than to have them in full beauty at a time when scarlet is plentiful. If the plants are to be employed for conservatory or other comparatively cool structure they must be carefully prepared for the purpose. If they are forced in heat and removed directly from a close moist structure to a cool one their foliage is certain to suffer, and then half the real beauty of the plants is destroyed. When grown in strong heat it is important that they be hardened judiciously for decoration in a cool house, or they will not last half the time they are capable of doing. When grown in an intermediate house they can be removed to the conservatory without preparation, for no check will be occasioned by the slight difference in the temperature. Weak stimulants should be given every time water is needed.

Euphorbia jacquiniæflora and *Centropogon Lucianus*.—These should still be grown in an intermediate house, for they are not yet wanted either for the stove or the conservatory. These two plants are invaluable for either position, and will be found of great service after Christmas. Both structures are now very gay, the former with *Plumbago rosea* and *Begonias* of various kinds, while plenty of scarlet can be maintained in the latter by *Zonal Pelargoniums*, which at this season are indispensable. All plants of this description that can be retarded for use at that period should be, for care in this respect renders the forcing of greenhouse and hardy plants easy and certain. However, if previous directions have not been carried out, and these plants must be brought into bloom, the same care must be exercised in hardening them before placing them in the conservatory as advised for *Poinsettias*.

Eranthemum pulchellum.—For the supply of blue flowers for the stove, intermediate, or warm conservatory few plants equal this old inhabitant of our plant houses. Its flowers, which are produced successionally, are not of much service for cutting, but they are indispensable for associating with other flowering plants in pots at this season. There is generally at this time of the year a scarcity of blue flowers, and therefore this old plant should be grown, for plants in various sized pots from 5 to 10-inch when well bloomed are very effective amongst others. Those grown for this purpose should be brought forward in succession, and a supply of blue flowers can thus be maintained until *Hyacinths* are plentiful.

Begonias.—Such kinds as *B. manicata* and *B. horacleifolia* will bear cooler treatment than many suppose, for our plants have remained in perfectly good condition in a cool house in which the atmosphere has been kept dry. They will now be given a temperature of 50°, while a portion will be removed into a higher temperature to bring them into flower. If they are all given the same temperature they come into flower at one time, and are therefore not so useful. When these plants are in flower they are invaluable for the conservatory where light effective arrangements are required, for the plants can be so arranged that the flowers rise above many other plants. The first named is the lightest in appearance, but it is not so telling as the larger pink flowers of the latter, which also lasts in perfection a greater length of time. In whatever structure these plants

are placed the atmosphere must be kept rather dry or the foliage will decay. Such sorts as *B. weltoniensis*, *B. Dregei*, *B. parviflora*, and others that have been resting in a cool place, may now be started into growth for flowering early in the season. These will soon commence advancing if watered and placed in a temperature of 50° to 55°. Then they should be turned out of their pots, the old soil shaken from their roots, and the plants placed into the pots in which they are intended to flower. They do well in a compost of fibry loam, leaf mould, and manure; the latter should be passed through a sieve, a liberal dash of coarse sand added.

THE FLOWER GARDEN AND PLEASURE GROUND.

Fallen Leaves and Leaf Soil.—The leaves have fallen somewhat earlier than usual, the whole of them in most localities being off the trees, this much simplifying the work of putting the lawns, beds, and borders in good order for the winter. It is useless to clear the lawns and borders without also doing something to prevent the leaves in the shrubberies from being driven on to them again whenever a strong wind prevails. Where they can safely be allowed to remain they will decay and benefit the shrubs, but otherwise they must either be lightly dug in or collected and converted into leaf soil. Some are in the habit of burying great heaps of leaves in any convenient hole, but unless these holes are emptied occasionally, and the well-decayed contents utilised, the practice must be considered a wasteful one. Good leaf soil is almost invaluable to the flower gardener, no material added freely to a compost better suiting delicate seedlings, newly struck cuttings, as well as strong plants; while if it is freely stirred into the surface of the beds intended to be planted more especially with *Violas*, *Verbenas*, and *Begonias*, it will induce a free growth, and not readily permit the moisture of the beds to evaporate. The very best leaf soil is that naturally formed in the woods, or which has drifted into dry ditches. This may be well collected at times when other work is not pressing, and when sifted over and all decaying sticks separated from it, a valuable addition to the potting soils will be secured. Much of the leaf soil formed in the frame ground or in heaps elsewhere is not unfrequently spoilt by over-heating, this resulting in a spread of mould or dry fungus through the heap, and which has quite a poisonous effect on the roots of many delicate plants placed in it. Heaps of leaves intended to be converted into good leaf soil should be frequently turned, especially when they are found to be heating strongly, and this will insure decomposition without fungus being encouraged. Oak leaves are the best, next Chestnut and Elm.

Flower Beds.—If the various bulbs intended to beautify these in the spring are not planted, no time should be lost in getting them in. Unless covered by 2 or 3 inches of soil frost may injure them, and as a further preventive the beds may well be surfaced over with not less than an inch of cocoa-nut fibre or leaf soil. Spring-flowering plants not being available, the beds may be made to present quite a bright appearance by a judicious arrangement of short neat pieces of variegated *Hollies*, *Box*, *Aucuba*, *Mahonias*, and *Tree Ivy*. All our carpet beds have a groundwork of hardy plants, such as *Sedum glaucum*, *Antennaria tomentosa*, *Veronica repens*, variegated *Arabis*, and *Herniaria*, and these, as well as the *Golden Pyrethrum*, are not disturbed, but the figures are filled in with *Ajuga reptans rubra*, small *Beetroot*, *Sempervivum californicum*, neat sprays of coloured *Mahonia*, *Box*, *Hollies*, *Aucuba* and *Ivy*, with small *Cupressus*, *Retinosporas*, and *Iris foetidissima variegata*, the three latter being used for dotting or single prominent plants. In this manner a very pretty effect is easily attained, and which appears to give more pleasure than even the summer occupants did. Other conspicuous beds are also decorated in a somewhat similar manner, this being preferable to naked soil, and obviating the employment of plants that would look dull all the winter, and would, as a rule, flower when there was no one here to see them. Where the beds are not filled in any way, they, if the soil is naturally clayey or of a bad working character, should be dug as roughly as possible, in order that the frosts of winter, or wind and rain of the spring months, may thoroughly pulverise them. It should also be remembered that many hedging plants are great exhausters of the soil, and unless something is done to restore some of the lost fertility, the next occupants cannot reasonably be expected to thrive satisfactorily. Now is the time to manure the heavy soil, and half-rotten leaves or stable manure, or, better still, a dressing of decayed garden refuse, is suitable for the purpose. In the case of naturally light or very free working soils, these are best manured and dug in the spring, all rubbish being cleared off at the present time. When such soils are manured and dug in the autumn they become too finely divided, and are liable to have much of their fertility washed out of them, besides becoming cold and sodden.

Draining Shrubberies.—When choice and even common trees and shrubs are planted on cold undrained positions, the wonder is, not that they refuse to grow, but that they keep alive so long as they do. Too often much of the work of planting shrubberies is completed without any regard being paid to the state of the drains, and from experience we find it very unwise to trust to any natural system of drainage. In one instance that came under our notice a large number of *Wellingtonias*, *Cupressuses*, *Cedrus Deodara*, *Salisburia adiantifolia*, and other *Conifers* and shrubs would only grow in places owing to the subsoil being a cold badly drained clay, the water frequently laying on the surface for days. As it was almost impossible to provide a suitable outlet for drainage, a good-sized hole was formed at a distance from the trees, and to this surface or open drains were led. The effect was most surprising, the trees during the following summer making strong and healthy growth. This afforded most convincing proof that a well-drained and very clayey soil will grow almost anything, and the trees will attain much larger dimensions than they do on lighter and apparently much more suitable soils. Not many

drains are required, over-draining frequently proving nearly as injurious as no draining at all. On heavy clayey land we would dispose them about 12 feet apart and 3 feet deep, while land of a medium texture would require rather fewer drains, these, where possible, being disposed rather deeply in order to prevent a too rapid drainage. Surface drains are advisable when the ground has been trenched and the clayey subsoil brought to the surface, this, during the process of planting, becoming like so much puddle, and preventing the ingress of either water or air. Trees planted in such uncongenial surroundings ought to have a liberal quantity of good light soil, including plenty of leaf soil worked round and about the roots, and from this they will gradually spread into the surrounding soil, always supposing it is properly drained, and therefore rendered warmer and sweeter than it otherwise would be.

THE BEE-KEEPER.

ARTIFICIAL SWARMS FROM SKEPS.

THE man who first discovered and gave to the world in a practical form the art of artificial swarming, conferred an inestimable boon on all apiarians, and one the full value of which is year by year becoming more widely recognised and made use of; so much so, indeed, that in the not distant future a natural swarm will become a rare phenomenon or a luxury enjoyed only by those who can afford to risk the loss of a swarm, or are so continually in the bee garden as to obviate any chance of such loss taking place. There are several ways of forcing swarms, each one differing slightly from the other, and being in some cases more suitable than the method which in another case may be the wiser one to follow. The usual way of taking an artificial swarm from a skep is to drive two thirds of the bees, with the queen, into an empty hive, and place the old stock from which the bees have been driven, not less than 4 feet on one side, and the swarm 4 feet on the other side of the old stand. The object of this is to avoid a great number of bees deserting either the swarm or the old stock, and so either materially weakening the swarm or imperilling the brood, upon the hatching of which the future prosperity of the stock must entirely depend. This is the simplest plan, and it is not necessary to see the queen, as her presence in either hive can at once be detected by the behaviour of the bees, which will, if the queen is not with them, run about in a state of wild excitement seeking her. If the swarm evinces these signs the old stock must be drummed again until the queen goes with the swarm, for the presence of the queen with the swarm is an absolute necessity.

All other plans are but adaptations from this one, and it would not be necessary to enter into any other method in detail, if it were not well known that many bee-keepers are quite unable to have their hives so far apart as to allow the requisite displacement necessary to insure success, although some say that if the hives are placed even less than 4 feet on either side of the old position, and the entrance is disguised for a few days, all will go on well. Suppose, then, three hives are standing in close proximity to one another, and it is desired to take a swarm from each of them, there is ordinarily no little misgiving as to whether the operation can safely be performed.

By the following method, which is not objectionable except that it sometimes incurs a little extra expense, such difficulty can be overcome. The method is to get a friend living at a distance of at least two miles to exchange or sell a swarm. The effect of this will be to facilitate the operation. From each of the three stocks drive all the bees into three separate hives, and place each swarm on its old stand. Here, then, we have three swarms of unusual strength, and three stock hives filled with comb, brood, and honey. We next divide the strange swarm into three equal parts, and to each stock give one part, and place it in any convenient spot. There can be no failure, and if a swarm of equal weight is sent in return for the one made use of in the operation no expense is incurred at all. Even if an exchange cannot be effected, in country places a swarm never costs a sum so large that a

man need hesitate to buy one, for he may confidently expect a speedy return of this outlay, with good interest for his money.

There is yet another way, which may with advantage be mentioned, as giving good results, although in this case half a swarm can only be taken, and room on one side of the end hive is necessary to allow a slight displacement of 3 or 4 feet at the least. Let us take our three stocks again, and explain the plan, which is well known amongst bee-keepers, and has been considered a valuable one by eminent apiarians. From one of the stocks—not being the one which gives room for displacement—drive out all the bees and the queen, and these being placed in the old position, form the swarm. We have then a hive, as before, of comb and brood and honey. The next thing is to place the end stock on a new stand, not less than 3 or 4 feet from the old one, and then place the stock from which all the bees have been driven on the exact position occupied by the stock which has been removed some feet away. This operation should only be performed on a warm sunny day, when many bees are on the wing, as the object is that the bees returning home may enter the hive—placed in the position of the one they left when they went to work—remain in it, and raise a queen while sufficient bees are left in the removed stock to hatch out its brood, which will soon make the hive so populous again that scarcely any reduction will be perceived. The same operation can then be performed with the stock which has not been moved, and so on until the bee-master is satisfied. Second swarms will issue from each of the stocks, but these should be returned a few hours after their issue. This will prove, in the hands of capable men, a safe substitute for the other and more usual methods of forcing swarms, and will also, by reason of only taking half a swarm from each stock, insure a surplus of super honey.

One word of warning must be given with regard to artificial swarming, and that it is better to err by being a week too late than a week too early. No stock should be compelled to give a swarm until the bees are numerous, the brood is filling nearly every comb, and drones are hatching out; and it is safer to leave too many bees in the old stock than to leave too few. If the weather is unfavourable the swarms must be fed, and occasionally the old stock may require a little assistance, as there are many hungry mouths to feed, and, for some days, few labourers to gather food. Assist Nature when possible, but remember that if man interferes with Nature's laws he alone is responsible for the success or failure which rewards his efforts.—FELIX.

GENERAL MANAGEMENT OF BEES AND HIVES.

(Continued from page 482.)

IN addition to large hives with plenty of bees being two essentials towards profitable bee-keeping, equally so are the two following—viz., young fertile queens and new combs. After these four cardinal points come the questions of quantity and quality. The first of these is sure to follow when the foregoing essentials have been rigidly carried out. Quality ought to be the primary object, to obtain which there need be little or no sacrifice as to quantity by adhering to the rules I have so often laid down, and by taking the advice of "Felix" to study economy. Bee-keepers will at once recognise their true position on the question of profit and loss by keeping a strict account of expenditure and income, as well as proving that a first-class sample of honey or honeycomb is as easily produced as an inferior one. Finding a readier market and a higher price consequently is the thing that will place the higher figures on the right side of the balance sheet. Not only is it desirable, but it is absolutely necessary in many cases, to shift bees from one place to another, particularly to the Heather, even though it should be at a distance of 100 miles or more, where rail or steamer is available. There is a demand for Heather honey when white or Clover honey is unsaleable, and bee-keepers will naturally turn their attention to securing that which is in demand.

Whatever the advantages may be that we claim in double-cased and broad hives, these in some cases must be relinquished in preference to the more handy single-cased ones or the double-cased narrow ones, twelve of which occupy less space than a dozen of the double-cased brood hives will do. When we take into consideration

that hives of the narrow type cost on an average 5s. each in taking to and bringing from the Heather, the great saving effected will be apparent. The ease in handling is also sufficient for every one to adopt single-cased hives, which are easily protected during summer by mats suspended loosely on the sides and packed above with hay, or rather long grass, so as to encourage the filling of supers. Hives protected in this manner and covered on the top with a piece of oiled paper to throw off the rain cannot be surpassed by the more costly double-cased hives. Placed in a suitable bee-house or proper made outside cases, single-cased hives are in this way cheaper, more easily and better protected, and are easier of manipulation than the large double-cased ones. There are many more advantages that can be claimed for single-cased hives, which the bee-keeper will soon find out if he adopts them.

The yield of honey is greatly increased by husbanding and utilising comb from the preceding year, such as partly filled supers or combs in frames or straw hives built by condemned bees. It must be observed, however, that combs built the previous year, though filled rapidly by the bees, do not possess the same degree of purity as combs built the current year; for dripping or extracting purposes, so long as no brood has been reared in them, they are excellent. To maintain a good standard in the quality of honey the combs ought to be thoroughly sealed before dripping or extracting, and to obtain the greatest quantity a good supply of built-out combs should form part of the stock, obtained as mentioned above. Before removing to the Heather, adding young queens and joining two or more hives together will have the same effect; while the more empty comb the greater will be the ingathering of honey. Hives so treated will be in the best possible condition to stand the winter and commence anew as the days begin to lengthen, which has a positive beneficial influence on stocks by the necessary agitation in keeping up a uniform degree of temperature in carrying on the internal economy of the hive, even while the temperature stands at zero. It has always been observed that hives breeding early in January are more healthy than those that perforce have to delay till March.

The great question in successful bee-keeping is to keep strong hives, preserving them in that state by carefully avoiding everything that disturbs and causes loss of bee life; and the best way of securing that is to follow closely the foregoing instructions, and let all manipulations be as few and far between as possible. The fields furnish flowers and the honey which the bees collect; the more numerous these are in the hive the more honey will be collected and stored in the proper place. It is but a poor expedient having to invert hives for the purpose of getting supers filled, and points either to a poor district or something radically wrong in the management.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Benjamin Field, Swan Place, Old Kent Road, London.—*List of Horticultural Sundries.*

Hogg & Wood, Coldstream and Duns.—*Catalogue of Nursery Stock.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (C. E.).—We do not know a pronouncing dictionary such as you require. In the "Cottage Gardener's Dictionary," published at this office, post free 8s. 3d., you will find brief cultural directions, and the names of the plants are accented as a guide to the pronunciation. A temperature that does not fall below 48° will suit your Pelargoniums.

Cactaceous Plants (D.).—Write to Viccars Collyer & Co., Leicester, and to Mr Boller, Woodfield Nursery, Harrow Road.

Variegated Fern (J. G.).—The frond of *Pteris serrulata* is clearly variegated, and if the character is maintained and the plant grows freely it will be very attractive for table and other purposes of decoration. We have not seen an example in which the white is so pure.

Poinsettias Failing (J. L. E.).—As the plants were so sturdy and vigorous by being grown outdoors in the summer, we can only suggest that their failure to produce good bracts is the result of the plants being left out too long. When they remain in cold positions until the leaves droop, growth ceases, and the roots first become torpid, then shrivel or decay. If you examine the roots of your plants and they are dead or brown in colour, you may conclude we have either indicated the cause of the failure or you have given them an overdose of liquid manure. We feel confident the roots are not fresh and active, in which case it is impossible that large whorls of brilliant bracts can be produced.

The Trout Pear (B. D.).—Undoubtedly there is a Pear known under this name, that being a popular synonym of the Forelle Pear, which is described in the "Fruit Manual" as follows:—"Fruit medium sized; oblong obovate, but sometimes assuming a pyriform shape. Skin smooth and shining, of a fine lemon-yellow colour on the shaded side, and bright crimson on the side next the sun, covered with numerous crimson spots, which from their resemblance to the markings on a trout have suggested the name. Eye small, set in a rather shallow basin. Stalk an inch long, slender, inserted in a small shallow cavity. Flesh white, delicate, buttery, and melting, with a rich, sugary, and vinous flavour. An excellent Pear, in use from November till February. The tree is hardy and a good bearer."

Notes (An Old Subscriber).—We are obliged by your letter, which is one of several widely differing in tone. It is, we presume, not sent for publication, or it would illustrate what you very properly condemn. We coincide in your views on the main question, but if you could see what we do not print you would, perhaps, be more surprised than ever.

Mushrooms Outdoors (Scotch Mist).—The long lapse of time before Mushrooms appeared was no doubt mainly the result of the temperature falling too low after the mycelium had permeated the mass, or in other words after the spawn had run. Mushroom spawn remains quiescent for a long time under a low temperature, and does not appear to be materially weakened thereby. Beds that have been quite frozen in the winter have produced good crops of Mushrooms in the spring. It is evident the bed to which you refer was warm enough for a time or the mycelium would not have spread, but the temperature fell too low during the cold weather that followed for inciting the production of Mushrooms. If a thermometer laid on the surface of the bed or ridge under the covering registers 50° the interior will be upwards of 20° higher, and if the material be good and the spawn strong Mushrooms will push through the soil freely. Two works on market gardening are Earley's, which treats on outdoor crops, and Shaw's, which includes plant culture as well. The first is published at 170, Strand, London, the other by G. Routledge & Sons, Ludgate Hill.

Cutting Back Roses in the Autumn (H. G.).—Your plan of shortening the strong roots in November—that is, the long loose ends that have an untidy appearance, cannot possibly weaken the plants, but on the contrary, as you observe, it has a tendency to cause the lower buds to swell somewhat, and these buds have to be relied on for strong growth and fine blooms. If shortened too severely in the autumn these lower buds often start too soon in the spring and the young shoots are cut by frost, but as you say you have the growths about 3 feet long that is certainly not close autumn pruning. Many good growers both thin out weakly growths and remove the ends from the stronger in October with excellent results, as the strength of the plant is then not wasted on useless portions, while the growths left are assisted to ripen by being more directly exposed to the sun and air. It is a mistake to suppose that the sap in the ends of the shoots removed would, if they were left uncut, return to the roots during the winter and feed them. There is little or no nutrient matter deposited anywhere by the necessarily soft unripe ends of the growths, and what there is is secreted before the leaves fall in the wood and round the buds, chiefly remaining there for their nourishment. The method you adopt is, in our opinion, perfectly sound, and the excellent results you obtain suggest there is nothing to be gained by any departure from it.

Popular Roses (J. Melton).—If you mean by these, Roses that are the most generally grown for exhibiting, the following fifty Hybrid Perpetuals and twenty-five Teas and Noisettes will answer your purpose:—La France, Marie Baumann, A. K. Williams, Baroness Rothschild, Marquise de Castellane, Madame Gabriel Luizet, Charles Lefebvre, Captain Christy, Alfred Colomb, François Michelin, Etienne Levet, Duke of Edinburgh, Marie Rady, Louis Van Houtte, Dr. Andry, Marguerite de St. Amand, E. Y. Teas, Comtesse d'Oxford, Merveille de Lyon, Madame Hippolyte Jamain, Duchesse de Valmore, Horace Vernet, Madame Lacharme, Madame Victor Verdier, Marie Verdier, Fisher Holmes, Beauty of Waltham, Duke of Wellington, Pride of Waltham, Sénateur Vaisse, Camille Bernardin, Dupuy Jamain, Le Havre, Xavier Olibo, Comtesse de Serenye, Star of Waltham, Marie Finger, Abel Carrière, Eugénie Verdier, Mrs. Charles Wood, Général Jacqueminot, John Hopper, Ferdinand de Lesseps, Countess of Rosebery, Monsieur Noman, Edouard Morren, Prince Arthur, Duke of Teck, Ulrich Brunner, Duchesse de Morny, Teas and Noisettes—Souvenir d'un Ami, Maréchal Niel (N.), Catherine Mermet, Marie Van Houtte, Niphetos, Souvenir d'Elise Vardon, Jean Ducher, Innocente Pirola, Devoniensis, Caroline Kuster (N.), Rubens, Comtesse de Nadaillac, Souvenir de Paul Neyron, Madame Willermoz, Anna Ollivier, Etoile de Lyon, Alba Rosea, Perle des Jardins, Madame Lamhard, Belle Lyonnaise, Madame Bravy, Madame Margottin, Madame Angèle Jacquier, Madame Welche, La Boule d'Or.

Planting Marechal Niel Roses in Chrysanthemum House (Cambridge).—We presume you do not desire to cover the body entirely, but only thinly or partially, so as to admit light to Chrysanthemums in the autumn. This being so, we question if there is a better plan than that adopted by Mr. Gilbert at Burghley, which enables him to produce the greatest number of fine blooms, while at the same time admitting light to trees and plants. The Burghley example was alluded to as follows in March, 1892, by the writer of these lines:—"In one house Figs covered the back wall, with Maréchal Niel Rose on the roof in grand condition. We have seen many

remarkable examples of this fine Rose, one of them bearing three thousand blooms, but the Burghley specimen surpasses them all as a type of high culture. It is on the Briar, and fortunately worked low, as ought always to be the case when this Rose is worked at all. It is planted in the centre of the house and close to the front, horizontal main branches being trained right and left along the base of the rafters. These horizontal mains are the only permanent portions of this fine tree. At intervals of 5 or 6 feet wires are stretched up the roof, and to these are secured the flowering shoots; and it is to be particularly noted they are annual shoots—that is to say, as soon as the blooms are cut in May or June the growths are cut quite down to the base of the rafters. The roots being in rich soil and generously fed, strong growths start at once, and four or five of these are trained up each wire. They speedily reach the top, and are then shortened. These young growths are fully as thick as an ordinary pencil and many of them much thicker, while the foliage is remarkable for its size, substance, and deep rich green. One of the leaflets casually measured exceeded 6 inches by 5, exclusive of the footstalk. When it is remembered that every bud on wood thus prepared affords at least one flower, some idea may be formed of the pendent massive lines of golden blooms that must be produced. The effect cannot but be magnificent and worth a long journey to see. This is the simplest and best of all systems of growing the Marechal Niel Rose under glass. We have proved its value years ago and seen the plan carried out by others, but never so well as in the example under notice. The wires are placed at the distance stated, so that the Figs on the back wall received the light between the cordons of Roses. The stock of the Marechal, as is almost invariably the case, has increased much faster than the Briar. This is the cause of the death of many fine plants, or rather trees, when budded high, but worked low the junction can be covered with soil. This is what has been done at Burghley by packing a wall of turves round the stem after a sharp knife has been drawn down the Briar portion, cutting quite through the bark, and it is expected the health and vigour of the specimen will be maintained. The roof under which this Rose is trained is 30 feet long by 18 or 20 deep. Worthy of record as are many doings at Burghley, not one is more worthy than this splendid instance of Rose culture." To that it is only necessary to add, if you wish to have wires covered with growths as quickly as possible, you had better plant one Rose for each wire. If you commence at 2 feet from the ends of the 24-feet compartment you will have space for three wires on each side with intervals of 8 feet between them. In the other compartment you can either have two wires up each side at wider intervals than stated, or three a little closer; or either ten or twelve plants altogether. In this way you might grow numbers of Rose blooms without materially depriving Tomatoes of light in the summer or Chrysanthemums in the autumn. You ought to have very strong plants of Tomatoes by the first week in May. The soil for the Roses cannot well be too rich, and the plants should be pruned quite closely after planting. Many Marechal Niel and other Roses are ruined by having long shoots before root-action is powerful.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (J. W. H.).—The portion of fruit sent is of the Forelle or Trout Pear. See reply to another correspondent. (C. W.).—1, not known; 2, Comte de Lamy; 3, Bergamotte de Jodoigne; 4, Maréchal de Cour. (Slinketh).—1, General Todleben; 2, Doyenné Goubault; 3, Golden Reinette; 4, Scarlet Nonpareil; 5, Adams' Pearmain. (James Pound).—5, Beurré de Jonghe; 10, Ne Plus Meuris; 16, Duchess's Favourite; 19, Striped Beefing; 22, Claygate Pearmain; 23, not known. (J. T. S.).—1 and 2, Beurré Diel; 3, not known, worthless; Apple, Golden Russet. (Walter Kruse).—Prince Albert.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A. Ratty).—1, *Zygopetalum Mackayi*; 2, *Hedychium Gardnerianum*, which can be grown in a good compost of loam and old manure in an ordinary stove, though it succeeds very well in a greenhouse during the summer.

COVENT GARDEN MARKET.—DECEMBER 2ND.

TRADE very quiet. Heavy supplies of Grapes making exceptionally low prices. Large arrivals of Nova Scotia Apples at lower rates.

FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples	½ sieve	1 0	to 3 6	Oranges	100	0 0	to 0 0
" Canadian ..	barrel	10 0	15 0	Peaches	per doz.	0 0	0 0
" Nova Scotia ..	"	10 0	12 6	Pears, kitchen ..	dozen	0 6	1 0
Cobs, Kent	per 100 lbs.	22 0	25 0	" dessert	dozen	0 4	1 6
Figs	dozen	0 8	0 9	Pine Apples English ..	lb.	2 0	0 0
Grapes	lb.	0 6	2 0	Plums	½ sieve	0 0	0 0
Lemons	case	15 0	21 0	St. Michael Pines ..	each	1 6	5 0
Melons	each	1 0	1 6				

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes	dozen	1 0	to 0 0	Lettuce	dozen	1 0	to 1 6
Asparagus	bundle	0 0	0 0	Mushrooms	punnet	0 6	1 0
Beans, Kidney	lb.	0 3	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red	dozen	1 0	2 0	Onions	bunch	0 3	0 0
Broccoli	bundle	0 9	1 0	Parsley	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	2 6	3 0	Parsnips	dozen	1 0	2 0
Cabbage	dozen	0 0	1 0	Potatoes	cwt.	4 0	5 0
Caulicums	100	1 6	2 0	" Kidney	cwt.	4 0	5 0
Carrots	bunch	0 3	0 4	Rhubarb	bundle	0 4	0 0
Cauliflowers	dozen	2 0	3 0	Salsify	bundle	1 0	0 0
Celery	bundle	1 6	2 0	Scorzoneria	bundle	1 6	0 0
Coleworts	dcz. bunches	2 0	4 0	Seakale	per basket	2 0	2 6
Cucumbers	each	0 3	0 6	Shallots	lb.	0 3	0 6
Endive	dozen	1 0	2 0	Spinach	bushel	2 0	4 0
Herbs	bunch	0 2	0 0	Tomatoes	lb.	0 4	6 0
Leeks	bunch	0 3	0 4	Turnips	bunch	0 4	0 0



PLOUGHING IN GREEN CROPS.

"In your issue of October 8th, page 329, I notice it is stated with respect to green manuring that a green crop of White Mustard contains per acre half a hundredweight of phosphoric acid, a hundredweight of nitrogen, and a hundredweight of potash; and that by ploughing in two successive crops the second crop adds considerably to the rich store of fertility already obtained by the first crop." Thus writes "Auricula;" and he adds, "I shall be glad to learn from whence the phosphoric acid and the potash are derived. If from the earth, then in ploughing in the crop you return to the soil only that which has been taken out of it." To this we might be content to reply that phosphoric acid is a compound of one atom of phosphorus with fifty-nine of oxygen; that the affinity of potash for oxygen is very great, and that out of 100 parts of the composition of plants upwards of forty parts are oxygen derived solely from the air and rain, and, therefore, that the ploughing-in of green crops is something more than "a return to the soil of that which has been taken out of it." But the query of our correspondent is by far too important to be dealt with thus summarily, and we gladly seize the opportunity to enforce strongly upon our readers the importance of a clear knowledge of the influence of natural laws upon our work of cultivating the soil.

Fixed natural laws influence the phases through which the plants of the farm pass to full development. Of the four organic elements of our green crops three are always present in almost invariable proportions. These are oxygen, hydrogen, and carbon. Taking 100 parts of the composition of the plants of green crops we find that 93.55 parts consist of oxygen, hydrogen, and carbon, and they are all derived from the air and rain. Pray try and grasp the full significance of this wonderful fact, and you will then see how the gases of air and rain, in combination with other elements of fertility drawn from the soil, combine to develop and store in stem, branch, leaf, flower, and seed a rich store of nutriment, much of which enters the soil when we plough in a green crop. No doubt it is the general inattention to the influence of air and rain upon plant growth that tends to hinder the full recognition of the value of green crops as manure, and yet it is constantly before our eyes. Said a worthy farmer to us once, "I have frequently noticed that when a heap of Turnip tops is left to rot upon the soil there is sure to be a patch of growth there of a deeper hue and more robust growth than elsewhere in the next crop." Yet he had not been able to comprehend and apply to practice this plain teaching of Nature.

It is, however, by no means intended to infer that because the gaseous elements of the air in combination with heat contribute so largely to the substance of plants that the other elements are unimportant. Take, for example, two plots of poor land. Let them both be well stirred and sown with Mustard seed; leave one plot then to mature. Sow upon the other nitrate of soda at the rate of a hundredweight an acre, and mark the difference. The nitrogenous manure acts like a charm, causing the elements of fertility in air and soil to blend in happy combination, and the result is vigorous robust growth, in striking contrast to the comparatively puny growth upon the other plot. That this single application of nitrate of soda is sufficient is shown when we plough in the green crop and sow another. A yet stronger growth follows, telling us plainly that of all the elements of plant food necessary to insure robust growth nothing is wanting, the decay of the first crop in the soil storing it with nutri-

ment. This fact is, perhaps, the best answer as to the value of ploughing in green crops. Agricultural chemistry is apt to be considered a dry subject, but let farmers only be made to see that the study of it confers knowledge and an insight into natural laws leading to results that are literally golden, and surely they will not be slow to acquire such knowledge.

A disadvantage attending the use of artificial manures is slowness of action, but a soft green plant is comparatively so soluble that the elements of fertility are soon set free and are quickly available for plant food. Nor must we overlook a still more important consideration, and that is the economy of the process. Undoubtedly pure artificial manures mixed on the farm are preferable to farmyard manure on the score of economy, but green-crop manuring enables us to avoid manure bills, the only outlay being the cost of labour in ploughing and sowing. Doubtless this fact will tend to enforce attention being given to it more than anything else can do, for in the present agricultural depression we are bound by stress of circumstances to practise rigid economy. We are also bound to render and keep the soil fertile, our aim also being to see if by superior cultivation it is not possible to wrest something more from the soil, to improve the quality as well as increase the bulk of our crops. Depend upon it the ploughing-in of green crops is a step in the right direction. To all doubters we say, Give the matter a fair trial next season. If you have land foul with couch grass watch for the first opportunity of stirring and clearing it in spring, then sow it with White Mustard at the rate of 20 lbs. of seed per acre; if poor, give a dressing of nitrate of soda, plough in the Mustard as soon as the plants are in full flower, and your land clean and fertile will be ready for a crop that will pay.

WORK ON THE HOME FARM.

Fine open dry weather has been turned to account for corn-threshing, and the work has been done well and quickly. All straw left in the open air has been carefully stacked and thatched at once. No slovenly leaving about of straw heaps should ever be passed; this is a matter that has given us some trouble—so, too, has the too common tendency to leave implements about exposed to the destructive action of the weather. It should be an inflexible rule that no tools or implements should be left out after each job of work is done. Cleaning and painting should also be done in time. A man who is careful in such thin s will generally be found worthy of trust in others. Look well to water furrows on fresh ploughed land. As the ploughing or sowing of each field is finished the water furrows should be continued with a spade into the nearest ditch. Some judgment is required in the making of water furrows, especially on hill farms, serious injury frequently being done during heavy rain or in a thaw after snowstorms. It is bad practice to make water furrows from top to bottom of long slopes. The correct line to follow is a gentle diagonal one across the slope, and there should be enough of such furrows to prevent any serious surface washing. On open mixed soils very little care is required; but there must be plenty of well-arranged furrows on heavy land and close silicious soils. See that the outlets of drains and all watercourses are open, and arrange that there shall be a regular periodical inspection of such places, as well as of pond banks. Upon one of our home farms we have several ponds down a valley that at one time were a source of annoyance from fractures in pond dams at flood times. We soon learnt the importance of making substantial dams high and wide, with a safety opening at what may be termed high water mark with a special channel to take flood water. Such work must be well done. Once get a fissure in a bank, a loose stone or two in a cascade, and down may go bank or cascade during some flood time in winter. Two seasons of severe drought have given point to the importance of water storage at this season of the year for cattle in summer. There are few farms where such storage may not be managed. We recently heard a complaint that a piece of land could not be drained because it was so low in the middle of it. We at once said, Excavate a pond in the low place, drain into it, and you relieve your land of water and provide a store of it for summer.

NITROGEN IN THE SOIL.

EACH of the elements required for building up the frame of animals and plants is of equal importance from a scientific standpoint, but in agriculture the various salts and substances which yield food for crops or for cattle must necessarily be valued according to their cost. There are exceptions to this rule, no doubt. Gypsum is a cheap manure, but it has sometimes doubled the Clover crop, and kainit salts are comparatively cheap. Yet for some crops, especially Potatoes, in cases of a deficient supply of potash in the soil, they have sometimes proved invaluable. In general, however, cost and efficiency are closely associated, and as plants and animals are almost alike in their chemical composition the same rule as to

the value of their constituents holds good. You may purchase starch and the carbo-hydrates at a much lower rate than the nitrogenous substances in food. Turnips, Bread Fruit, and Bananas, consisting chiefly of carbo-hydrates, are sold by their respective growers at a very different and much lower price than milk or Peas, which are rich in albuminous elements. In every form nitrogen is always comparatively costly. The albumen in eggs, the fibrine in cereals, the casein in milk, and the legumin in Peas and Beans, all owe their importance and cost to this particular element, which is the source of force and vigour, of the labour of the hardest-worked cattle and men, of lean meat and muscle.

Considering the limited supply of nitrogen and the cost of obtaining it, it is not surprising that it should often be present in cultivated soils in quantities insufficient for a full crop, and that the land, when dressed with salts of nitrogen, should answer to their touch as a horse does to the spur. In the Rothamsted experiments the unmanured field yielded for years about 14 bushels, or half a crop, till a dressing of nitrogen was given to it, when immediately the crop was doubled, nitrogen having been, as it often is in clay soil, the one thing needful to a full crop. Sir John Lawes has been sometimes asked by American farmers how to restore the exhausted fertility of their fields, so that the land, yielding 14 bushels per acre, which is about the average of corn-exporting countries, might be induced to return twice as much. It is fortunate for English farmers that Sir John can only send advice into the far West; he cannot send nitrogen.

Some years ago the agricultural community was flattered by the immediate prospect of a never-failing supply of nitrogen. The marvels of chemistry and analysis had recently been unfolded by the writings of Sir H. Davy and Baron Liebig, and the efficacy of guano had accustomed farmers to the new method of supplying nitrogen to the land in concentrated forms and from sources outside the farmyard. Then came the promise of obtaining nitrogen from the atmosphere. The agricultural classes are rarely much moved by anything but bad weather and falling prices, and the chemists had explained to them that the nitrogen of the atmosphere, existing as it does in a free state mixed with oxygen, was not available for agricultural purposes. If it could be induced, they were told, to enter into combination with hydrogen the result would be ammonia, an invaluable manure. This was understood by farmers, and a great sensation was occasioned among them when Mr. Nasmyth, the inventor of the steam hammer, proposed to control the supply of the most costly of plant constituents by knocking it out of the atmosphere. It is easy to see that if Mr. Nasmyth had succeeded in knocking nitrogen and hydrogen into combination at a moderate cost, a revolution in the price of manures and of food must have speedily occurred.

But as the plan failed and as plants still "live and move and have their being" in the midst of an element which they cannot feed on, it was certainly surprising to learn lately that nitrogenous manures had ceased to produce their accustomed effect. The phenomenon occurred at the Duke of Bedford's experimental farm at Woburn, where, according to official statements, the yield of Wheat manured by the dung of animals fed on Maize proved as abundant as the crop which followed from manure produced by the feeding of cotton cake, which enriches the excreta with far more nitrogen than that produced by feeding Maize.

The Woburn experiments were instituted by the Royal Agricultural Society, and were placed under the management of its chemist, the late Dr. Voelcker, for the purpose of testing the value of manure obtained by the consumption of different kinds of food and to compare the effects of such manures with those of artificial manures. It is evident that in such a comparison the land to which the various fertilisers were applied should have been of similar quality. But there are other disturbing causes which may vitiate experiments of this kind, and these were not at first generally recognised. The mistake occurred in some rotation experiments, in which the manure derived from cotton cake containing about 40 per cent. of nitrogenous constituents was compared in its results with that obtained from Maize, a cereal containing only 10 per cent. of albuminoids. The results of these experiments were known to the agricultural community before the report of Dr. John Voelcker, who has succeeded his late father as chemist to the Royal Agricultural Society, had been made, and much surprise was expressed that at the close of the second rotation the cotton cake had not shown any decided superiority over the Maize. It has been recently explained in an official report on the "Objects, Plan, and Results of the Woburn Experiments," that this was "probably due to the large amount of unexhausted manure in the land." Before commencing experiments, therefore, on the comparative value of manures the land should be exhausted by repeated scouring crops, as at Rothamsted, where in some cases the deep-rooting Bokara Clover has been grown for the special purpose of reducing the fertility of the soil to nil.

It has long since been established that nitrogen is neither absorbed by plants from the atmosphere nor conveyed into the soil to any appreciable extent in any way except by the direct application of manure: still there are some crops which collect nitrogen and leave the surface soil richer than before. Red Clover is usually grown as a preparation for Wheat, and although Clover hay must necessarily withdraw a great deal of plant-food from the soil, it does not prove exhaustive in practice, because the deep and fleshy roots of the plant collect nitrogen from the subsoil and, in their decay, supply it to the growing Wheat crop. Under such circumstances a strong nitrogenous manure may not be required, and may perhaps prove less desirable than a weak manure containing less nitrogen. Enough has been said to show that the field experiments which are now becoming popular, and which are being instituted at many "stations" throughout the country, will require great care and the supervision of managers who possess a competent knowledge both of "practice and science."—H. E. (in *Nature*).

MESSRS. WEBB & SONS' STAND AT THE BIRMINGHAM CATTLE SHOW.—A magnificent trophy of farm and garden produce, grown from Webb's seeds, occupies the centre bay of the gallery, and a finer display could scarcely be imagined. It formed a leading feature of the Show, and the Prince of Wales, who made a careful inspection of it, was pleased to accept a handsomely bound catalogue of Webb's seeds. A choice collection of roots grown on the Royal farms at Sandringham was a great attrac-

tion on this stand. Equally good are all the other exhibits, but space will only allow a reference to the most important. The Imperial or "Great" Swede is to the fore, and the specimens are, as usual, of that marvellous quality which has enabled it to carry off in strong competitions the champion honours in the open class at this Show for fourteen successive years. The Mangolds are also good, including Webb's Champion Globe, Mammoth Long Red, Yellow-Fleshed Tankard, Intermediate, &c. Varieties of common Turnips are also choice, and, as well as the other roots, fully maintain their high-class character, showing the advantages derived from careful selection at the Kinver Seed Farms, said to be the largest in the kingdom. All the popular Potatoes are also shown, as well as several choice new seedlings. Wheats, Barleys, and Oats next claim attention, and their remarkably fine quality is very apparent. Webb's Challenge White Wheat, Kinver Chevalier Barley, Black Oat, White Oat, Kinver Giant Wheat, and Golden Grain Barley have become exceedingly popular. Grass seeds for all soils, of which both purity and growth are guaranteed, are represented by a splendid collection of natural and other grasses grown at the experimental farm. Fine specimens of vegetables were exhibited.

MESSRS. HARRISON AND SONS' ROOT SHOW.—The annual exhibition of roots, &c., grown from seed supplied to customers by Messrs. Harrison and Sons, seed growers and merchants, Market Place, Leicester, took place in the recently added portion to the old premises of the firm, at the latter end of last week. The exhibits consisted of some exceedingly well-grown specimens of Mangold, Cabbage, Potatoes, Seeds, Grasses, and other farm produce. The greater portion of the Show was occupied with the leading varieties of Normanton Globe Mangolds, Defiance Swede Turnips, Champion Ox Cabbage, Giant Red Mangolds, Giant Kohl Rabi, Devonshire Greystone Turnips, Improved Green Barrel Turnips, Potatoes, &c. Amongst the prominent exhibitors were H.R.H. the Prince of Wales, with Mangolds and Swedes grown on the Royal Farm at Sandringham; the County and Borough Asylums; the Corporations of Birmingham and Northampton; T. T. Paget, Esq., M.P.; the Earl of Gainsborough, Exton Park Farm; the Hon. Tyrwhitt Wilson, Keythorpe; Rev. F. Morgan Payler; Mr. J. H. Cooper, Glenfield; Mr. S. Singlehurst, Kingston; Mr. T. Mayn, Burton Overy; Mr. J. German, Ashby-de-la-Zouch; Mr. Jos. Wilson, Aylestone; Mr. A. C. Barclay, Scraptoft Hall; Mr. E. L. Driver, Elmsthorpe; Mr. H. R. Parker, The Temple, Rothley; Mr. J. Glover, Kilby Grange; Messrs. Rayns, Barwell; Mr. J. Swinfen, Dunton Bassett; Mr. W. Blastock, Rowley Fields; Mr. W. Everard, Narborough Wood; and other local growers; while specimens were also sent from the counties of Rutland, Lincoln, Warwick, Norfolk, York, Derby, Stafford, and Suffolk. The few Carrots and Parsnips were staged by Mr. Barclay, of Scraptoft; monster Ox Cabbages by Mr. Everard; and highly coloured Red Cabbages by Dr. Higgins. Capital Savoy were contributed by the Prince of Wales and Dr. Finch; some good Intermediate Carrots by Mr. Cooper, of the Albert Inn, Humberstone Road; Onions, Celery, and Potatoes by Mr. T. T. Paget; and a very large Vegetable Marrow by Mr. Swinfen. The new vegetable, named Chou de Burghley—a cross between a Cabbage and a Cauliflower—was exhibited. A number of varieties of Potatoes, including the Magnum Bonum, was forwarded by Mr. Sutton of Birstall, and Mr. Barclay. Messrs. Harrison also exhibited many sorts of tubers grown on their farm, amongst which were specimens of the new English Potato, "The Emperor," described as "an enormous cropper, large, white flesh, late keeper, and disease-resisting." The Show was very numerously attended.—(*Leicester Journal*.)

OUR LETTER BOX.

Foot Rot in Sheep (W. K.).—Sheep affected with footrot should first have the feet carefully washed, all broken parts cut clean off with a sharp knife, and the part affected with rot dressed with Gell's footrot ointment to be had from any chemist. Repeat this twice weekly, remove the sheep to some fresh land or pasture, and you will soon cure them. A ewe is twenty-one weeks in gestation—that is to say, from the time of conception to the birth of the lamb.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barome- ter at 324 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min	In sun.	On grass.		
1885.		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
November.											
Sunday	22	29.501	41.6	41.3	N.E.	40.8	47.9	36.4	55.2	32.0	0.013
Monday	23	29.515	40.3	38.9	N.E.	41.4	43.2	39.3	50.6	38.1	0.091
Tuesday	24	29.493	39.8	39.2	S.E.	41.2	42.1	36.8	44.3	26.7	0.614
Wednesday ..	25	29.374	43.9	43.9	E.	41.7	49.2	38.8	51.6	38.5	0.358
Thursday	26	29.451	45.7	45.6	S.E.	43.2	53.7	43.6	64.4	43.4	0.684
Friday	27	29.452	49.8	46.6	W.	44.6	52.6	45.7	70.6	44.7	0.237
Saturday	28	29.270	51.4	51.2	S.W.	45.2	58.0	49.0	61.6	41.8	0.157
		29.437	44.6	43.8		42.6	49.5	41.4	55.5	37.9	2.154

REMARKS.

22nd.—Cloudy, with occasional slight showers.

23rd.—Fine, but scarcely any sunshine.

24th.—Very wet all day.

25th.—Fog in morning; showers in afternoon.

26th.—Dull early; gale and heavy rain from noon.

27th.—Sharp showers about 8 A.M., afterwards fine and warm. Shooting stars very numerous in the evening; about 8 P.M. they were falling at the rate of more than three thousand an hour. This shower was expected, its arrival having been calculated from the data for Biela's comet.

28th.—Gale and heavy rain early; fine day.

Excepting perhaps the middle week of September this is the first week since July in which the temperature has reached its average. It has been a warm, damp, and very rainy week.—G. J. SYMONS.



COMING EVENTS

10	TH	Royal Society at 4.30 P.M.
11	F	Quekett Club at 8 P.M.
12	S	Royal Botanic Society at 3.45 P.M.
13	SUN	THIRD SUNDAY IN ADVENT.
14	M	Royal Geographical Society at 8.30 P.M.
15	TU	
16	W	Society of Arts at 8 P.M.

THE APPLE ON LIGHT SOIL.

MOST observers must have been struck at the extending taste for articles of consumption which, up to a period very close to the present, were confined to a comparatively limited class, but which are now the everyday want of the many. As more particularly peculiar to our own special employment the wonderful development of the taste for the Tomato and the increased consumption of Grapes may be mentioned as well-known instances. The Apple is also attaining a rapidly increasing consumption, especially among the middle classes, but also among the working classes. The fruit imported from the United States and Canada, and the reasonable prices at which that fruit is purchaseable, has doubtless been the chief cause of the Apple becoming necessary in so large a number of homes.

The point which producers have to aim at is to see that a taste which has been created and which will increase year by year has the means of satisfying its demands. There are at the present time sufficient Apple trees in the country to go a long way towards satisfying these demands, but unfortunately the great majority of trees of a productive size are of varieties which are deficient in the size or quality of fruit, often uncertain croppers, and large numbers too old. I do not think I am exaggerating the state of things in private gardens in saying that for every tree of a variety meeting the requirements of a good Apple, there are at least a dozen which are practically valueless. In provincial market gardens the same state of affairs holds, with the result that fruit retailers are obliged to place their orders for foreign grown produce. The remedy for this state of things would be simply to take out the old trees and plant good sorts, but the country is going through a revolution at the present time, which, though quiet, is none the less sure, and the result is that occupiers of market ground are chary about investing in a property which would take a few years to make good their outlay and secure a profit. A grower under three landlords told me the other day that though he fully recognised the future there is for the Apple as a popular market fruit, he was afraid to make any investment until he saw how things would turn, and as a matter of course landowners are equally shy of entering into costly investments.

If ever allotment farming—gardening were the better name—becomes the national undertaking its promoters expect it to be, the cultivation of the Apple must in suitable soils and climates become one of the best paying crops which will be grown, but in order to make it pay sorts alone which have been tested must be planted. In our northern climate there is no Apple which I am acquainted with that will pay to grow for dessert. These are either too uncertain croppers or do not grow large enough. We are, therefore, restricted to culinary sorts, and of these the only certain croppers are kinds which must be used before January. Of course there are plenty of good later kinds which meet the requirements of home use, but size for market is now an all-important

matter. *Mère de Ménage* is the only Apple which I should be inclined to recommend as a later variety which is at once a constant cropper, profitable as to quantity, and the whole of the fruit of a good size. But I am afraid a good climate will be found indispensable for it.

Since I have taken any great interest in the Apple it has happened that the soil in which I have been obliged to study its peculiarities has always been of a "light" character, so that I can only speak of it under that limitation. However, as the constituency of the Journal will include a very large proportion of gardeners similarly situated, the result of that limitation may not be of so much consequence. The main points of general interest which I have found about the Apple on light soils are—first, the necessity of deep cultivation; second, the necessity of good feeding; third, the great influence of stock to the advantage of the Crab or free; and fourth, the necessity of strictly limiting the varieties to those suitable for light soils.

Enlarging on these four points I have found that Apples planted on shallow soil have been unredeemable failures, and that those which have a deep root run 30 inches in depth have succeeded very well. The drought of the past summer, so fatal to the size of fruit in many gardens, has had little or no practical effect in ours, and that more especially where the ground had been lately enriched. Of course it is quite the thing to say in regard to this matter, Keep the roots near the surface; but under ordinary circumstances to keep roots near the surface in the case of soils such as those under consideration is simply to court failure. I have nothing to say against those who have the means of supplying water to the trees in dry weather, dispensing with other than mere surface cultivation, and I may go a step further and admit that fruit grown under such conditions will be better coloured than those which have been grown in a deep soil. But what I want to show is this, that under the circumstances under which gardening is carried on, and in the great majority of gardens, deep cultivation, so that the trees may have a root run away from the effects of local climatal influences, is simply a necessity. I have found also that the roots have no tendency to run out of the cultivated soil when it is cultivated deeply enough. Trees root-pruned seven years ago were this year found to have extended the roots made since then, not downwards, but into the good soil.

This brings us now to the second point—the necessity of good feeding. Deep cultivation does not always insure good feeding. Deep cultivation may improve the soil, aerate the soil, and make it of a kindlier nature, but it will not give the trees any more food—at least, not to an appreciable extent. Feeding material the cultivator must supply. The best material, and at the command of every gardener if he likes to look after it, is decayed garden rubbish. This is easily brought into a fit condition to use. Our plan is to make up a heap annually of about forty loads. This is composed of all the decayed vegetables, ashes from fires, leaves, and the general rubbish constantly accumulating in gardens, and after it has lain twelve months it forms a heap of compost which is of the greatest value. This should be laid on at the rate of from 9 inches to a foot thick and mixed with the soil as the ground is being trenched. When the trees are being planted more may be employed—in fact, too much of it can hardly be made use of. But beyond this a coating of dung is required over the roots of trees annually. When roots are near to the surface it must not be dug in, but where the roots are out of the way digging it in will do no harm. Cow manure is the best to use. I have found the removal of soil from above the roots, and a thick layer from the rubbish-heap compost forked into the soil, work wonderful improvement in the strength and vigour of heavily cropped trees.

Then with regard to the stock. I do not find the least difficulty in producing fruit on small trees on the free stock.

I have had crops on two-year-budded trees, and although such small trees may only bear from two to six fruits, I think it gives to young trees a fruitful cast to allow them to bear from the very beginning. Some sorts, if healthy, invariably form fruit buds on the same growths which bear fruits, and the necessity laid on young trees to provide for the finishing of fruits would appear to cause the formation of a greater number of fibrous roots than would otherwise be the case. In light soils canker is the worst enemy to keep under, and as a rule the Paradise stock makes no headway against canker in light soil. By the simple process of lifting young plants biennially for the first six years of their existence, and shortening back on these any gross-growing roots, the trees may thereafter be left to themselves for several years.

Then as to the sorts to grow. The two Congresses that have been held have helped greatly to show what are the kinds which are most reliable. It does not follow, of course, that we must rest our judgment entirely on what is seen at these exhibitions, but anyone who has had a few years' experience with Apples—that is to say, if he has been interested in his work—is sure to have had some enlightenment on what is one of the least of the accomplishments of the general gardener—a knowledge of Apples. Taking those Apples which are certain croppers, produce fruit of a good size, and the trees healthy and not subject to canker in a harmful degree, I have found the following all that can be desired. I take cooking sorts first. The earliest is Early Julien, grown largely in Scotland as Tam Montgomery, also very often as Juneating. This, as a rule, bears very heavy crops, the tree healthy and not a great grower, and the fruit excellent for cooking, sometimes, as at Edinburgh last September, shown successfully as a dessert kind. Duchess of Oldenburgh also does extremely well with us, making a strong upright growth, and always crops well, though not heavily. Keswick Codlin is still one of our best Apples. On trees which are not too old the fruit is good as to size, and as a cropper it is, of course, first-rate. Lord Suffield we are not increasing, though the stock is not allowed to get down. With us the tree is unhealthy, owing, I imagine, to a tenderness in its constitution. Very often also the fruit is much spotted. The Old English Codlin, erroneously named in many places Dutch Codlin, does extremely well as a large standard tree. As a dwarf it does not crop so well, and we should hesitate to plant it in walled gardens. Nelson's Codlin is very prolific, well worth growing in Scotland. In good seasons, when well ripened, it is good enough for dessert. The fruit keeps well with us till after Christmas.

Ecklinville Seedling all Scotch gardeners look upon as a friend. It is very common, always crops, and the fruit is always of a good size. It does not do well with us on the Paradise but splendidly on the free stock, and though subject to canker, its free habit of growth compensates for any drawback on that account. The shoots, though strong, should not be much shortened back, as these produce fruit buds their entire length, and I find it a very good plan to keep cutting the older branches as they become overcrowded, so that these younger ones may have room to take their places. With us this is a November Apple. Succeeding it as to time of using, but a finer Apple, is Warner's King, a sort of many synonyms. I have seen it as Hawick King, Howick, King of British Apples? Nelson's Glory, Nelson's Victory, Drumlanrig Castle, Barker's Seedling, and Cobbett's Fall, and doubtless many more are attached to it. We have about three dozen bearing trees of this Apple, and find them generally of the healthiest type, though the oldest canker rather badly. Though not a large-growing tree, its growth is very vigorous in a young state. With Lord Derby and Gloria Mundi it divides the honour of being our largest Scotch fruit, and as a rule it is the largest. All the fruit is of a large size. Cox's Pomona, though not of the largest size, is always a good cropper, the fruit handsome, and the tree healthy. We use this variety in December. In good seasons it may be used for dessert.

Stirling Castle is another of those Apples which have earned the gratitude of all gardeners. With us it has one fault—that it fruits so freely as to stop wood growth. The only plan is to feed well and leave as much wood as can be left. We use it in December. Rymer, though it cannot be always depended on to crop, is at the same time too good to be left out. The tree is of a strong spreading habit of growth, and in most seasons is a very heavy cropper. It does best here with the centre of the tree kept well cut out, as also all the older branches and young ones left to take their places. It is in use in January. Following in the season of using comes Kentish Fillbasket, one of our most reliable sorts, though the tree is somewhat subject to canker. Mère de Ménage is one of our best varieties, and does capitally in our light soil, bearing every year, and the fruit always of good size and of a fine colour. The tree is of spreading habit, healthy, and not of a large growth. The fruit is almost without core, and contains more useable material within the skin than any other kind I know. Northern Greening is a very large cropper, and being a rather poor grower requires liberal treatment. The fruit is of medium size, and one of the best cooking sorts. Such well-known varieties as Cellini, Hawthornden, Blenheim Pippin, and Dumelow's Seedling (Wellington) canker so badly as to be worthless. Other kinds, as the Dutch Codlin and Catshead, grow too large for a garden; and many others, as Striped Beefing, Emperor Alexander, and Yorkshire Greening are too shy croppers; Bess Pool is sometimes good, but very uncertain.

Good dessert sorts are not numerous here. Margaret and Irish Peach are the two best earlier sorts. Yellow Ingestrie, often grown under the name of Golden Pippin, is very good. Reinette de Canada is very fine just now. Steward's Seedling, dubbed worthless at the Chiswick Congress, is the most profitable of market Apples. This is the greatest cropping Apple I know, and when ripe very sweet; an October fruit. Cornish Aromatic is also a great cropper, and very good for Scotland. Golden Winter Pearmain, one of the best, but extremely bad with American blight; Adams' Pearmain, a large and certain cropper, which needs a good season; Claygate Pearmain, very good; Cambusnethan, a very good Scottish Apple, Duke of Devonshire, certain and good; Old Scarlet Nonpareil, also very good. Fearn's Pippin and Court Pendu Plat are two of the best late varieties.

We grow many others, but for various reasons I do not name them here. The above are all grown in the open garden, very superior fruit being obtainable from walls, but the fruit is not so well flavoured. I may just add that these are selected from a hundred picked sorts, and we have fifty others under trial, but we in every case depend on a few varieties of which we have a number of trees for our supply of fruit.—B., *East Lothian*.

ALLOTMENT CULTIVATION.

"POLITICS, politics, politics—nothing but politics. I shall be glad

'When the hurlyburly's done,
When the battle's lost or won.'

So that we may all get settled down again to more congenial work. But nobody can shut his eyes to the fact that the present election is destined to bring under allotment cultivation, and consequently horticulture, a vast amount of land which is at present agricultural. Both parties are bidding for votes on these principles, so that throughout the kingdom it must be a great question as regards disposing of the vast amount of extra produce or to find a market at remunerative prices."

Thus writes our correspondent Mr. Hiam in excuse for the delay that has occurred in sending notes on the canker of fruit trees. These notes will be found in another column. Important as that subject may be, the one alluded to above is of far greater moment. There cannot be a doubt that an increase in small allotments of land will follow the late "hurlyburly"—not by "compulsion," but by the far better way of willing concession on the part of proprietors of estates. We know of landowners perfectly ready to grant small plots of ground to cottagers who are able and willing to cultivate them to their own advantage. We should rejoice if every man

who can do that shall have the opportunity afforded him. But it must not be supposed that the mere granting of allotments to every person who has a fancy for a "bit of land" will transform this country into an arcadia. It is not the allotment as such, but the labour and judgment of the man that tills it, that will render its acquisition of value.

In numbers of parishes in the kingdom small allotments of land have been plentiful for generations, and thousands of persons have been benefited thereby; but, on the other hand, the fact must be acknowledged, simply because it cannot be ignored, that in instances innumerable the plots have been of no service to the holders of them, because the land has not been properly tilled and cropped. One man will live where another will starve in this as in other vocations. The industrious and thrifty succeed, the loiterers and the careless fail, and there is unfortunately a considerable percentage of these in every community. It is no secret that many holders of allotments have failed to cultivate them remuneratively, and it is to be feared that these failures have had an influence, perhaps too great an influence, in limiting the granting of land in small plots to the working classes, for it cannot be otherwise than regrettable that the industrious and thrifty should be prevented from investing their labour in land because of the shortcomings of the thoughtless and less enterprising amongst them. It is, however, not at all unlikely that a new start will be made in the letting of land in small parcels at a rent not exceeding that for larger tracts; and well-meant advice will be tendered to the tillers to abandon old notions of growing corn and Potatoes in favour of green vegetables for sale.

It is easy to eliminate strings of figures from "Covent Garden prices" published in the newspapers, which show in an apparently conclusive manner how profitable vegetable culture must be; but such figures by no means represent the amount that can be realised in small isolated plots. It can pay no one to send small consignments of vegetables to London or other large vegetable markets. It were as vain to convey the water supply to great towns in buckets as to send garden produce in dribbles from miniature allotments. What may be termed the garden culture of parcels of land of a rood more or less can only be profitably conducted near towns when the cultivators make arrangements with hotel managers, boarding-schools, or small greengrocers to take the produce as it is ready for gathering. This often answers the purpose of retail vendors, as it prevents the necessity of their going to the wholesale markets for what they require; but even to retain a connection of the kind indicated the supplies must be regular, as greengrocers in towns cannot afford to tell their customers to wait till supplies come in.

In suburban localities small plots of land may be turned to excellent account, not only in growing vegetables, but various kinds of popular hardy flowers, for which there is such a great demand; but it is entirely another matter in the case of allotments in obscure country villages, miles, it may be, even from a small market town, and it is precisely in those thinly inhabited districts that the great increase in small allotments of land will occur. By all means let them be provided where they do not already exist for the benefit of agricultural labourers, whose wages are not likely to increase, and whose prospects are the reverse of cheering; but let not the men be misled by the golden dreams of kind-hearted persons who are haunted by Covent Garden prices for vegetables, and think these can be obtained at any time and anywhere where garden produce is grown.

Those prices have no application whatever to small allotments in sparsely populated districts, and if a large number of these are induced to rely on small patches of different kinds of vegetables that spoil in a week if not sold, the "great question" indicated by Mr. Hiam will assuredly arise as to "finding markets for the disposal of the produce at remunerative prices." That is a very practical view, the very kernel of the question of growing vegetables for sale in what can only be accurately described as infinitesimal quantities in a number of miniature plots far from the busy haunts of men. Green vegetables can only be profitably sent to distant markets in large quantities, and then the districts must be favourable both as regards soil and convenience of quick transit at cheap rates by truckloads. Even under those conditions loss has often to be endured as a check to profits on more fortunate consignments.

It has further to be remembered that in many if not in most districts the vegetable supply of provincial towns is largely contributed by private gardens, not a few of which are to all intents and purposes market gardens, and inexperienced cultivators of plots in open fields, where the land is less rich, cannot possibly compete successfully with those specially favoured purveyors. Platform doctrines and newspaper lectures on profitable vegetable culture by small allotment holders on country farms are founded on insufficient evidence; and if they should lead to anything like a general adop-

tion of the practice that is made to appear so advantageous, while a few persons may by chance be slightly benefited, immeasurably the greater number, who cannot afford to make experiments, will assuredly be disappointed.

This is written with an earnest desire to see the condition of a large section of the community improved. Allotments of land a rood more or less in extent would be of great service to numbers of men who would gladly labour to render them productive. If they can see their way to grow green vegetables profitably for local consumption they will of course grow them, but we are convinced they will make what will be to them a costly mistake if they crowd their ground with vegetables of a perishable nature for supplying distant markets. What we have said will not reach in a direct manner the humble tillers of the soil we would hope to guide; but we have the ear of a great constituency who have the disposal of land for allotment purposes, and to them we appeal, also to practical gardeners who can advise soundly on this matter, not to encourage hopes that cannot be realised in the great multiplication of patchwork market gardens as a panacea for all the inconveniences attending "short time" and a falling wage rate.

The demands of the Education Act compel hard-working struggling men to make a present sacrifice that is hard to bear in consideration of future benefits that may accrue to their families. They are deprived of sums that may appear small, but which are really considerable that once were earned, and as some sort of compensation would be afforded by the granting of small plots of lands to be tilled well and cropped in the good old country fashion of growing vegetables for their families and corn and roots for the poor man's best friend—the pig that pays the rent, with another or two for garnishing his cottage walls. A rood of land well tilled will grow a quarter of corn, which will pay the rent of the land and leave a margin besides the indispensable straw for the comforts of the "friends" and for conversion into manure. Another rood will grow from 1½ to 2 tons of Potatoes, and these if sold would be profitable, but the bulk can be turned to better account at home. The labour attending culture of this kind is mainly that of evening hours and odd days, or a week now and then, when through slackness of work men would be otherwise perforce spending their time uselessly and vowing vengeance against the powers that be. A thrifty and contented peasantry is the backbone of a nation's strength. We are glad to observe a marked disposition exists to help those who are willing to help themselves in cultivating small plots of land in addition to their daily labour—not starvation 5-acre farms instead of it. We could indicate a whole district of these, but the failures have been so many and the privations so great that the proprietors now prudently and, it may be added, mercifully, refuse to let the plots except to persons who have some trade or occupation mainly to rely on as a means of livelihood. With employment more or less regular to rely on, and plots of land in addition for the investment of spare time, it would be the fault of the men if they did not improve their condition and be more contented in their homes. But the secret of success is high culture—clean land and well-supported crops. There is no other safe course to pursue, and those who fall into a loose and slovenly method, and by their neglect grow weeds instead of food, should be given to understand they must give up the land to others who prove themselves worthy and able to manage it well.

This naturally leads to the consideration of another aspect of the question. It has hitherto been the rule with but few exceptions to limit the extent of allotments to individuals regardless of the manner in which the ground is cultivated. We fail to see that this is a sound principle whether regarded from the landlord's or tenant's point of view. The limit is a rood or half an acre, or whatever the extent may be, and however well one person cultivates his plot, he must have no more, while his slovenly neighbour does no good for himself and spoils the land of the owner is permitted to have just as much. This is not the principle on which land is let in larger quantities. If a farmer cultivates 100 acres distinctly better than his neighbour does an opportunity is found for increasing the holding of the former. The man who renders his land the most productive, and is ready with his rent, is very properly encouraged. But there is no corresponding incentive given to the allotment holder. It is evident to all practical men who are acquainted with a series of plots that one man is far better capable of cultivating three portions than another is of managing one. Why, then, should not he who shows his capacity be recognised and have the encouragement that is due to strenuous endeavour and proved worth? If allotments were governed on that principle every striving man would have something to hope for and work for—an incentive for his energy—and when it was seen that he profited by his labour his example would be a stimulus to others who are now content to lag behind and soothe themselves by the ready excuse of "it's no use trying." As they have nothing to gain they

take care to have little to lose. But let a thoroughly able and industrious man feel he has something to gain by the steady increase of his holding, and let others see that he gains by his efforts, and the whole aspect of things would be changed. At the present time the best men are crippled in their endeavours to improve the land and their own condition, while the indolent enjoy equal privileges to which they have no fair claim.

In schools, colleges, universities, in trades and professions encouragement is given to develop the faculties of the students, and rewards are offered for progress achieved. Everything that is possible is done to incite to greater attainments, but in allotment cultivation bad and good managers have the same privileges by the rigid limitation system that now prevails, and which appears to be at variance with the sound principles that govern commercial and even agricultural life in connection with large holdings. But whether a change is instituted of the kind suggested or not—and it is almost certain there will be sooner or later—our more immediate object is to point out the extreme improbability of a great increase in vegetable culture in small patches in agricultural districts proving anything like remunerative to the tillers as first-rate crops of roots and corn for the sustenance of their families. Fruit can and should be profitably grown in home plots, but cannot be regarded as certain to be satisfactory in mixed plots in open fields where birds and boys would need and obtain a share of the crops.

NEW PRIMULAS.

THOSE specially interested in Primroses will no doubt be pleased to learn that important additions are still being made to the host of those named and described, whether in cultivation in our gardens or not. It is only a year or two since Dr. Watt described a large number of new Himalayan Primulas in the Journal of the Linnean Society. The descriptions are fortunately accompanied in this case with careful botanical drawings, and which greatly assist in giving an idea of their horticultural value. Since that time a few of the new species have found their way into cultivation, but in my opinion, seeing the almost everyday communication between this country and the colonies, it is regrettable that a still greater number should not have found their way across the water. As represented in the drawings, *P. Elwesiana*, notably *P. Dickeana*, *P. Kingii*, *P. Wattii*, and others have all large showy flowers, apparently quite distinct from anything hitherto in cultivation, while *P. soldanelloides*, *P. sapphirina*, *P. reptans*, *P. muscoides*, and its variety *tenuiloba*, *P. Hookeri*, and others are little gems; and while the former group may be placed in the locality of *P. Stuarti* and *sikkimensis*, the latter are represented in cultivation only by *P. Hydei* and *P. minutissima*. Then later still we have *P. Reedii*, found, we believe, by Mr. Duthie in the Kumaon district, a very distinct species with large pretty white or cream flowers. And later still, indeed only last year, a colony containing no less than sixteen species and a variety has been found in or near Yü-nan, a district or province of the great Celestial Empire bearing that name. It is situated near to Burmah on the one hand, bordering Tibet on the other, and for all practical purposes may be designated as almost a continuation of the great range of Himalayan Mountains. As would naturally be expected, the differences between the new species and the old Himalayan ones, with many of which we are well acquainted in cultivation, is but little, and it is not at all improbable that some of them will be reduced to varieties of these standard species if we may judge from the very broad views which some of our English botanists take of a large number of the most popular genera at present in gardens.

The plants were gathered by M. Delavay, a missionary travelling in those parts, in the early part of last year, and were fully described by M. A. Franchet of the Paris Museum in the Bulletin of the Botanic Society of France for November.

All the species, with two exceptions, belong to the section *Aleuritia*—i.e., *P. septemloba*, M. A. Franchet, which belongs to the section *Primulastrum*, and *P. Delavayi*, M. A. Franchet, for which a new sub-genus has been coined called *Omphalogramma*. *Primula septemloba*, nov. sp., nearly allied to *P. mollis* and *P. geraniifolia*; it seems, however, a good species; *P. bullata*, nov. sp.; *P. bracteata*, nov. sp.; *P. sonchifolia*, nov. sp., closely allied to *P. obtusifolia*, but having distinct leaves resembling those of *Sonchus asper*; *P. serratifolia*, nov. sp. This name seems unfortunate, seeing that it is already a synonym of *P. marginata*, and which was taken up and used by Gusman for a cross between *minima* and another. It is also allied to *obtusifolia*. *P. secundiflora*, nov. sp., resembling *P. sikkimensis*; *P. calliantha*, nov. sp., allied to the above; *P. amethystina*, nov. sp., with foliage like *Bellis perennis* and flowers resembling those of *P. Kingii*; *P. bella*, nov. sp., allied to *uniflora*, but with different leaves; *P. yunnanensis*, nov. sp., allied to the above; *P. spicata*, nov. sp., a remarkable species different from all other Primulas in having a

spicate inflorescence, quite a novelty, the flowers being much larger than *P. uniflora*; *P. glacialis*, nov. sp., allied to *P. nivalis* and *P. Fedtschenkoi*, both Turkestan species; *P. dryadifolia*, nov. sp., resembling *Dryas octopetala*, the leaves and bracts giving it a distinct character; *P. pinnatifida*, nov. sp., allied to *P. Wattii*, flowers resembling *Erius alpinus*, but very much larger; *P. cernua*, nov. sp., near to *P. capitata*; *P. Delavayi*, nov. sp., sub-genera *Omphalogramma*; *P. auriculata* var. *polyphylla*, which is very remarkable as being a Siberian species, and also three Himalayan species—namely, *P. denticulata*, *P. Stuarti*, on Mount Che-tcho-tza, &c., and *P. sikkimensis*, on the glaciers of Li-kiang.—M.

A CONTRIBUTION TO THE STUDY OF TRANSPIRATION UNDER THE DIFFERENT RAYS OF THE SOLAR SPECTRUM.

A PAPER on the above subject by Rev. Professor Henslow was read at the Linnean Society on Thursday last, December 3rd. The experiments described were undertaken to test the results of Wiesner, who found (contrary to the opinion of others, who thought that the brightest rays of the spectrum were the chief cause of transpiration) that it was mainly due to the rays which are absorbed by chlorophyll. The spectrum of that substance reveals seven absorption bands, the most powerful of which are in the red, blue, and violet, and when plants were grown under coloured glasses Mr. Henslow found just as Wiesner had done, that transpiration attains to a maximum under the monochromatic red glass and under the blue and violet as well, while ordinary colourless glass gave another maximum. On the other hand yellow and green gave a minimum.

Wiesner's interpretation is that light thus absorbed by chlorophyll is converted into heat, and then it raises the temperature of the tissues, and so causes the formation of aqueous vapour. If this be true it would seem to account for Dehérain's discovery that plants can transpire in a saturated atmosphere, and as a corroboration Wiesner found that light which had been first transmitted through a solution of chlorophyll was almost powerless to cause transpiration. A fact which Mr. Henslow could not account for was that while the red glass which admitted no other rays gave a maximum, the yellow glass, which transmitted red and green rays besides yellow, gave a minimum. It would seem as if yellow had actually a retarding effect upon the other rays.

The method adopted by Mr. Henslow was to grow small Lettuces and other plants in miniature pots, and by wrapping them up in a gutta-percha sheeting tied round the base of the stems all loss of moisture from the earth was prevented. Then he weighed the whole day by day after its having been under each coloured glass for twenty-four hours in succession. He thus ascertained the per-centages of the losses, the means of which gave the results mentioned above.

Mr. Henslow also drew attention to the importance of distinguishing between transpiration and evaporation, the former being a vital action, the latter purely physical, and will take place from dead and living substances, but is modified or held in check to some extent by the latter. Thus if a leaf be cut in two, and one half suddenly killed by scalding, it will be found that this one rapidly dries up, while the other loses water much more slowly. Again, thick leaves and older ones absorb more heat than thin ones and younger ones respectively, yet the transpiration is greater from young leaves and deciduous, contrary to what one would expect if transpiration depended solely upon heat.

LADY BEATRICE LAMBTON PINE APPLE.

THIS fine Pine Apple has now been a long time before the public, yet we seldom hear of it being exhibited at any of our shows. This is much to be regretted, as it is a noble-looking fruit and reckoned of superior flavour. It has, in my experience, however, one fault, which may account for its being so little heard of—viz., its liability to get discoloured at the base, the juice oozing out as the pips ripen. It is of a very juicy nature, and large fruits are most liable to go bad in this way, which detracts from their appearance and prevents their appearing upon the exhibition table. No doubt, like some of our best varieties of Grapes, this Pine requires some special treatment. My endeavour to find such is the object of writing these lines. If any of your readers have known and overcome this evil, by giving their mode of treatment through the Journal they will do good service to many besides myself.—D. B.

ICE HEAPS.

I HAVE somewhere seen an account and figure of storing ice in the form of a thatch-covered heap, and shall be glad to be directed how to proceed in keeping ice in some such way as suggested. Our ice-house is not large, and we wish a supplementary store for use early in the season,

so that the house can be kept closed as long as possible.—E. G., *Derbyshire*.

[The following method of storing ice was adopted by Mr. Perkins at Thornham Hall :—

We always, if sufficient ice can be secured, make a large stack independently of the ice-house.

To insure a stack of ice lasting a considerable time, we put on two layers of thatch, the first on the ice, and the other on a rough framework made of fir poles and slabs, as in the accompanying engraving. It takes about thirteen poles for the inside and a like number on the outside. On the latter thin slabs are placed in a horizontal direction, on which the outer thatch is placed. To keep the outside poles a sufficient distance from the inner ones, short pieces of wood, about 9 inches or a foot long, are fastened between them. The body of air between the two coats of thatch contributes greatly towards the safe keeping of the ice.

We generally have to put new ice on the top of the old in the ice-house, all of which is snugly covered with straw. Now, it is an old saying that we should let well alone—that is, in this case, if sufficient ice is pre-

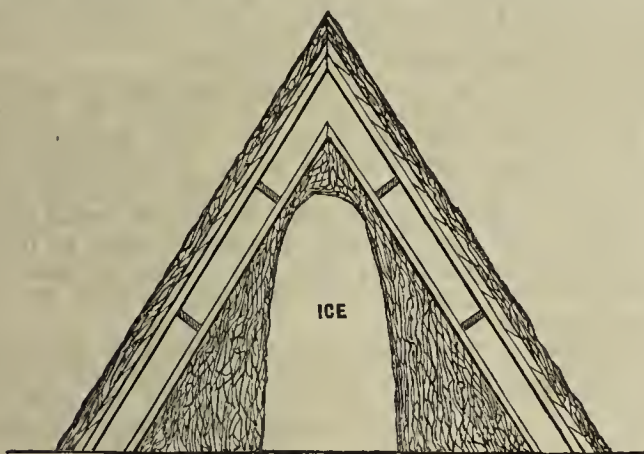


Fig. 76.

served for the family, why trouble about any fresh plan? and we feel afraid to try any other method, fearing success might not attend our efforts; but I must confess I am not particularly fond of straw, and if it is not indispensable, a much greater quantity of ice could be stored in any house, and the ice would be saved from the pernicious effects arising from its being surrounded with wet straw, which could be saved for a more appropriate use. If some of the great ice-preservers in this country would state their opinions as to whether ice can be preserved without straw it would be a great boon to many.]

SHOWING LATE GRAPES—MIXED VINERIES.

BEFORE taking final leave of the subject of Grape showing and Grape judging, I purposely waited to note the result of the competitions for the prizes in the Grape classes provided at various Chrysanthemum shows, and also the success of one very frequent exhibitor at the August shows held in this district. If the latter had repeated any of his former successes this season I should have had to modify some of my opinions which have found their way into the *Journal of Horticulture*, as well as others I have not been backward in giving expression to whenever the opportunity offered. It will be remembered that one of my objections to the growing practice of exhibiting late Grapes at early shows, is the fact that by encouraging it we really indirectly injure both the exhibitor and the exhibitions we all profess to have such a regard for. Several practical gardeners commented on my remarks, and for once I had a following, gaining the support even of one young exhibitor, who out of all my numerous articles found he could only agree with my opinions in this one matter. For this I am naturally grateful and somewhat elated, as it may be the turning point in my career. But seriously, and at the same time I am bound to admit that my opponents made out a strong case against me, and all will agree that there is much to be said for and against early exhibitions of late Grapes.

I am still of opinion, however, that August is too early for these easily coloured showy Grapes to take precedence over well-grown if less showy examples of better flavoured and fully ripe sorts; neither should they be given first honours early in September if unripe, unless indeed nothing is said in the schedule about all fruit shown being fit for the table. Where the latter condition is insisted on, those who do not comply with them ought not to be encouraged at the expense of those who do, any more than they are when they happen, unfortunately, to include an unripe dish of Peaches or other choice fruit in a collection. Would "S." or any other good judge of fruit, give a first prize to an unripe Pine Apple or Melon, especially if there were fairly good ripe fruit

in competition? I venture to think they would not, and why should not this rule apply to unripe Grapes? This brings me to the second portion of my heading—viz., mixed vineries. A gardener, whom my remarks will not affect, has as his main object, and with the full approval of his employer, gaining as many prizes for fruit as possible. Most probably he competes at six or more shows held in his neighbourhood from the middle to the end of August, and on the whole with marked success. All his Grapes for collections of fruit and single dishes are grown in two large well-built vineries, and in each house there are an extraordinary mixture of sorts, these including Black Hamburgh, Madresfield Court, Black Alicante, Gros Colman, Mrs. Pince, Muscat of Alexandria, Buckland Sweetwater, Waltham Cross, and others on trial. The early sorts are turned out of the houses, and not reintroduced till the late sorts are showing bunches, and even more advanced in some cases. In this manner he is able to start forcing early in the year, and yet have the early-ripening sorts not too far gone in August. As may be expected, the Black Hamburgh are never very good, but he is able to take prizes with his Alicantes especially by the middle of August, and it may be the result is perfectly satisfactory to all concerned. But now comes the other side of the question. In his immediate neighbourhood he has recently had an opportunity of distinguishing himself in fruit classes provided at the Chrysanthemum shows, but he was simply nowhere, and probably by Christmas will not have a plump Grape on the place. This is certainly an exceptional case, but what is to prevent others following the bad example, and that, too, without the approval of their employers? I maintain that the addition of numerous Grape classes, and especially those that encourage the early ripening of late sorts, to the prize lists of summer shows will eventually re-act to the prejudice rather than the benefit of those societies in the habit of doing so, and this I assert, not as an enemy, but as a well-wisher of all. The Grape classes are very attractive at all times, but there is always plenty of variety at these summer shows, and some of the Grapes could well be spared.

As a rule the Chrysanthemum shows are arranged by the same committees as manage the summer shows, and in this case what is to prevent the reduction of Grape classes in the latter and insert them in the former? In any case something of the sort will have to be done, as there is a great sameness in Chrysanthemum shows, and those not deeply interested in the latter popular flower must have additional attractions provided, or the "gate money" will most probably soon show a decided falling off. By devoting rather more money for Grapes, and rather less, if need be, for Chrysanthemums, an attractive feature is at once added to the show, this also affording an undeniably healthy stimulus to the culture of late Grapes. Now is the time for this idea to be acted upon, and those committeemen who agree with me in the matter should bring the subject to the front at the next general meeting.

It has been hinted more than once that it is necessary to offer high prizes to attract a good show of late Grapes, and it may be there is some truth in it; but this does not apply to the exhibitions held in this neighbourhood, neither will it long do so at those of other and more recently started societies. At Bath, Bristol, and Yeovil the show of Grapes was good, the competition being close and good in nearly every class, though it must be added that at the first and last places the quality was not quite so high-class as might have been expected, the best bunches very probably having found their way to the summer shows. At Bristol there were about eight classes for Grapes, and a very fine lot of bunches were staged, the sorts including Black Hamburgh, Muscat of Alexandria, Buckland Sweetwater, Alicante, Lady Downe's, Gros Colman, and Mrs. Pearson. The prizes are not high, but they have been long annually offered, and the gardeners in the neighbourhood "lay themselves out" to win them. The same thing would happen in other places with only very slight encouragement and much good he done. Late Grapes cut for summer and early September shows do not keep well, but those taken to the Chrysanthemum shows may be either sold at a fairly good price or taken home again and bottled. Alicantes that we exhibited in a collection of fruit at Bath are now as fresh and plump as others left at home, and I believe will keep quite as long.

I have yet another grievance. Why do so many societies insist upon the rule that a dish of Grapes should consist of three bunches, or why ask for three bunches in the "single dish" classes? Two bunches are ample at all times, and if this number only were asked for much good would follow, and many a gardener in a small place would have a better chance of competing with their more fortunate contemporaries in larger places without appearing to strip a house for one show. The fact is, the "gate money" is unfortunately the all-important factor in the business, and the framers of schedules too often totally disregard all remonstrances from those who well know that the producing an imposing effect in a tent does act prejudicially on those whose lot it is to do it. The Royal Horticultural Society has set a good example in not asking for more than two bunches, and I am glad to see they have followed it at Bristol. All societies should stipulate for a limited number of any kind of fruit, or only sufficient to form a small dish, and it would be fairer and better for all concerned. A wise choice of judges would then complete the reform, and frequent just causes for grumbling be removed.—W. IGGULDEN.

HELLEBORUS NIGER MAXIMUS.

ALTHOUGH we have a number of herbaceous plants there is none that may now be termed gay; indeed, the only exception is that of the Giant Christmas Rose, which I had under the name of *Helleborus niger maximus*, and which, I think, is not different from that sent out as *H. niger altifolius*. It is certainly a most desirable plant, being the first with us to flower,

forming a clump about 2 feet across, and this in three seasons' growth. The flowerstalks rise to a height of 12 to 18 inches, heavily tinged with purple, and bear one to three flowers on each, which in the bud state are extremely chaste and beautiful, of a pale pink or bluish, the flowers white inside when expanded and rose outside. The flowers are very large when fully expanded, sometimes nearly 6 inches across, and very persistent. The leaves are large, deep or purple-green, the footstalks purple and mottled, and of great substance, being thick and leathery. It certainly ought to be in every garden, as also the lesser, but equally floriferous, *H. niger angustifolius*.

Snowdrops, Winter Aconites, and Crocuses are well above ground; even Daffodils are peeping, and Snowflakes are high above ground, so that we shall not be long ere we are again gladdened by the harbingers of spring, as we are by the Hellebores before the winter has well set in. The Lily of the Valley—like flowers of the Arbutuses and the Laurustinus, are also beautiful.—A.

WHITE PLUME CELERY.

My thanks are due to "Kitchen Gardener" and Mr. R. Gilchrist for obligingly answering my question respecting the above. Judging from the acknowledgment made by "Kitchen Gardener" and the information supplied by Mr. Gilchrist, it is evident White Plume can only be described as a fine-weather Celery and totally unsuited for winter use. True, as "Kitchen Gardener" says, Celery is wanted from September to Christmas; but in this part of Yorkshire during the past eight years we have had as much as 20° of frost and 2 feet of snow on the ground before the 6th of December. It is against such winters as these we must guard, and not those that do not set in until the advent of the new year.

Most vegetable novelties find their level upon horticultural exhibition tables. During the last autumn it was my privilege to examine and pass judgment upon some scores of Celery exhibits, but not once have I seen a sample of White Plume placed in competition with other sorts. "Kitchen Gardener" admits that it is inferior to others for salading purposes, therefore its cultivation must be upon a limited scale. I thank him for the offer of a pinch of seed. If it is his own growing I will with pleasure accept the same, but if it has to be purchased for me I must beg to decline.

We have to keep up a constant supply of Celery for salading purposes from June until April. Hitherto our Alpha and Omega has been Sandringham White as supplied by Messrs. Veitch & Sons. If anyone can name a better sort the information will be gratefully received by—J. MCINDOE.

NOTES ON CHRYSANTHEMUMS.

CHRYSANTHEMUM CULLINGFORDI.—Seeing several notices in your Journal respecting the present controversy as to whether this is to be classed as Japanese or reflexed, I am strongly in favour of the former, in support of which I wish to draw attention to the fact that it so much resembles *Père Delaux* as to leaf, habit of plant, the size and colour of bloom, that we are led to imagine that if one is Japanese then assuredly so is the other. In fact, I imagine it is a seedling from *Père Delaux*. I have some thirty *Cullingfordi* in 9-inch pots. The foliage and habit of the plants is all that can be wished for, but the blooms, I think are too late, as I fail to see the remarkably brilliant colour they are said to have.—F. C. BARKER.

CULLINGFORDI.—In reference to my notes (page 493) on the variety *Cullingfordi*, in case there should be any misapprehension on the subject, I should like to state that at the time the committee meeting of the Kingston Chrysanthemum Society was held, when the decision was arrived at to recognise the above as a Japanese variety, they were not aware that the National Chrysanthemum Society had also held a meeting the day previous, at which the same subject was discussed and an adverse determination arrived at. Not that it would have influenced the Kingston Committee, as the decision was arrived at almost unanimously after considering the whole merits of the variety as it was known to them. But I should not have asked for your opinion on the subject, nor could I have expected you to give it, in view of the perplexities of the case, had I been cognisant of the above. I merely sent the two varieties to show what we considered a typical reflexed in Sulphur Gem, which is truly described as of the Annie Salter type, and how the above variety is far removed from it when fully expanded, however the young flowers may favour the reflexed type. The Japanese are so mixed by intercrossing that it takes two or three years' cultivation to get at their true characteristics. I have been asked by many how it was the variety was not awarded a certificate at the Crystal Palace as well as at Kingston, having exhibited it at both places, hence my reference to it in my last note.—C. ORCHARD.

JUDGING CHRYSANTHEMUMS.—In reference to the recent notes on judging the judges, I would mention an instance that calls for comment at the recent Chrysanthemum Show at Bristol—viz., in the principal class for cut blooms, twenty-four distinct varieties, the first prize being awarded to a stand containing blooms labelled Empress of India and Mr. Cunningham, which are generally known to be synonymous; and although the judges, when appealed to, admitted that they were identical, they nevertheless by some inexplicable reason failed to disqualify on that account. But the extraordinary part of the matter is, that although the National Chrysanthemum Society's certificate was offered for twenty-four distinct varieties, it was awarded to an exhibit that contained blooms which members of that Society do not consider distinct. If such inconsistent

proceedings are allowed to occur, I fear for the interests of the Society that employs such judges to perform that operation which is of the most vital importance in regard to the welfare of any Society. I call attention to this instance in the hope of inducing some such arrangement being made in the Chrysanthemum schedules as in the Rose schedules, in which a list is inserted, and those varieties which on the authority of the National Society are identical being bracketed together.—M. C.

FRUIT AND PLANT HOUSES.

(Continued from page 488.)

VENTILATION is very important in the cultivation of fruit, flowers, and plants. To keep a house closed from autumn to spring says nothing for the non-ventilation theory, as it is in the winter season when growth is most sluggish. But try the non-ventilation system in a house where forcing operations are carried on, as that of a Peach house or vinery, and in another change the atmosphere at least once a day by careful and judicious ventilation in the early part of the day if possible, contrasting the results with those of the former. The atmosphere is being continually changed by the crevices in the woodwork and laps of the glass, some may say, which I readily grant it is in only too many cases to the discredit of the builder. I believe fresh air to be as necessary for vegetable as it is for animal life, but draughts, heats, and chills are similarly injurious to health, differing only in intensity.

It cannot be too strongly insisted upon that all horticultural structures must be impervious to wet, resisting the influence of cold air, and the escape of warm air. The prevention of heat radiation has been sought in two ways. First, by double glazing, of which I have no experience, and only know that its advocates have long been silent respecting it. Besides, in double glazing we get a vacuum, the most effective of non-conductors, so if we prevent radiation outwards we stop the passage of heat inwards. Second, the best preventive of radiation is what we use for shading—non-conducting.

The theory of ventilation rests upon the fact that heated air rises to the upper portion of a house, and when a sash is opened in the roof the warm vitiated air rushes out, and the cold fresh air comes in. This is sufficient to cause what we term a circulation of air, and produces evaporation, prompting the elaboration of the sap, which the horticulturist is so anxious to have effected as much as possible under the influence of sun or light. If the current is strong the evaporation will be in proportion and excessive; the consequence is a check, which may also be induced by a sudden rush or influx of cold air stagnating the sap. The object of ventilation is to aid vegetation in the elaboration and assimilation of the sap, to give solidity to the wood and foliage, to perfect parts essential to the production of flowers and fruits, which it can never do when kept in a close atmosphere, and equally disastrous is a sudden cooling of the atmosphere. Therefore, whilst we want means to let out the heated air or prevent its accumulation at a certain point in excess of other parts of the structure, we need means to prevent the ingress of cold, to secure a circulation, a change of air of a bracing rather than chilling description. If anything were better contrived to secure a chill I know not what it is, unless it be the opening of both top and front ventilators at once, so as to produce a thorough draught, than the system that obtains of ventilating by the top lights raised by crank and lever movement—an aperture the whole length of the house. True they are on the south side of the house, the warmest, and be it said the point from which the wind most prevails, so that if we let out the heat on that side we certainly have the cold driven in most frequently, it coming in gusts through the aperture that injures or cripples the foliage in a serious and often fatal manner. Ventilators so contrived that the air entering falls directly upon the plants or foliage is not true ventilation. When hot air is let out its displacement must be effected in the gentlest and most subtle manner, for effecting which various expedients have been resorted to, such as passages made in the back walls of vineries, which, whilst allowing the hot air to pass out, would prevent the ingress of cold in a ruinous degree, and which unfortunately are obsolete. There are few contrivances in these days to prevent chills such as were frequent in all our old vineries both at the back or upper part of the house, and also in front, so that the air would pass over the surface of the heating medium, and be considerably modified before mingling with the general atmosphere or acting on the plant foliage.

We have sliding lights, every other opening at top—if a span on both sides alternately, and similar provision at the front or sides. This is much better than raising the lights by crank and lever movement, which is only making an opening or passage for the wind to be driven in proportionate to its velocity. It is a ready means of ventilation, and available even when the weather is wet, yet it is the worst form conceivable, albeit its fault may be considerably reduced by having the ventilation on both sides of the

apex of span, so that the wind will pass clear through instead of being directed into the house, as is the case when the opening is all on one side, and it then acts similarly to a lantern ventilation, which in my opinion is the best of all. This lantern system allows of the hot vitiated air escaping without danger of an inrush of cold, as in a wind it can blow clean through it, as there is nothing to divert it from its course, having in this respect a great advantage over the sliding light, which allows the cold air to be driven directly upon the foliage, the back wall in a lean-to directing it inwards, and similarly in a span when the openings are on alternate lights on opposite sides of the house.

I have reserved alluding to the front or side ventilation, as I only resort to it as most do through sheer necessity, or, in other words, as a means of preventing the temperature rising too high. It seems to me that whatever ventilation we have should be by the upper part of the roof only, or where the heat accumulates in a degree unduly affecting the inmates, which surely could be effected by increasing the provision for top ventilation, and if necessary removing the roof lights. That side light ventilation is needed under our present system I readily grant, and that it is useful with the present system of arranging the pipes in front or along the sides of the house is not to be gainsaid, especially when the air admitted is made to pass over the heated surface and reach the plants beneath them, or passing gently to them in a considerably modified form to what it enters, which is a very different thing to admitting it directly upon the plants. Some have gone to the extent of having no top ventilation, having it solely at the sides, as was the case with orchard houses of the original type, and which are fast becoming as obsolete as the system of culture which called them into existence. A current of air passing through a house is the best possible means of promoting evaporation, of hardening and ripening, and of inducing attacks of red spider—the most baneful of all insects the horticulturist has to contend with under glass.

Whatever the system of ventilation adopted, it should be of such a kind as to allow of a change of air without a depression of temperature, and it should also be ample so as to prevent the temperature rising too high for the successful culture of whatever fruit or plant the structure may be devoted, and it ought to be perfectly under control. I am convinced that a perfect system of ventilation is to be found in the direction of moveable roof-lights, commencing at the apex and downwards by degrees as practice finds expedient until the whole is withdrawn, and which gives me an opportunity of again referring to the advisability of having the roof-lights of all fruit-forcing houses moveable, so that they can be withdrawn at the will of the cultivator.—G. ABBEY.

(To be continued.)

GLADIOLUS COLVILLI ALBA.

AMONG hardy bulbous plants I know of none that can compare with this in general usefulness. As a permanent pot plant it is unequalled, and its chaste and elegant pure white blossoms make it a fit companion for even the choicest exotic flowers; indeed, it must ere long be among the indispensables in all floral arrangements. It is one of those plants which, owing to its erect habit, occupies but little room in the forcing department, and from which a maximum amount of flowers may be obtained in a minimum of space, a fact which should have some weight with those who grow cut flowers in quantity, and especially so where space is limited. Unlike the family to which it belongs, it will if established in pots withstand forcing with impunity, which considerably increases its value as a pot plant. Among a few nurserymen who grow cut flowers in quantity it is well known and appreciated. Not so, however, with gardeners generally, as comparatively few seem to know little or nothing respecting it. This season I have grown a quantity in pots, and they have elicited the admiration of all who have seen them. It is of extremely easy culture, which is another point favouring its extensive cultivation. It may be that it is not grown so extensively or so frequently met with as its merits entitle it to be from its being regarded in the light of *Gladiolus* generally which are not hardy. With this, however, the case is different, since both the typical plant and the variety now under notice is perfectly hardy—that is, if withstanding 22° of frost without injury may be considered such. And not only is there this distinction in its complete hardiness, for it is nearly evergreen, and is more or less active all the year round if allowed to remain undisturbed in the open ground. When this fact is fully realised we shall see it grown in quantity, and those who once take it in hand will not lightly throw it aside. It may be well here to remind those who would give this lovely plant a trial, that if ordered early it can be supplied with Dutch and other bulbs. It must

not, however, be left to order with the hybrids of *Gandavensis*, for it is possible to have *Colvilli* and its forms in flower almost before the ground is fit for planting outside the general collection.

A word of warning by the way. I have been extolling somewhat high a plant of sterling merit, and without this word of warning those unacquainted with it may on first receiving it be disappointed with it. Its corms are about equal in size to those of a good-sized *Crocus*, which is so different from the forms of *Gandavensis* that it has caused many to regard it as mere rubbish, and I know instances where those receiving it for the first time never expected flowering plants. It differs again in another and important particular, hence the floriferousness which so characterises it. Instead of one break issuing from these comparatively small corms, it is not unfrequent for it to throw up from three to six, depending of course on their individual strength, and seldom less than three, each of which bears a spike with from six to ten of its satiny white blossoms, elegant in the extreme.

As it was intended to keep a good number in pots, the whole of our stock in pots were shifted into larger ones when making free growth, so as to give increased strength to the new corms. When these had finished flowering and growth matured they were placed in a warm sunny position to ripen. Towards the middle or end of October a portion was introduced into slight heat, as I am inclined to believe that the earliest of this year may be had in flower with a little management and without any undue forcing from Christmas onwards. With frame culture and slight warmth it will, if potted early, flower for Easter, and when established in pots and introduced in slight warmth during October it may, I think, be had at a time when such plants are of great value. Strangely enough the majority of our white midwinter flowers are plants of extreme hardiness, and whose natural flowering comes with late spring or early summer, and if in the charming plant under notice another may be added so much the better.

For pot culture use one-half rich loam, to which add leaf soil and peat in equal parts, making the whole rather sandy. It delights in a free, rich, open soil, and should never be planted in cold, heavy, or retentive soils, for in these the results will be anything but satisfactory. Place four corms in a 5 inch pot, and if the flowers are not required for cutting the plants will form an attractive feature dotted here and there among the occupants of the conservatory. In the open ground it flowers from July to the end of August, and if various situations are chosen for its flowering season outdoors may be somewhat lengthened. Some of those grown in pots this season for indoor decoration might with advantage be planted in the hardy herbaceous or mixed border, a sunny and warm border always preferred. Plant it from 3 to 4 inches deep, and if the weather be very severe it will be helpful to it to mulch the ground with short stable manure or spent hops. Its rapid increase, too, is worthy of note when under good cultivation, for it will double and even triple itself in a season, and if allowed to remain in the ground undisturbed for three years the crop will be a surprising one. Some considerable experience with this lovely plant in the open ground and in pots has convinced me that it is one of the most valuable of hardy bulbous plants. For growing in the open border plant in early autumn. They need but little room for development and where space is limited may be planted *en masse*. With the existing facilities of the parcel's post a hundred or so may be transmitted.—J. H. E.

SCARLET RUNNER BEANS.

HAVING had a capital supply of these this season, I have been led to make a few remarks about them, in the hope that they may prove useful to those who have been less fortunate during such a scorching summer. Being of an accommodating nature, I am inclined to think sufficient attention is not always given to render them so productive as they otherwise would be were a little more attention bestowed upon them.

My main crop I always grow in a quarter of the garden which is partly shaded by trees, which, no doubt, has had a little influence for good on the crop this year. But I attribute more to the preparation of the ground for the rows, which is done by making trenches 5 feet apart, about the same as for Celery, the manure employed to be thoroughly decayed.

I sow a double row of Beans in these trenches, placing the Beans 9 inches apart, which are then covered with 3 or 4 inches of soil from the sides of the trench. When of sufficient height they are earthed as high as the seed leaves and then staked. This earthing fills the trench to within 4 inches of the top, thus leaving ample space for water to be poured in when needed, and which must soak straight down to the roots. In hot dry weather I give them a thorough watering once a week, first using clear water, and then liquid manure. Nothing exhausts this crop so much as to allow the pods to remain on the plants to become old. They are better picked, even if thrown to the rubbish heap, than to remain on the plants. That I hope, however, would be a last resource,

when they are so inexpensive to preserve, and make such an agreeable change for the winter. For the past four years I have grown selected seed of Carter's Champion, and have found it to be a variety to be depended on for quality and productiveness when treated well.—J. COPSON, *Down Ampney.*

WREATH MAKING.

THE hints thrown out by your correspondent "J. H. E." regarding the making of wreaths, will, I am sure, be highly appreciated by many of the readers of the Journal. Numbers of young gardeners who have been reared in private gardens have had very few opportunities of seeing wreaths made, and feel at a loss when at some unexpected time they are requested to make one. I can well remember my first start at wreath-making, and the difficulty I had in keeping the flowers in their proper position on the wire skeleton, which had not the improvement mentioned by your correspondent—viz., the hazel or willow secured inside. Since then I have used cardboard as a skeleton, and find it much better in every respect. It is quite a simple matter to cut out a circle about 1 inch wide in the cardboard, round this tie some green moss, and you have at once a capital skeleton for making crosses. I generally use thin laths nailed together and covered with moss in the same way as the wreath skeletons.

When *Adiantums* are scarce I find *Asparagus plumosus* a very good substitute. It lasts a long time fresh, and is quite as light and graceful as Maidenhair Fern.—WILLIAM LITTLE.



AT a general meeting of the ROYAL HORTICULTURAL SOCIETY held last Tuesday at South Kensington, E. G. Loder, Esq., in the chair, the following candidates were duly elected Fellows, viz.:—T. B. Crundall, George Flemwell, T. W. Girdlestone, Surgeon-General Graham, J. J. Hillier, Major Holland, Walter Kruse, Hugh Low, Miss Ruth Paget, Alfred H. Pearson, Henry J. Pearson, Miss A. A. Rothschild, W. Threlfall.

— THE Royal Horticultural Society's Gardens at Chiswick appear to be taking a large share in preparing for the Colonial Exhibition to be held at South Kensington next year. Very LARGE CONSIGNMENTS OF TREE FERNS, CYCADS, &c., have arrived from New Zealand, Australia, Ceylon, and Antigua, and are now being potted and started into growth. There are hundreds of splendid trunks, most of which have arrived in fairly good condition, but there appears scarcely time for them to form proportionately large heads. A number of fine plants of Filmy Ferns are remarkably fresh, and some trunks of *Todea africana* weigh upwards of 6 cwt. each. Great labour must necessarily be incurred in the management of such a large importation. The large stove is being filled with them, and the Rose house, formerly the orchard house, is being treated so as to provide additional accommodation.

— THE annual meeting of the NATIONAL AURICULA AND NATIONAL CARNATION AND PICOTEE SOCIETIES was held at South Kensington on Tuesday last, Shirley Hibberd, Esq., in the chair. There were present: Dr. Masters, Dr. Hogg, Messrs. G. F. Wilson, G. Paul, H. Turner, H. Cannell, J. James, E. Hill, H. J. Pearson, and Mr. Douglas, Secretary. The report was read and approved. According to the financial statement, the income of the Auricula Society amounted to £87 5s. 6d., leaving a balance in hand of £9 2s. 1d., and that of the Carnation and Picotee Society to £78 2s. 3d., leaving a deficit of £4 2s. 9d. The date of the Primula Conference was fixed for Tuesday and Wednesday, April 20th and 21st.

— THE next Exhibition of the HULL CHRYSANTHEMUM SOCIETY is fixed for Thursday and Friday, the 18th and 19th of November, 1886.

— WE recently observed in the Chelsea nurseries of Messrs. James Veitch & S. TWO NEW CHRYSANTHEMUMS that promise to be of considerable value because of their lateness and purity. They are Japanese varieties, named Domination and Pelican. The former has full flowers with very long drooping florets, pure white, flat, yet rather twisted, and notched at the ends. The latter is equally pure and has broader florets. The character of the flower is of the Dragon type, and is popularly called the White Dragon, Domination having more the character of Meg Merrieles, yet both are perfectly distinct and decidedly attractive.

— IN one of the stoves in the same nursery a batch of small flower-

ing plants of *TOXICOPHLEA SPECTABILIS* suggest how valuable such plants are at this season of the year. They were raised from cuttings in the spring, and range from 9 inches to nearly twice that height. They are in 5-inch pots, and are clustered with small white flowers that diffuse a delicate *Ligustrum*-like perfume that is very enjoyable. Such plants grown by the dozen would be very acceptable in many gardening establishments. They continue attractive for several weeks.

— THE eleventh annual dinner of the LAMBETH AMATEUR CHRYSANTHEMUM SOCIETY was held at the Bridge House Hotel, London Bridge, on Friday evening last. The chair was occupied by Mr. Alfred Pocock, the Vice-Chairmen being Mr. Edgar Ivison and Mr. C. Harman Payne. The company, which numbered between seventy and eighty, consisted of many local residents and honorary members. Among the visitors were Mr. Seymour Keay, the late candidate for West Newington, Mr. William Earley, Mr. William Holmes, Secretary of the National Chrysanthemum Society, Mr. R. Ballantine, the Vice-President of the same Society, and other gentlemen interested in floriculture.

— MR. JOHN CARTER, Keighley, sends a COLLECTION OF PRIMULA BLOOMS, representing some exceedingly fine varieties, and admirably grown. The varieties are as follow:—Princess Louise, very large, (2 inches in diameter), massive blooms, white or blush-tinted; The Queen of similar size and substance, pure white; Emperor, a remarkable variety with large flowers and of a peculiar bright rosy scarlet colour, very effective and distinct; Marquis of Lorne, another of the large-flowered forms of a soft purple colour; Al Crimson and Magenta Queen are both richly coloured varieties, bearing large trusses of flowers; but the most beautiful of all is a double variety named Mrs. Langtry, soft pink in colour, the petals slightly fringed, the bloom of moderate size but very freely produced. For cutting or general decorative purposes this variety is charming, and we commend it to all interested in these useful plants.

— THE annual dinner of members and friends of THE NATIONAL CHRYSANTHEMUM SOCIETY will be held at the "Old Four Swans," 84, Bishopsgate Street Within, on Monday evening, December 14th. Chair will be taken by the President, E. Sanderson, Esq., at six o'clock precisely. The prizes awarded at the recent Exhibition at the Royal Aquarium, Westminster, will be distributed on the occasion. The Exhibition of this Society for 1886 is fixed for November 10th and 11th at the Royal Aquarium, Westminster.

— WE are informed that a CHRYSANTHEMUM SHOW IN THE ISLE OF MAN was recently held in the Town Hall, Castleton, under the management of an energetic local committee. The flowers were a great improvement on those of last year, some of them being very fine. The number of exhibits also showed an advance. In addition to the Chrysanthemums there was also a large and creditable show of cut flowers and fruit. The hall was well filled, the exhibits being ranged in tiers, which allowed the several specimens to be fairly seen. Mr. Nicholson of Roby, near Liverpool acted as judge, and exhibited, not for competition, a collection of handsome Chrysanthemum blooms. The principal prizes were secured by Mr. W. Ambery, Douglas; Mr. J. Looney, gardener to Mrs. Gawne, Ken-traugh; and Mr. J. Murphy, gardener to W. F. Moore, Esq., Crankbourne.

— MESSRS. CASSELL & Co., Ludgate Hill, announce that they intend commencing the issue of a NATIONAL LIBRARY on December 21st, in a series of 3d. volumes, to "represent all periods and forms of thought." The books will be of the records of History, Biography, Religion and Philosophy, Discovery and Enterprise, Plays, Poems and Tales, Natural Science and Natural History, Art, Political Economy, and other subjects." These volumes will be of small 8vo. size, of about 192 pages, in paper covers, or in cloth at 6d. each, and they will be issued weekly. Messrs. Cassell & Co. have enlisted the services of Mr. Henry Morley, and they merit success in their enterprise.

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY, to be held at the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 16th inst., at 7 P.M., the following papers will be read:—"The Influence of Forests upon Climate," by Dr. A. Woeikof, Hon. Mem. R. Met. Soc.; "Report on the Phenological Observations for 1885," by the Rev. T. A. Preston, M.A., F.R. Met. Soc.; "*Etudes sur les Crépuscules Rosés*," by Prof. A. Ricco; "The Storm of October 15th, 1885, at Partenkirchen, Bavaria," by Col. M. F. F.R. Met. Soc., F.R.A.S.

— THE Select Committee of the House of Commons, appointed on the motion of Sir John Lubbock to inquire into the desirability of establishing a FOREST SCHOOL IN ENGLAND, recently took the evidence of Mr. W. G. Pedder, Revenue Secretary of the India Office, who stated that a Forestal Department was authorised in Bombay in 1846. About that time the revenue of the Indian forests was £40,080. Since then it had risen to a gross revenue of nearly £1,000,000, and a nett revenue of over £400,000, and that, he considered, was undoubtedly due to the increased education of forest officials. Instructors were obtained from France and Germany, but latterly chiefly from France, because it was found that the woodlands of England and Scotland were not so well managed as to enable the managers to give instruction.

— THE CULTIVATION OF THE COCOA-NUT PALM, says "Forestry," is the most remunerative branch of American farming. The trees do not produce much fruit until they are ten years old; but afterwards they continue prolific for nearly a century, and the yearly yield of each is worth, on the average, 15s. in New York. In the extreme south of Florida an enterprising native of New Jersey has planted 200,000 Palms. Land, labour, and trees have cost him only £20,000; and he expects, in two or three years' time, to be earning a clear £120,000 annually, or 650 per cent. interest on his invested capital. The prospect is a seductive one; but lest British fathers with younger sons should dream of sending their hopefuls to grow Cocoa Palms in Florida, we may as well add that in the northern hemisphere the valuable nut can only be cultivated near the sea, and south of lat. 27°, and that the New Jersey speculator, with commendable prudence, has bought up the only tract of land in the United States that is exactly suitable for the purpose.

— IT appears that THE NEW YORK CHRYSANTHEMUM SHOW recently held was an important exhibition, about 8000 cut blooms and 400 plants being shown. Messrs. Hallock and Thorpe secured a large proportion of the prizes, and the plants sold by auction after the Show realised 3000 dollars.

— MR. JOSEPH MALLENDER sends the following summary of METEOROLOGICAL OBSERVATIONS at Hodsock Priory, Worksop, Notts:— Mean temperature of the month, 41·7°; maximum on the 28th, 57·4°; minimum on the 17th, 19·9°. Maximum in the sun on the 28th, 90·9°; minimum on the grass on the 17th, 15·5°. Mean temperature of air at 9 A.M., 40·4°; mean temperature of the soil 1 foot deep, 43·3°. Nights below 32° in shade, six; on grass, thirteen. Total duration of sunshine in the month, thirty-six hours, or 14 per cent. of the possible duration; we had seventeen sunless days. Total rainfall, 1·96 inch; maximum fall in twenty-four hours on the 24th, 0·24 inch. Rain fell on fourteen days. Average velocity of wind, 8·3 miles per hour; velocity exceeded 400 miles on three days, fell short of 100 on nine days. Sunshine was very deficient, and was only two-thirds of the average for the last five years. We stored a lot of good ice on the 20th, I have never taken ice so early before.

— THE December number of the *Botanical Magazine* gives plates of the following plants:—ALOE BAINESI, which Mr. J. G. Baker characterises as "distinctly and decidedly the finest of all the 150 different kinds of Aloe." A plant has been grown at Kew for twenty years, but has not yet flowered, the plate having been prepared from materials supplied by Professor MacOwan. It is a Cape species, reaching a height of 40 or 60 feet and bearing a large head of rosy flowers.

— IN plate 6849 is given a representation of a Chilian tree, RHAPHITHAMNUS CYANOCARPUS, a member of the Verbenaceæ family, and has already passed under three other generic names—Cetharexylon, Duranta, and Poeppigia. It forms a tree 15 to 20 feet high, densely branched, slightly spiny, with small ovate bright green leaves, and bears numerous small tubular white and blue flowers, which are followed by bright blue fruits. It is rather pretty and is hardy in Cornwall, but requires to be grown in a cool house in more northern districts. Rhododendron javanicum var. tubiflora, from Sumatra, has larger paler flowers than the type, but is not equal in beauty to many of the hybrids raised in England.

— A PRETTY but not imposing Orchid is POGONIA PULCHELLA from Hong Kong. It is one of the most recent discoveries of Mr. Charles Ford, the Superintendent of the Botanical Gardens in that island, another Orchid also having been added to the list under the elegant name of Vrydagzynthia nuda. Sir. Joseph Hooker states that the Pogonia "was

first brought to Mr. Ford in 1878 by an officer's servant, who found it on the coast of the south side of the island of Hong Kong. It was planted in the gardens, and flowered in 1879; tubers sent by Mr. Ford to Kew in 1883, and which he procured on the Lofan mountains on the coast opposite to Hong Kong. It flowered at Kew in April, 1885." The plant is dwarf with small round whitish tubers, from which arise the slender scapes of drooping flowers, the lip crimson and white, and the sepals and petals narrow, greenish brown. The leaves are pretty, veined with white on the upper surface, shaded with dark green, and reddish beneath. Two Asiatic Crocuses, Korolkowi and Aerijs, are also figured, the former yellow, and the latter purplish.

CANKER IN FRUIT TREES.

I AM well acquainted with the fact that almost every writer is against me in my conviction that insects are the cause of canker. Only one that I remember has favoured the same line as myself, and that was Mr. Harrison Weir, who had not actually seen the insects, but had cured his specimens of canker on the supposition that insects were the cause of it. I beg very respectfully to say that it does not matter who is against me, because what I write I have proved by observation and practical experiments. If I disagree from others it is with the best motive—viz., to determine the real cause of canker and its cure for the benefit of all. It is laid down for us that it is a disease. I contend that it is no more a disease than is the bite of a dog, causing injury. Insects eating the bark may always be found by careful examination on or near the spot where canker commences.

I am much obliged to "Entomologist" for his note. I ask him, if he still remembers it, whether the piece of wood sent had the appearance of having passed into a "sickly condition" except at the identical spot attacked? I have examined the tree for another specimen, but I cannot find one. It was a piece from a Cobham tree, where it is rare to find canker. And here allow me to recommend any reader who is not acquainted with this Apple to make acquaintance by procuring it. With me it is far before Blenheim Pippin for cropping, early bearing, appearance, and flavour, and as it is of the Blenheim type it readily sells for Blenheims, and commands a good price consequently.

In my opinion trees are brought into a sickly condition by having to support—unknown to an ordinary observer—thousands of minute insects in large trees, and canker follows. I could give details of interesting specimens of cankered wood placed under the microscope for the benefit of fruit-growers, who were astonished by the revelations. I enclose another small specimen of Pear tree wood showing the commencement of the so-called disease, where the insects may be seen. This is from a vigorous healthy tree, a standard in my orchard, where no one would think of canker without close examination. The small tree referred to page 376 was, I admit, a bad specimen to send, but being useless I thought it would answer my purpose. The other piece of wood before referred to was a crown-grafted tree where no ligature was used, so that that was not the cause of canker, and I have other specimens to bear me out.

In reply to "Lathyrus," page 426, I have referred to "Entomologist's" note, but fail to find that he has "contradicted" me. I have never said a word against the "necessary preparation for the roots." I can keep Lord Suffield as free from canker as Keswick Codlin so far, and from late experience I do not think it more prone to canker than others, apart from the transference of insect life. I could give many instances bearing me out, but it would take too much space. I am a great believer and user of liquid manure for fruit trees, and I do not say a word against root-pruning where necessary. I shall be pleased to see what "Thinker" has to say, quite independent of anything I have written.—J. HIAM.

[A correspondent reminds us that Mr. Hiam has not stated his method of preventing canker in fruit trees, or, in other words, of destroying the insects that he believes are the origin of the evil.]

PRUNING DENDROBIUM NOBILE.

MR. PRINSEP, at page 495, draws attention to the above subject, which is a most interesting one; and though it has been a debated question for some time, it remains debatable, the specimens exhibited by Mr. Prinsep at Kensington last May notwithstanding. I had the pleasure of seeing the excellent wood engraving in the Journal of one of the specimens, and was greatly pleased with it; but it also reminded me that I had seen other illustrations of the same kind of plants, and the thought occurred to me that however good an example of cultural skill, under the special and unusual conditions mentioned, the plant was as exhibited by Mr. Prinsep, yet the others appear to be finer and more floriferous specimens, and those, I suppose, were grown in the old-fashioned way. To prevent any misapprehension, I will say at once that I am in favour of old and ugly pseudo-bulbs being cut away, provided they are also useless, under any ordinary cultural conditions; but up to the present time I submit that the evidence adduced has only shown that under very favourable conditions these old pseudo-bulbs may be dispensed with. There are hundreds of cases throughout the country where the satisfactory conditions of growth under the control of Mr. Prinsep and of Mr. Simpson of Wortley are absent, and it is highly important to know whether the pruning system could be advantageously followed in such cases. It would also be interesting to know whether the plants grown and treated as Mr.

Prinsep recommends would be likely to attain a "good old age," say from twenty-five to fifty years.

There is a sentence in Mr. Prinsep's note which rather puzzles me.

pleted its growth, and without having undergone any rest whatsoever, then I will confess myself a "low believer;" but if he says distinctly that he can and does grow and flower it on its current season's growth

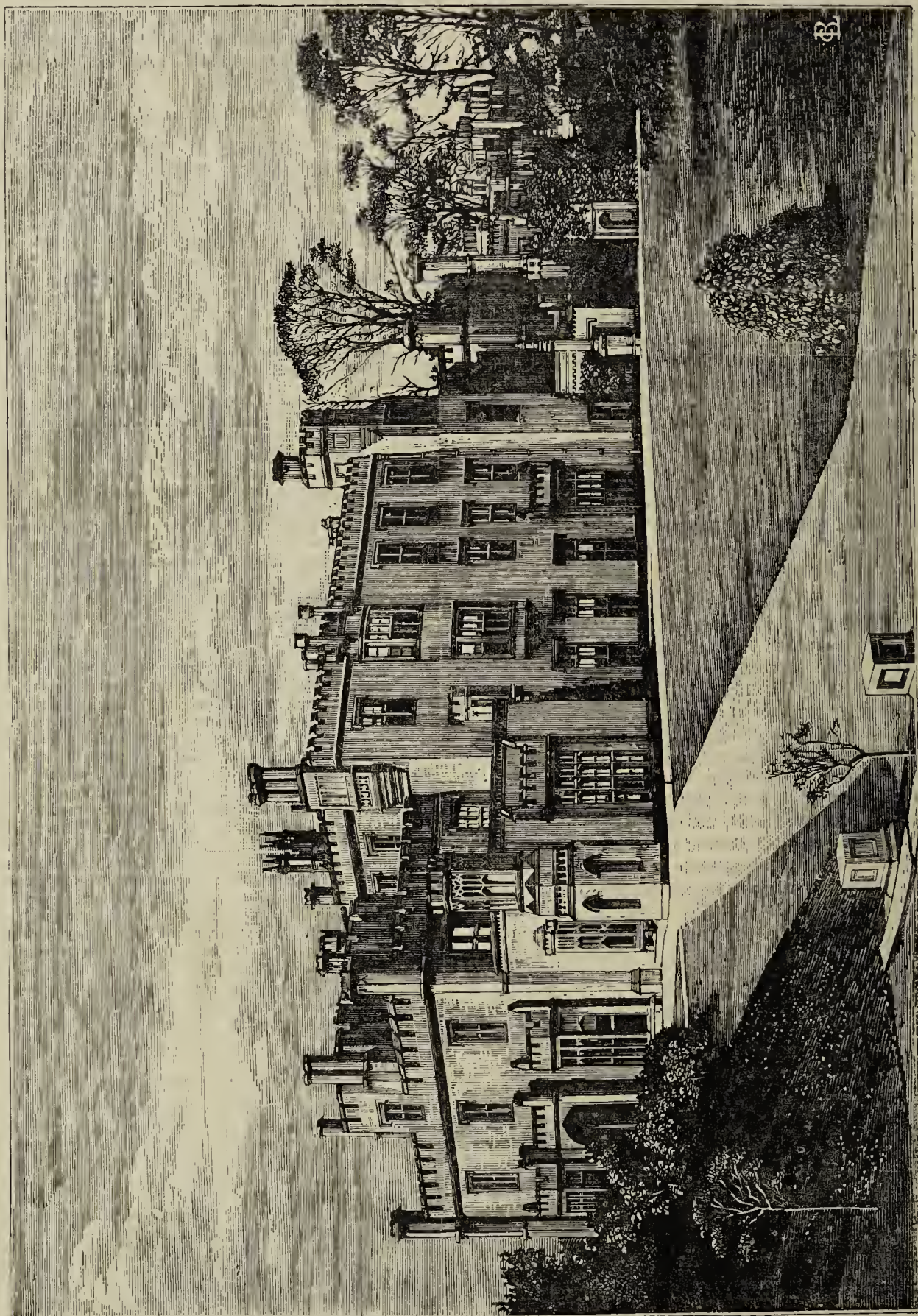


FIG. 77.—ROOD ASHTON HOUSE AND GROUNDS.

He says, "Some Orchid growers are slow to believe that it is possible to make growths and flower them in one season." If Mr. Prinsep means to say that *Dendrobium nobile* will flower freely immediately it has com-

pleted its growth, and without having undergone any rest whatsoever, then I will grant that Mr. Prinsep achieves that which few people achieved before. On the other hand, if he only means that he succeeds in flowering early next year the growths

made this year, then he only achieves that which scores have done before him, but do not make a regular practice of doing for satisfactory reasons to themselves.—READER.

ROOD ASHTON HOUSE AND GROUNDS.

ROOD ASHTON HOUSE is a beautiful Gothic mansion situated about three miles from Trowbridge and about one mile from the village of Steeple Ashton. Its present popular proprietor is Walter H. Long Esq., M.P. for the Northern Division of the County of Wilts, D.L. for Wilts, and J.P. for Wilts and Somerset. Mr. Long is descended from a family of the same name which has for centuries been honourably connected with the county, and various members of the family have been known to serve it in Parliament since the year 1433, certainly a good reason why Mr. Long should still represent us. The family originally lived at South Wraxhall, and according to Leland, the first known ancestor was "One Long Thomas, a stout felawe." As surnames were then becoming general this name appears to have been reversed, and the "stout felawe" became Thomas Long. We could go much further into this highly interesting subject, but except saying that Wrekeshalle (Wrexhall) is first mentioned in the Harl MSS. when "Agnes de la Ferei" was abbess in 1252, turn we to the grounds.

Alighting at the railway station and passing through Trowbridge we very soon pass through the first lodge. At this lodge lives a very old man, who, I suppose, would rather serve Mr. Long than be Emperor of all the Russias. From this lodge to the next—about a mile and a half—is a very pleasant drive. There is a row of Fir trees nearly the whole distance each side, and all the trees are about the same height. The park is truly English, which is saying a great deal; undulating scenery, fine trees, and a lake, the latter containing tench, carp, and perch.

We at last reach the house of the head gardener, Mr. Alexander Miller, who kindly shows us everything worth seeing. First a Pine house, 44 feet in length, with some splendid specimens, and then a plant house of the same size. These houses, as well as several others, are glazed on the modern system—i.e., large pieces of glass embedded in putty, but no putty on the outside, and rivetted down firmly. This gives great strength as well as the maximum of light and heat. Now we come to ainery 100 feet in length, but in four divisions. Theinery contains Foster's Seedling, Black Hamburgh, Muscat of Alexandria, and Gros Guillaume. Mr. Miller manages to have a good succession. The Grapes in the first division are eaten, in the second ready to be eaten, third not quite ready, and so on. Mr. Miller has Grapes from April to Christmas, but by different arrangements of heating, &c., he intends having them all the year round. We now pass into another house, 100 feet long, intended eventually for Pines, &c., but at present used for a fine lot of Tomatoes.

Next is the kitchen garden, and I never saw a better. A wall all round it, not a weed inside, and completely filled with everything the palate could desire. This garden is a proof of the value of a good garden education. In the north a gardener is apprenticed, and is turned into the kitchen garden first and made to master that. He has, I believe, at least a year of that before he attempts anything with the flowers. One noticeable feature of this garden was a splendid bed of spring-sown Onions, which had attained a very large size, notwithstanding the dry season. There are several other houses for Grapes, Peaches, Figs, &c., and one long Peach house (.75 feet) full of splendid trees, both of Peaches and Nectarines. We saw some fine specimens of the Peach called "Exquisite." The wasps had found some of these Peaches exquisite, but Mr. Miller intends next year to try whether a good pail of tar will keep them out. Going out of the kitchen garden we get near to the mansion, which, loyal as we are, we could not help thinking something like Windsor Castle. The flag was flying, showing that Mr. Long was in residence. There are some fine specimens of trees here, amongst which we might mention a Wellingtonia 45 feet high, a splendid Weeping Birch, Evergreen Oak, &c. A fine specimen of *Thuopsis dolabrata* planted, we believe, on the day Walter Long, jun., was baptised, September 11th, 1879. Many other fine trees, but we must not forget an old Oak which must have stood there centuries. It is 25 feet round at the height of 4 feet from the ground, and more a little higher up. It is quite hollow, and large enough to hold several men. It forms a happy home for owls. The bark has been nailed on from time to time as it came off. We cannot refrain from mentioning one more tree, a Lime tree, which contains immense bunches of Mistletoe. We have never seen such bunches, even in Covent Garden.

The hedging out is done after the good old fashion. Plenty of Scarlet Pelargoniums and the blue Lobelia, as well as other sorts of Pelargoniums, but no carpet bedding, and here we admire Mr. Miller's taste. The borders are in the shape of various kinds of scrolls, and were designed by him. The view obtained of the flower garden from the mansion is very good indeed.

Altogether the place is well worth a visit, and through the kindness of Mr. Long the beautiful park is open to the public the whole of the year, with the exception of three days.—WALTER CHITTY.

EARLY PRUNING VINES.

THE suggestion of your correspondent, Mr. Iggulden, regarding the "effects of early pruning on Vines" was well timed from the facts he has laid before us; and there is little doubt but many will direct their attention during the next spring and summer to the spurs from which show bunches have been cut, especially those who have not been in the habit of making an "all round" shortening back.

I trust my opinion on this subject at the present time may assist in stimulating others to careful observation on all matters connected with this untimely operation, and let it be proved whether or not this denuding the Vines of a large part of wood and leaves is hurtful.

My interest in early pruning was aroused about three years ago on receiving a letter from a brother gardener and one of the most successful Grape-growers in the middle counties of Scotland, now on his way to a far-off land, where his skill and energy are to be applied to the growing of fruit on a large scale.

He said in that note he thought we are in our infancy in the management of Vines, and one of the points we are far wrong in is the pruning. After some thought he came to the conclusion we are in error in applying our labour and care to the perfect ripening of wood to be cut away in winter and burned; and in order to economise resolved to prune early, expecting what nourishment would have been laid up in the part removed would be appropriated by the parts left.

Happily the experiment was conducted on a small scale, or the quantity and quality of his crop would have been very much impaired, and I may as well give the details of procedure. My friend had the faculty of seeing a long way before him, and tried to the best of his ability to meet all demands made upon him. Not being a close pruner he found it necessary to lead up a young cane to take the place of the old one, and from this he expected to get his best show bunches. On this occasion he had an extra fine rod of Hamburgh he had specially prepared in view of a forthcoming international, which he determined to try his new idea upon. This rod was cut about the beginning of October, while the leaves were still green, to about a foot above the place where a second pruning was to be done later on. The following spring it broke moderately strong, but showed poor bunches and never attained to anything like others of the same variety growing side by side. The result from the operation on this Vine was not considered a sufficient test, as the energy of the Vine might have been crippled by the removal of the old rod at the same time with the pruning of the young one; but the same plan was carried out on the laterals of another Vine of the same sort at the same time with a like result, and proved to our minds the evil effects of premature pruning or shortening of laterals.

We often see it affirmed that root-action is late in commencing in spring; would there not be a corresponding period of activity in autumn and early winter in storing food for the spring supply? I think it has been clearly proved that the roots are active long after the leaves have fallen, and everything apparently at rest. But then, is the quality stored during this time of the same value with that previously laid up, which had gone through the regular process of digestion, while the leaves were there and at work? I think not. The future crop depends more on the quality than the quantity of stored sap, and if the source for the production of this supply be removed, to a greater or less degree will the provision for next crop be reduced.

Pruning, in my opinion, is an unnatural process, and has to be resorted to as a matter of expediency from the cramped circumstances and conditions under which growth is sought to be carried on. If this is so, the less pruning the better, and then only when everything is ripe, "Thinker" has touched very lightly on the subject. He thinks there can be no harm done in shortening early provided four leaves are left. I presume he considers these necessary to provide elaborated sap for the buds and wood in their immediate vicinity; but what of the other parts of the plant, not to mention the roots at this, of all, the most important period of preparation for future wants?

It is said that after assimilation takes place the sap has a downward tendency, and possibly the supply from the four leaves might be wanted farther down; in consequence of the supply from above being cut away, this part from where the fruit is expected next would be starved. It may be argued that this sap takes its start downwards, first at the extremity, gathering in and laying up as it proceeds, or it may be said if any part of the plant is deprived of its supply in autumn, the flow in spring will immediately rush to make it up. But these are matters beyond our "ken." Our duty is to work upon the knowledge we have, and strive energetically to obtain what we have not.

Mr. Iggulden remarks that the fine buds in some cases we see, are not what they appear to be. I think one of the causes is this system of early pruning, or before the roots are at rest, while yet the supply of watery matter suited to swell the buds for the production of gross spongy shoots is still going on, but possessing none of the qualities required for the production of good bunches. These opinions will lead to the conclusion that early pruning should be dispensed with, and as many leaves as can be exposed to light be preserved in health as long as they will remain on the Vine.—W. WILLIAMSON.

ONIONS.

I DO not think there is a more important crop grown than these. If we lose our Cabbage we can use Savoy or Brussels Sprouts. Peas may take the place of Kidney Beans, and Spinach of Cauliflower, but Onions stand by themselves, and when they are lost nothing can replace them. They are in daily demand in all kitchens of any importance, and their total absence makes it very inconvenient for the cooks and unpleasant for the gardeners. True, Onions may be bought very cheaply, but buying is not satisfactory where there is a garden. For the last twelve years at least we have never had a failure of our Onion crop. We grow upwards of a quarter of an acre annually, and we rarely lose a score of plants from any cause. The young plants grow rather better in a light soil at first, but for a really fine crop we prefer growing them on heavy land.

Here at first they may be backward, but in the end, and especially during hot weather, they swell up splendidly. When once the grubs have found their way into a few rows it is very little use in trying to get them exterminated. They hore up through the plants from the bottom, and anything which would kill them there would also kill the plants. Prevention in this case is better than cure, and now is the time to deal with preventive measures.

The Onion ground for next year should be cleared at once, dressed, and dug over. The best of all dressings we can use is gas lime. We spread about an ordinary wheelbarrow load to every 20 square yards, and then dig it in, and after this the soil will remain quite free from all insects for the next twelve months. When gas lime cannot be procured soot should be substituted at the same rate, and, failing this, a sprinkling of salt will answer the purpose very well. The manure which is used before sowing time is also freely mixed with soot or salt, and when these inexpensive precautions are taken before sowing there need be no anxiety about the crop. If all the Onions in cultivation were grown together and classified by some impartial hand I do not think the numbers of distinct sorts would exceed half a dozen. The old forms, such as James's Keeping and Bedford Champion are quite distinct. —A KITCHEN GARDENER.

SNOWDROPS (GALANTHUS).

HAVING had occasion recently to put my hardy bulbs in order, these charming harbingers of spring came in for the attention they richly merit. I am particularly fond of Snowdrops, and thought a few notes upon them as a family would be welcome. The majority of amateurs are not aware of the number of different varieties there are in cultivation; albeit, some of them are very scarce. I suppose there are only three species, but the common one, *Galanthus nivalis*, varies considerably. There are several well-marked forms. I well remember what a rich collection of these varieties the late Rev. Harper Crewe got together and cherished, some of which, I fear, are lost, but the majority passed into the hands of E. G. Loder, Esq. of Weedon, where they will be well cared for. In that excellent work, Gill's "Dictionary of Gardening," there are four figured, but there is a slight confusion in the nomenclature; the one named *G. Elwesii* is *G. nivalis virescens*, and *vice versa*, which form is extremely scarce and pretty, and I am glad to see it figured in that work. There is another named *reflexus*, which I have never seen in a living state, although I possess a reflexed form of *G. Elwesii*, but do not consider it desirable on account of the narrowness of the segments. Mr. Baker arranges *G. Imperati* and *Redoutei* under *G. nivalis*, but I am inclined to think that it is sufficiently distinct for separation. The foliage is very broad, and it is very strong-growing and much later in bloom, but this latter character may not stand for much when the variability of *nivalis* in respect to flowering is considered; for there is one variety, which is very early in the year, and Mr. Harper Crewe used to have one named *octobrensis*, which bloomed in October and November, thus vying with the winter Croci.

Happily all the best of the Snowdrops are now reasonable in price. I have seen them offered at a low figure in most lists this season, so that all lovers of them should become acquainted with at least five distinct kinds—viz., *nivalis*, *Imperati*, *Elwesii*, *plicatus*, and *Redoutei*. As they are all equally easy of cultivation, fine clumps may be made in the garden or on the rockery, or even accommodated in 6 inch or 7 inch pots, and used for the embellishment of a cool house, for which purpose they are charmingly suited. One item it is desirable to bear in mind when planting or potting, is their fondness for a little well-decayed manure; this improves them very much. *G. Elwesii* in particular develops much larger blossoms when treated to manure, and the size of this species improves greatly as it gets established, and it well deserves the title of "Giant Snowdrop" when in its best state. For floral decoration it should quite eclipse the common kind, as the flowers are much larger, of such a charming form, and with more substance in the segments, and I would strongly advise private growers who esteem a buttonhole of Snowdrops to plant it freely at once, as it is quite time it, and, indeed, all the kinds, were planted.

The common form being offered so cheaply is largely used for massing and naturalising, as the price of all the others, except *Elwesii*, prevents their being used so lavishly. I notice that imported bulbs of the latter are now offered by good houses at a low price by the thousand; and here let me caution purchasers against expecting too much from these bulbs the first season, for the flowers will certainly be small, and by the second or third season they will improve much, especially if some manure is given when planting. The following notes upon the different kinds will show their distinctive characteristics.

G. ELWESI (*Elwes's Giant Snowdrop*).—Truly the finest of

all the Snowdrops; the outer divisions are large, more rounded than in any of the others, the outline of the flower being more globular; inner divisions marked deep green at the base. This is always a distinguishing feature, whatever are the other varying characters of the flower. The flower stems grow 9 inches high when strong; leaves broader than those of the common variety, very glaucous. It is equally as early in bloom, sometimes appearing before it. Native of Asia Minor ("Botanical Magazine," t. 6166).

C. IMPERATI (the Italian Snowdrop).—This is undoubtedly a very large form of *nivalis*, but it is later in flowering. The buds are large and fusiform, quite distinct from any other; the outer divisions are long, much narrowed at the base, clear white; the inner divisions are rather deeply notched at the top, with the characteristic green blotches beneath. It is a native of Italy, and can be obtained at a very reasonable rate.

G. NIVALIS (the common Snowdrop).—This and its double form are too well known to need any further mention, but the following kinds are scarce, and some very rare indeed—*Virescens* has the inner divisions almost entirely covered with green, and a few stripes of the same colour on the outer divisions; *Shaylockii* is very similar, but the flowers are longer; *lutescens* has a decided yellowish tinge upon the inner segments and at the base of the outer ones, and is very pretty; *Melvillei* is a large form sent out some years since by Messrs. Veitch & Sons of Chelsea, somewhat resembling *Imperati*, but distinct from it; *cocyrensis* has a small flower appearing very early in January, sometimes at Christmas; it is, however, very scarce, I have only met with it once. Several others might be enumerated, but they are not to be had for love nor money.

G. Plicatus (the Crimean Snowdrop).—The flowers of this species resemble those of *G. nivalis*, except that they are rather larger and borne on much taller stalks, but the leaves are quite distinct, having a distinct fold on each side, hence the specific name *plicatus* (folded); it is rather uncommon, and never appears to be imported in very large quantities, but it is most desirable ("Botanical Magazine," t. 2162).

G. REDOUTEI (*Redoute's Snowdrop*).—Syn. *G. nivalis latifolius*. The foliage of this is bright green and very broad, much longer than any, and it is the tallest grower. It much resembles some of the Snowflakes, and is quite a departure from all the others; the flowers are rather thin in substance, but extremely pretty, well meriting a place in all collections.—R.

JUDGING PEARS AND GRAPES AT THE BATH SHOW.

I BELIEVE I am justified in stating—indeed, I claim the right to do so—that your reporter was an exhibitor, but whether a disappointed one or not I cannot say—in the fruit classes, in which, as already stated, I assisted in making the awards. I mention this fact so that your readers may the better understand our relative positions at the Show in question, and therefore be the better able to arrive at a correct estimate of what has been said by both parties on the subject. And had your reporter given his name your readers would see that I was as competent to give an opinion on fruit or any other garden produce as he is, notwithstanding his assertions (by implication, p. 490) to the contrary. Your reporter says, "Not only did I express an honest opinion (which I may remind him does not necessarily mean a correct one), but it was also the opinion of many practical gardeners, all known to both Mr. Ward and myself, and whose names I could give, that errors of judgment occurred, more especially in the Pear classes." Your reporter having made this statement for the purpose of supporting his own remarks, I think it is a pity that he should have considered it part of his duty to withhold the names of the "many practical gardeners" who were of the same opinion as himself, because had he furnished your readers with the names of these gentlemen they would then be able to estimate the "value" of their opinion.

Your reporter repeats that, "in his opinion, Mr. Taylor's Grapes ought to have been first;" and I repeat, as one of the Judges who made the awards, that they and all the other exhibits in the fruit and vegetable classes were placed in their proper positions, and that the awards were not made in a haphazard sort of way, but strictly, and with great care, in accordance with the points of merit which guide competent Judges like the gentlemen whose names I mentioned at p. 465 as being two of the most able and successful growers, exhibitors, and judges of fruit in the country, and, I may add, with whose awards I have always been satisfied whenever they have judged my own exhibits. When acting in a similar capacity myself I always endeavour, as I did at Bath conjointly with a brother gardener, to be guided by their standard of excellence and to make the awards to the most meritorious exhibits by judging them according to their individual and collective points of merit. Hence my using the names of Messrs. Coleman and Wildsmith in connection with this subject. But I certainly decline to accept the opinion of your reporter as being correct until he has shown me by practical results and consistent statements a capacity to express a sound, practical, and unbiassed opinion on a matter of such importance to horticultural societies, exhibitors, and judges alike. Your reporter finding no just grounds of defence of his criticism of the awards, misquotes me when he says that "the second-

prize stand of Grapes was not so 'gappy' as Mr. Ward represents, neither were the third-prize bunches so 'dirty,' as he states they were." This statement is wrong, as a reference to my former note will prove, as I did not use an adjective in connection with either "gappy" or "dirty." This being so, your reporter in the few sentences which I have just quoted from his note unintentionally admits that the exhibits in question were what I represented them to be—"gappy" and "dirty." Your correspondent assumes too much when he says that "it would have been better if Mr. Ward had let my criticism pass unnoticed!" Had I done so I have no doubt it would have been more agreeable to his wishes to be allowed to pose as the champion and the mouthpiece of one or two dissatisfied exhibitors. I have nothing to fear from the result of this discussion, and am not disposed to lie silent, even to oblige your correspondent. Your reporter—I wish I were at liberty to refer to him by name—says, "What if Pitmaston Duchess were in one dish, and that very small sort Winter Nelis in another?" Simply what happened at Bath—namely, that the collections consisting of twenty-four even-sized fruit of a size between the two varieties indicated, provided they were of as good quality as the fruits constituting the irregular collections, would be "placed" and the others "passed." The fact (communicated to the Journal, page 470, by Mr. Bannister) of the Committee of the Bath Show having awarded that exhibitor an equal first prize for his collection does not alter the awards of the Judges in the least, nor the merit of the collection which the Judges "passed." The prize referred to was given to soothe the feelings of—as far as I could gather at the Show—the only dissatisfied exhibitor in the fruit classes, and only goes to prove that the Committee, out of motives more charitable than wise, did that which they certainly had no right to do without having first obtained the sanction of the Judges who "passed" the said collection—a sanction which it may be rightly assumed no competent men would give. If the action of the Bath Committee in this case goes for anything it is to establish a precedent for dissatisfied exhibitors to fall back on, and one that other committees should avoid as affecting the interest and reputation of themselves as men of business and the society which they represent as a body.

I must, with the Editor's permission, return to the Grape question by telling your correspondent that it must be sufficient for him to know, as it is for me, that what I stated at page 465 in reference to the Grapes which Messrs. Nash and Taylor staged at Bath being placed in the same position at Bristol the following week is substantially correct; indeed, your correspondent almost admits as much when he says, "even if they were," two bunches only, instead of three as at Bath, were shown, adding, "this might easily have made a material difference." I should like to know in what way this could possibly have made a "material difference" in determining their respective positions. Does he mean to say that Mr. Taylor left his best bunch at home and Mr. Nash his worst? They "might" have done so it is true, but it is highly improbable. Your correspondent says, "It has yet to be proved that consistency and correctness of judgment are necessarily conjunctive." It is quite evident they are not, as is shown by your correspondent's report of the Bath Show (page 425), wherein, as I pointed out at page 466, in speaking of Mr. Taylor's second-prize stand of Alicante he hinted, and now (page 490) he says "ought to have been placed first," and then proceeds to accord the "same position" to the third-prize stand. And, again, in his report of the Bristol Show (page 476) the Grapes (Mr. Nash's) which were referred to in his report of the Bath Show the previous week as "not being well coloured" are here referred to as "being of the highest order." So much for your reporter's consistency of judgment. Your reporter says he has great respect for Mr. Nash, and I may be permitted to say that now, as at the Show, I have nothing but good wishes to offer any of the gardeners whose name your reporter has been instrumental in mixing up in this subject. But I should like to know what the respect or good wishes which judges may hear for exhibitors have to do in determining their respective positions. And these remarks are equally applicable to those who make reports of the shows.

I feel I should be wanting in respect to "A Thinker" if I allowed his remarks at page 485 on judging to pass unnoticed, and which I trust may have a salutary effect on exhibitors, press attendants, judges and committees alike. It is, as he states, an established practice for press attendants to judge the awards of the adjudicators, and for my part I should be sorry if it were otherwise. I know that errors of judgment do occasionally occur, but very rarely indeed when the awards are made by successful growers and exhibitors of plants and fruits in the respective classes. I am aware that it sometimes—though happily very rarely—happens that men who had not previously attended a show in any other capacity than that of a visitor or an unsuccessful exhibitor have been selected by the "committee of management" to determine the relative merits of the exhibits of practical men, and I need not say with what results. Here the practical press attendant points out the inconsistency and unjustness of the awards; and, having made himself acquainted with the unfitness of the men to perform such important duties, he censures pretty strongly—if not, he ought to, not the men who doubtless made the awards to the best of their judgment, but the committee who was responsible for the selection, and who ought to have chosen men of ability and paid them for their work. If the Judges erred in their awards in one of the Grape classes at Bath the Judges at Bristol, both excellent fruit-growers, repeated that error. I also beg to remind "A Thinker" that I did not, and never have done so, "advance the principle of uniformity throughout a collection as being of greater moment than individual merit, either of Pears, Chrysanthemums, or anything else;" but what I said, and say still, that "uniformity throughout a collection in connection with individual

merit should guide the Judges in making their awards." And if any practical man tells me in these columns that this dictum is not sound I will say no more on the subject. The collection of Pears which secured first place consisted of good-sized, even, clean, and ripe fruits of Marie Louise, Louise Bonne of Jersey, Beurré Bosc, Beurré Diel, Beurré d'Arenberg, and medium-sized fruit of Van Mons Leon Leclerc under the name of Beurré de Capiaumont, and which the gardener, who made the report of the Show for this Journal, admitted at the time was wrongly named, although it afterwards crept into his notes somehow under that name. I merely mention this for the information of your able and unbiassed critic, "A Thinker," as he has referred to this somewhat small Pear as being "extraordinarily large or the others correspondingly small" to make the collection uniform in point of size. I may add that the second and third-prize collections were composed of similar varieties of a high order of merit.

Accepting "A Thinker's" improved illustration of stands of six incurred blooms of Chrysanthemums on the score that they are regularly seen and judged at shows. In one stand the blooms decrease gradually in size from the back row to the front (which was not the case with Mr. Bannister's Pears, inasmuch as two varieties were larger than the fruits on the other three plates, while those, Pitmaston Duchess, on the sixth plate were considerably larger than any of them). This stand receives a total of twenty-six points. The stand in competition is so even that the blooms examined individually are worth four points each, or a total of twenty-four points. "A Thinker" then asks if it would be right to give the first prize to the stand that loses in intrinsic merit—he it observed he allows nothing for evenness of collection—by two points, and the second prize to the stand that wins by that number. Now if evenness of collection count for nothing, I ask, How is it that we invariably find in the special reports of the metropolitan and provincial shows the expression that "so-and-so was first with a good 'even' collection of fruit, vegetables, or plants, or, as the case may be, 'even' stand of Roses, Dahlias, or Chrysanthemums?" It is the same with a collection of Grapes. Evenness of bunches throughout should count in connection with individual and collective merit. I join with "A Thinker" in saying that there can be no fairer subject for criticism than this, and in expressing a hope that nothing but good feeling and fellowship may prevail in any discussion that may ensue. In conclusion, I may be permitted to say that in what I have here written there has been no intention, consistent with defending my own case, to wound the feelings of anyone. It is one thing to make a charge, but quite a different thing to adduce facts to prove that charge; neither can the groundlessness of a charge, however slight, be conclusively proved in a short paragraph. Hence my apology for this rather long letter.—H. W. WARD, Longford Castle.

[We have received a letter from Mr. Bannister, in which he states the weights of the Pears (four fruits to a dish) in his Bath collection, except as regards the Pitmaston Duchess, which were given away by the owner of them the day after the Bristol Show, where the collection was awarded the first prize "against fruit much superior to that staged against them at Bath." The Judges of the Pear classes at Bristol were Mr. Thomas Shingles of Tortworth, and Mr. John Austen of Witley Court Gardens, who both in letters before us testify to the excellence of the fruit. The weights of the four fruits in each dish were—Conseiller de la Cour, 32½ ozs.; Doyenné Boussoch, 32 ozs.; Marie Louise, 29 ozs.; Glou Morceau, 27½ ozs.; Easter Beurré, 27½ ozs. Mr. Bannister says the Bath Committee awarded him an equal first prize after both himself and Mr. Ward had left the Exhibition. Whether this is a wise innovation or not is a fair matter for discussion, as also is that of the principle on which products are judged as to whether the general evenness of a number of fruit or flowers in a class shall have greater or equal weight with the merits of the dishes or blooms as determined individually. When general evenness is combined with individual excellence there is obviously no question for discussion. Mr. Ward having defended himself fully as a Judge at the Bath Show the discussion on that particular subject must cease. On this account we do not insert a long letter from "A Bath Amateur," the publication of which could not possibly do any good. It may be condensed into half a dozen words—"The report of the Bath Show was a fair one."]

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 8TH.

THE last meeting of the year was a small one, very few exhibits being contributed, and it formed a most striking contrast to the extensive and beautiful shows that have been held in the conservatory during the year.

FRUIT COMMITTEE.—Present: Harry J. Veitch, Esq., in the chair, and Messrs. John Lee, J. Burnett, J. Willard, J. Woodbridge, G. T. Miles, G. Paul, F. Rutland, R. D. Blackmore, and G. Bunyard. The most interesting exhibit were some bunches of the black Grape Winter King, shown by Mr. B. S. Williams, but although it has been previously exhibited several times the Committee expressed no opinion concerning its merits. It is said to have been raised in this way. Five years ago Gros Colman was grafted on a Vine of Raisin de Calabre and produced a different variety in colour, berry, and flavour. It has now been grown for two years on its own roots, and bunches have been twice shown from Vines so established. The berries are oval, of good size, with a thick skin and a brisk rather pleasant flavour; the bunches are compact without shoulders, and bear an excellent thick bloom. It is a good-looking variety, and is distinct from Gros Colman. Several varieties of Apples were shown for the opinion of the Committee. Mr. A. Miller, Rood Ashton Gardens, sent fruits of a variety called the Rood Ashton Seedling, thought to be something like Greenup's Pippin, but it was passed, one fruit being over-ripe. Mr. J. C. Parker, Broxbournebury, showed a seedling Apple not considered of special merit. Mr. T. Woodford, nursery

man, Atherston, sent samples of an Apple called Packington Free Bearer, a local dessert variety in use November and December, said to be a very free bearer. The Committee thought it "a nice Apple, but not so good as others in cultivation." Mr. Hutchison, Haggerston Castle, Northumberland, also sent an Apple of oblong form, but unnamed.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair, and Messrs. James O'Brien, Henry Williams, H. M. Pollett, J. Dominy, H. Ballantine, John Fraser, T. Baines, J. James, H. Herbst, W. Bealby, H. Bennett, J. Child, Shirley Hibberd, James Douglas, H. Cannell, W. B. Kellock, M. T. Masters, James Hudson, H. Turner, G. Duffield, and F. R. Kinghorn.

Sir Trevor Lawrence, Bart., M.P., showed several interesting and beautiful seedling *Calanthes* from *C. vestita*, *C. Veitchii*, and others, one of the best being *C. porphyrea*, which was certificated. *C. burfordensis* has a large rich crimson flower, similar to a highly coloured *C. Veitchii*; *C. amabilis*, also one of the *Veitchii* group, and has rosy flowers with a white eye; *C. aurantiaca*, one of the *vestita* section, has white flowers and a deep orange centre; *C. casta*, of the same type, being pure white. They are all very beautiful forms, and attracted much attention. Messrs. J. Veitch and Sons, Chelsea, showed a plant of *Chrysanthemum Domination*, a free-flowering variety with white, flat, or slightly quilled, spreading, and drooping florets. *C. Dorman*, Esq., The Firs, Laurie Park, Sydenham (gardener, Mr. White) sent a plant of *Odontoglossum Humeanum*, with white flowers—the lip white, the sepals brown, and the petals barred with yellow at the base. It is like a fine *O. maculatum*. W. Vanner, Esq., Camden Wood, Chislehurst, sent a specimen of *Barkeria Vanneriana*, with lilac purple flowers, narrow sepals and petals, with a white blotch in the lip. Mr. Rallend, Hampstead Heath, showed a distinct variety, said to be a sport from *Chrysanthemum Duchess of Albany*, which in general character much resembles *Belle Paule*, the florets recurved or drooping, slightly fluted, yellow edged with red. Mr. J. James, Woodside, Farnham Royal, exhibited plants of *Primula Purity* and *Argus*, both Fern-leaved, the former with a large, substantial, well-formed, pure white flower; the other of a crimson tint. Messrs. J. Carter & Co., High Holborn, exhibited stems of *Boussingaultia baselloides*, a peculiar trailing plant from South America, with slender stems bearing numerous tubers. A vote of thanks was awarded.

Messrs. H. Cannell & Sons, Swanley, had a beautiful collection of Zonal *Pelargonium* blooms, comprising the following admirable varieties:—*Kate Greenaway*, bright pink; *Norah*, bluish whitis; *Crocus*, scarlet; *Eurydice*, bright pink; *Jealousy Improved*, orange scarlet; *F. Kauffer*, violet crimson; *Queen of the Belgians*, pure white; and *Swanley Gem*, salmon with a white eye, very large and handsome. A stand of the superb double Ivy-leaf *Pelargonium Madame Thibaut* was also shown, the flowers of good form and very full. A collection of single and *Anemone Chrysanthemums* tastefully arranged also added much interest to this collection. A silver-gilt Banksian medal was awarded to Messrs. H. Page & Son, Teddington, for a group of about 300 *Cyclamens* of varied tints, the pure white *Albion* being exceedingly fine, as also were *Queen of the White* and *October White*.

First-class certificates were awarded for the following plants:—

Calanthe porphyrea (Sir Trevor Lawrence, Bart., M.P.).—A lovely hybrid partaking of the *hematodes* in the form of the flower, the lip cupped and spurred, light in the centre with a few darker spots, the other portion with the small acute sepals and petals being brilliant rosy crimson.

Chrysanthemum Boule de Neige (R. Owen, Maidenhead).—A decorative reflexed variety of great merit. The blooms of moderate size, the florets flat, equally spreading, and pure white. The plant is dwarf in habit, very free, and late.

Chrysanthemum Queen of the Yellows (H. Cannell & Sons).—A single variety with even-spreading bright yellow rosy florets. Very neat and pretty.

SCIENTIFIC COMMITTEE.—The Hon. and Rev. J. T. Boscawen in the chair *Sclerotia in Stems of Chrysanthemums*.—Examples of these described by Mr. W. G. Smith in *The Gardener's Chronicle* were forwarded by him, as also an abnormal form of *Lentinus lepideus* (Agaricini), closely resembling a branching *Clavaria*, from a coal-pit near Stoke-upon-Trent. It is often phosphorescent when in this state in mines.

Produce of Large Palmate Potato.—A Potato much resembling a hand in form was sent to the Scientific Committee in November, 1884. It weighed 15 ozs. On being planted the produce in 1885 was 8 lbs., or more than 800 per cent. Such a result would seem to corroborate those at Chiswick—namely, that whole sets usually give a much greater produce than those which have been cut, the former presumably supplying more nourishment, and, therefore, greater vigour on commencement of growth.

Results of Experiments on Earthing of Potatoes at Chiswick.—Dr. Masters brought a preliminary report, observing that through the absence of *Peronospora*, as in 1884, the object of the experiment failed; but the general results of produce under the different methods of treatment corroborated those of last year. He summarised them as follows:—1, Earthing up produces a crop of more uniform and of superior quality, even if less in quantity; 2, that bending the haulms occasions a diminished yield; 3, that a larger aggregate produce is derived from planting whole tubers than from the employment of cut sets. It was suggested that the Sub-Committee should continue the experiment next year, but with fewer rows, and confine the observations to testing the Jensenian method of moulding should the disease occur.

Delphinium, fasciated.—Mr. Boulger exhibited specimens, about 5 feet long, which had occurred on the same plant for two or three years. Dr. Masters observed that a *Holly*, var. *Doningtonensis*, is particularly liable to fasciation, as also are the *Hollies* at Bearwood, Bagshot. Mr. Boulger was inclined to attribute it to poverty of soil. Hon. and Rev. Mr. Boscawen remarked that fasciated stems often occurred from the same root of *Asparagus*.

Reserve Materials of Plants in Relation to Disease.—Rev. G. Henslow called attention to a paper by Mr. D. P. Penhallon in the "Canadian Record of Science" (vol. i., No. 4, October, 1885), in which the author fully corroborated a single result of a large series of experiments carried on at Houghton Farm in 1883, to ascertain (amongst other objects) a cure for Peach Yellows. In only one instance was the Early York Peach very decidedly benefited by the special manures applied, and that was with muriate of potash. "Instead of small abnormal and coloured leaves in early

July, the foliage developed into organs of good size and a fine healthy colour, while the growth was also fine (1883)." The cause of the disease he had found to be localisation of starch in the bark, &c., during the summer, instead of its being utilised for growth. In the author's latest communication he calls attention to the fact that in 1871, Wobbe and Schröder demonstrated by their experiments on Buckwheat the influence which may be exerted upon the distribution of reserve material by an abnormal food supply. Chlorine and potash were found to have important bearings upon the products of assimilation; potash being essential to the formation of reserve matters, while chlorine was found to bear a most important relation to their final distribution, and that by withholding chlorine, starch accumulated in the bark and leaves, particularly in young growth. Restoration of chlorine gradually effected the distribution of starch and restored the normal state of health. Acting on these results, and applying them to the case of Peach yellows Mr. Penhallon gives the following analyses to show the beneficial results of a similar application of chlorine.

	FRUIT OF CRAWFORD'S EARLY.		WOOD OF DITTO.	
	Healthy.	Diseased.	Restored.	Diseased.
Ferric acid.....	0.58	0.46	0.52	1.45
Calcium oxide....	2.64	4.63	54.52	64.28
Magnesium oxide..	6.29	5.49	7.58	10.28
Phosphoric acid ..	16.02	18.07	11.37	8.37
Potassium oxide ..	74.46	71.90	26.01	15.67
	100.00	100.00	100.00	100.00

These analyses, before and after the application of the muriate of potash, made it at once clear that in the diseased the ash contains more phosphoric acid and lime and less potash. Consequently a number of diseased trees were treated with muriate of potash. "After the lapse of a few years they lost all appearance of disease, and were restored to such a condition of health that up to the present time they have been most profitable in their production of fruit." . . . Hence, "So far as chemical data could determine, the disease was caused by, or, at least, associated with, imperfect nutrition (1885)."

Crocuses, Dried Specimen of.—Col. Clarke exhibited a series of twenty-five species, illustrating the various characters of the perianth and stigmas, the latter organ being regarded as an important classificatory character.

The Chairman.—As this was the last Meeting a vote of thanks was proposed by Dr. Masters, and seconded by Col. Clarke, to the Chairman, Sir J. D. Hooker, and the hope was expressed that he would continue to hold the office in the ensuing year.

PINE APPLE PLANTS IN WINTER.

THE wintering of Pine Apple plants is a more difficult matter than growing them in summer. Those with perfect houses and a complete system of heating may think little or nothing about getting their plants safely through the winter, as the change from summer, so far as heat is concerned, will be slight; but many others with old houses and pits and deficient heat, will be less sanguine, and may experience much difficulty in keeping the plants healthy. We have only one row of 4-inch piping round our Pine house here. It is rather a large lean-to house, and from October until April the temperature is often so low as 40°. A pit for successional plants is much the same, and gave us a great deal of anxiety; but I do not mind it much now. At first we watered our plants at the roots, in much the same way as I had been in the habit of doing in a temperature of 65°; but this I soon found would never do, as the foliage became quite yellow by the spring and the plants so unhealthy that it took them a long time to recover after the good weather came. This does not happen now, however, as we have got into the habit of dealing very sparingly with the water in the winter. Suckers potted in September have received no water as yet, and probably they will not be given any until after they have been transferred to their fruiting pots in March. They are plunged in leaves with a gentle bottom heat, and the condition of their soil might be termed rather dry, but they root freely in this, and the leaves are as healthy and green as we could desire.

The successional plants were watered about the middle of October, and unless it is those which are started into growth in January, no more water will be given them until March. Those in fruit receive a little more water, but very little, and it is always mixed with a small quantity of guano. Altogether the whole of our Pines are kept decidedly on the side of dryness from October until March, and in my opinion it is simply astonishing how well they succeed in a very low temperature when particular attention is paid to this condition.—J. MUIR, *Margam*.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE CABBAGE.

(Continued from page 365.)

BOTH in gardens and in fields the Cabbage suffers from insects which would often be greatly reduced in number, or altogether absent, were more care bestowed upon the soil previous to sowing or planting. Rotation of crops, too, is a capital practice, but sometimes the result is that the enemies of one vegetable, having done execution upon that, are left, almost undisturbed, in the ground ready to begin operations upon another vegetable that next occupies the space. Not unfrequently it happens that Cabbages are grown upon land where there has previously been corn, grass, or Turnips. It does not surprise us, then, to hear a complaint that they have gone wrong through the insidious attacks of wireworm or the crane-fly maggot, involving trouble and loss which might have been avoided had suitable measures been taken. One important point is, with reference to the wireworm especially, that, as far as possible, the soil should be well broken up, no lumps of earth or tangles of roots being left

for this insect to shelter in. Gaslime, well worked in, is a capital application where the presence of either of these insects is a known fact, although a correspondent has recently stated that he found the wireworm defied this agent; I can hardly believe that would happen, provided the article was good and rightly applied. Any stimulating manure, chemical or other, when freely mixed with the soil before planting Cabbages, will lessen the probabilities of injury from these and most subterranean feeders. Some advise the paring and then burning of the surface of soil that is infested with the crane-fly maggot. This will certainly prevent after mischief by stamping out this insect in that particular spot, but there are some objections to this proceeding unless the case is a serious one.

Passing, however, from the larva of the crane-fly, one chiefly a foe to the cereals, and only now and then damaging to Turnips and Cabbages, we come to the larva or maggots of other flies that do special damage to the latter vegetable. Happily the season of 1885 having been dry has not favoured the increase of several of the Cabbage pests, and the maggot of the Cabbage fly (*Anthomyia Brassicæ*) though it has been noticed in gardens and fields, has not been greatly injurious. Had there fallen heavy rains during the summer the plants might have died off frequently from the combined influences of heat and moisture after they were weakened by the attacks of the insect, which bores into the roots and the base of the stem, feeding concealed till mature. It then quits the plant and shelters under the earth, the fly appearing in two or three weeks. The last brood of the season remains, however, unchanged through the winter, to emerge winged during the spring. The reduction, or killing off, of this brood is therefore an important point, and the best step to take is to clear away the surface soil in October or November about autumn or winter Cabbages, for it may contain pupæ of the insect. It is also very undesirable to grow Cabbages year after year on the same ground, a plan which saves the flies the trouble of a journey. To distinguish this fly from other species, it should be stated that the legless tapering maggot is of a whitish colour, with two brown points at the tail, in length scarcely the third of an inch. The pupa is of a reddish brown, slightly spotted with black. In its perfect state the insect closely resembles the Onion fly, but is less, and has more dark markings upon the slender body than that insect possesses. The Onion is never touched by the larva of the Cabbage fly, but it makes occasional attacks upon the Turnip. There is evidently a rapid succession of broods during the summer, perhaps four or five some years, varying with the weather. Manuring, especially if superphosphate or ammoniacal compounds be used, strengthens Cabbages against this pest.

Of minor importance is the insect popularly called the root-eating fly, and *Anthomyia radicum* by Curtis, distinguishable from the preceding by the fact that the larva or maggot, though similar in size, is of darker hue, being yellowish or brown, but the pupa, on the other hand, is much paler in colour than that of *A. Brassicæ*. There is not much difference in their habits, only the maggot of *A. radicum* devotes itself almost entirely to the roots of the vegetable, seldom advancing upwards into the stem. Some districts of Germany have been greatly troubled with this insect, and on the Continent it has been noticed that the larvæ, in some summers, occur very numerous in dung; hence, where this article is applied as a manure, it is no wonder to find the Cabbages and Turnips (and possibly other vegetables) injured subsequently. It has been stated that where spent Hops can be obtained, if they are distributed round the stems of Cabbages, they check the increase of this species, and also of other insects that are apt to give trouble.

Enemies, which from their minuteness may seem to be despicable, yet by their numbers accomplish mischief in sundry cases, as does the little fly *Aleyrodes proletella*, or the Cabbage powder-wing, one responsible for the browning or withering of many Cabbage leaves, especially during autumn. Looking like a tiny whitish moth, and akin to a well-known pest of the Tomato, it is really a species of bug, and pursues the same plan as the scale insect, clinging to the leaves closely, while it exhausts them of their juices by means of a rostrum or sucker. We may find this insect upon Cabbages in any month of the year, but the autumn shows us most of them, at least in the fly state. As much harm, or more, is done by the larva or grub, which, from its small size and pale hue is usually unnoticed by gardeners. Burning all leaves seen to be infested is an obvious precaution, and plants that are beginning to languish may be syringed with clear lime water, tobacco water, or a solution of softsoap.

Then, although Cabbages may be noticed to have feeding upon them more than one species of aphid or "blight," there is a species that is peculiar to the plant, and so is called *A. Brassicæ*. These occur during the spring and summer, and even late in autumn they will be discovered sheltering in the folds of the leaves. The young Cabbage aphid is yellow, when older it becomes greyish green; the winged form is of a brighter green, the head, legs, and antennæ dark. For killing this pest the usual syringings or drenchings are applicable, or dusting at an early period with lime or soot. The drier the plants, especially if the weather be warm, the greater the increase of the aphides, which then appear winged and distribute themselves in various directions. Keeping the Cabbages well watered is at all times a check upon the progress of this enemy.

Occasionally the roots of Cabbages are covered with galls that usually appear in clusters, but are now and then solitary protuberances also arise from a vegetable disease called "club" resembling these; the galls, however, on opening are discovered to have within them a plump yellowish maggot which the other swellings lack. This maggot in due time develops into a small beetle or weevil named *Centorhynchus sulcicollis*, quitting the root-gall ere pupation to enter the soil, where it makes a cell, mixing particles of earth with a gummy secretion. It has been noticed that these grubs can bear a cold which freezes their juices.

The perfect insect is of a very dark grey, having a long beak and ten narrow lines along the wing-cases; it only measures an eighth of an inch. Having quitted the ground, after a little while the females re-enter it to place eggs upon the roots of the Cabbage; to mix into the surface soil such substances as gas-lime or soot is, therefore, likely to have a deterrent effect upon them. The common practice of leaving about in heaps the stumps of Cabbages with roots attached has helped to multiply this weevil, which, where its maggots are numerous, weakens the plants, though it seldom destroys them. Young Savoys, it should be added, sometimes have their rootlets attacked by the maggot of a small fly, *Chortophila floccosa*, which nibbles these until the plants perish from exhaustion. And, lastly, we may in some seasons find ants crowding upon young Cabbages. What harm they do we cannot exactly say, but it is just as well to clear them off, as for instance by well watering with a decoction of quassia.—ENTOMOLOGIST.

THE INDIGO PLANT (*INDIGOFERA TINCTORIA*)

THE uncertainty of the indigo crop is as proverbial as that from the Hop plants in England. In Bengal the crop is particularly subject to be



Fig. 78.

destroyed by the annual inundation of the river, if it occurs earlier than usual. A storm of wind, accompanied by rain and hail, as completely ruins the crop as if devoured by the locust; neither from this latter scourge is the crop exempt.

This proneness to injury extends throughout its growth. The seedlings are liable to be destroyed by an insect closely resembling the Turnip fly, as well as by the frog. Caterpillars feed upon the leaves of older plants, and the white ant destroys them by consuming their roots.

To these destructive visitations may be added the more than ordinary liability of the plant to injury, not merely from atmospheric commotions, but even from apparently less inimical visitations. Thus, not only do storms of wind, heavy rains, and hail destroy the indigo planter's prospects, but even sunshine, if it pours out fervently after showers of rain, is apt to scorch the plants; and if it occurs during the first month of their growth is most injurious to their future advance. The reason of this effect appears to be the violent change from a state of imbibing to rapid transpiration of moisture.

The *Indigofera tinctoria* belongs to the natural order Leguminosæ. Its leaves are pinnate, its stem shrubby and erect; its flowers in racemes are pale with a red keel and vexillum.

VALLOTA PURPUREA.

As an autumn-flowering plant I think *Vallota purpurea* ranks amongst the best of our greenhouse-flowering plants. Several came into bloom in the middle of September, and have lasted to the present time. I find them more useful at the time above-mentioned than in the beginning of August, and they last twice as long. It is a mistake to over-pot them, and the drying system practised by some gardeners is wrong. The *Vallota* is an evergreen bulb, and must never be allowed to get dry at the roots. My plan is to pot in March three fair-sized bulbs into 8-inch pots, the compost to consist of strong loam, a sprinkling of sand, and as a manure I think there is nothing to surpass sheep manure and a little soot. I keep the plants in a shady part of the greenhouse after potting till the end of May, when they may be shifted into a cool frame fully exposed to the sun. They require an occasional watering with liquid manure. I find plants potted in late autumn come in bloom earlier than those potted in spring.—W. ROBERTS, *Llynghuarn, Machynlleth*.

NEW HOUSES AT CLEVERLEY, ALLERTON.

In the gardens of T. Sutton Timmis, Esq., Allerton, can be seen one of the most compact and convenient ranges of glass houses that it is possible to find in any garden about Liverpool or probably anywhere else. The houses in question have only recently been erected, and therefore are not yet thoroughly furnished with plants, but it is not my intention to note many particulars about these, but certain arrangements in the construction of the houses demand notice.

Several horticultural builders were invited to furnish designs, and the one selected as the most suitable was the work of Mr. T. Hill, Woolton, to whom the construction of the houses were entrusted. The houses are all built in a block and are twelve in number, nine of which lead out from a lean-to corridor 120 feet in length. This allows of the whole of these houses being passed through without going outside. Eight of the houses leading out of the corridor are span-roofed, the other one being a lean-to and built to fill up a rather peculiar corner against the end wall, which if left would in some measure have destroyed the finished appearance which these houses now present. Four houses on the west side are devoted to plants, and these are longer than the remainder, which are utilised for fruit. The remaining three houses run parallel with the corridor and at the ends of the fruit houses; these are span-roofed structures about 20 feet long each by 12 feet wide. These are built for Cucumbers, Melons, and Tomatoes; good crops of the latter were hanging in one of the houses. Winter Cucumbers filled the second, some good *Calanthes* and *Nepenthes* the third. Amongst the latter *N. Mastersiana* was very noticeable.

The front entrance is on the west side and in full view of the mansion, but some distance away; in fact, this entrance is arranged to face a walk that leads from this portion of the ground to the mansion and pleasure grounds. The entrance to the houses is very neat, and opens into a very comfortable little apartment furnished with seats and chairs, also a few suitable plants and climbers which are intended to furnish the sides and roof. The house to the right of the centre upon entering is for Azaleas and other greenhouse plants, while the one joining the corridor has the centre filled with *Camellias*. Beds are arranged on each side, *Lapagerias* being planted on the shady side and *Roses* on the other. The wall end of this house is also planted with *Camellias* and other suitable wall plants. Round the sides narrow stages will eventually be erected. In these, as well as the two following houses, the doors are 3 feet 6 inches wide, and the space can be made 20 inches wider by a simple arrangement, so that large plants can be passed in and out without fear of injury. On each side of the door is a wide sash which, on the opposite side to that the door is hinged to, is arranged to open the same way as the door, while the doorpost can be removed by drawing a small brass bolt and then lifting it out of the way. This then leaves an open space of 5 feet 2 inches, through which very large plants can be passed. This is decidedly the best arrangement of the kind I have seen, and exhibitors of large plants intending to erect houses would do well to make a note of it.

The two next houses are devoted to stove plants. The first will be maintained at stove heat proper, in the other at an intermediate temperature. This is arranged so that stove-flowering plants while in bloom can be placed in the cooler house of the two, where they will last double the length of time as would be the case in the close moist atmosphere of the hothouse. Several good *Crotons*, *Stephanotis floribunda*, *Allamandas*, *Anthurium Andreanum*, and *A. Schertzerianum* are already occupants of these houses. The last plant named is a magnificent one, more than a yard through, and has been grown by Mr. Cromwell, the able gardener, since it had four leaves, but not in these gardens, for when his previous employer died the plants were disposed of, and the one in question at the sale became the property of his present liberal employer. In these houses one or two arrangements demand notice, the first being the floor, which is formed by neat cast iron gratings resting in a framework of stone or cement. Beneath these gratings the bottom and sides are cemented so as to form a shallow tank. These can be kept full of water when desired or emptied at will by lifting a plug, and the water passes into the drains. This is a capital idea, as plenty of moisture can be maintained in the atmosphere of the house by water under the gratings without the floor being wet, which renders stoves in the majority of gardens so objectionable to ladies. Round the side stages of both these houses a tray about 4 inches deep and probably 6 inches wide is provided of ironwork, in which small plants are now plunged amongst coco-nut fibre refuse in 3 and 4-inch pots for purposes of decoration. Holes are made in the bottom for all surplus water to pass away. Something of this kind is wanted in the majority of plant houses where effective arrangements are required and where the houses are required to be made as attractive as possible. Trays of this description planted with *Selaginellas*, *Panicum variegatum*, small *Ferns*, *Begonias*, *Fittonias*, and other small-growing flowering and foliage plants would present in contrast a much more beautiful and natural appearance at the front of a bank of plants than if the same varieties were arranged in pots. Few plants for edging purposes look better together than *Panicum variegatum* and *Selaginella caesia*, both of which would reach to the walk in a very short space of time, and nothing could possibly give a

more charming appearance to the sides of the houses. The plant houses are each about 36 feet long by 20 feet wide, and are somewhat higher than those devoted to fruit.

The vineries, four in number, two in each range, are about 25 feet long and the same width as the plant houses. The first in the range is planted with Black Hamburgs, the second with Alicantes and Lady Downes, the next range Muscat of Alexandria, and eventually the other house with Madresfield Court, being now occupied with Peach trees. The Vines were all planted last spring, and have made capital growth. The borders are being made on the piecemeal system, and all are inside, no provision being made for outside borders. These as well as the plant houses are well supplied with water, and arrangement has been made for a good command of warm water from the hot-water pipes.

The last house from the corridor is entered by descending one step, the only one in the whole block of houses. Although this is rather a peculiar shaped house it is a very pretty one. The wall on the side next the vineries is covered with *Selaginella Kraussiana* (denticulata). The stage on the opposite side is formed by rockwork made of sandstone, very tastefully arranged and planted with *Ferns*. Two tanks are displayed in the rock-work, and add materially to its appearance; standing just above the water in one was a fine pan of *Trichomanes radicans*. The back wall is planted with *Adiantum cuneatum*, and the stage is being filled with cool Orchids, and those already occupying the house are making strong, vigorous growth, and should do well in this house.

The corridor has a walk 5 feet wide, formed of tiles its full length, with a border 2 or more feet wide at the back, in which a collection of climbing plants are planted out to furnish the wall and roof; these will be interesting and effective when they furnish the space allotted to them. The wall has been very attractive with *Tropeolum Jarratti*, which has been freely planted to impart a brightness to this place until other plants are established. On the border a number of flowering plants in variety are arranged, and also on a narrow stage on the front between the ends of the other houses. Beneath the stage *Ferns* and *Mosses* are planted. *Roses* have been freely planted, and the whole have made remarkably luxuriant growth.

The stages in the houses are all formed of iron and three-quarter-inch slates, and have a very light yet durable appearance. The houses are well wired; in fact, the whole of the ironwork and heating arrangements are as complete and well finished as it is possible to have them. This work was entrusted to Mr. Joseph Bramham, 104, Wall Street, Liverpool, and knowing his ability and experience, I should have been surprised to find them in any other condition. The whole of the houses are heated by two of Mr. Bramham's improved saddle boilers with waterway back, and Mr. Cromwell spoke most highly of the heating power of these boilers. If I remember rightly there is no less than 10,000 feet of 4-inch piping to these boilers. The main pipes to the other houses are utilised for heating the corridor and the cool Orchid house, for the mains pass through it to the Cucumber and Melon houses. The heat for this house and the corridor rise through gratings arranged in the walk or under the front stage. The openings are fitted with zinc below the gratings so as to keep down the whole of the heat when not required. This is very good, for no heat is wasted in chambers outside, for all the pipes are inside the houses except a small length that just crosses the walk to the Cucumber houses; but this is not for more than two or three yards at the most.

The space between all the houses and a good walk the entire length of the range has been concreted and cemented, so that it can be washed down and kept perfectly clean. From this end all the rough work, such as wheeling soil for the Vine borders, Cucumbers, and Melons, &c., is done to save passing through the corridor. In fact, this is the most convenient, for the outer walk terminates in a back road just behind the boundary wall.

The potting and packing sheds are behind the corridor, also the gardener's office; in fact, the corridor leans against the wall of these buildings. Plenty of room is allowed, and the one follows the other in rotation, the packing shed being in the centre of the corridor, and opens into it, so that plants or flowers can be brought from the house to the various sheds during all weathers without passing outside. The boiler house is just below the packing shed, and receives a certain amount of light from that structure. The stokehole is rather dark, but it is in a most convenient position, and is entered on the outer side of these buildings. Plenty of gas is provided in the stokehole, and this abundantly makes up for the deficiency of natural light. The sheds are lighted and ventilated from the top so as not to destroy the uniformity of the outer wall, which corresponds with the stables and stable yard. The stables are enclosed at the end by large, wide, massive doors, and an equally substantial building was being erected on the opposite side for wheelbarrows and other implements. To the front of the houses is a capital square of ground that was being converted into a plunging and standing ground for plants.

The kitchen and fruit garden, as well as the pleasure grounds, although not extensive, were in excellent condition. Taking this place altogether, it is the neatest and most compact that I have had the pleasure of visiting for a long time.

In conclusion, I have to say that great credit is due both to Mr. Hill and Mr. Bramham, and the very highest commendation is due to Mr. Cromwell, the able gardener, for the many valuable instructions imparted by him during the construction of the houses and the other work that has been so well carried out.—WM. BARDNEY.



KITCHEN GARDEN.

AUTUMN-SOWN PEAS AND BEANS.—Where these are just peeping through the soil dust them every other day in wet weather with powdered

lime or soot. Birds, snails, or other pests may eat the points of the young plants before anyone is aware of it. When they are fairly up sift some powdered ashes and put a thick strip of these along each side of the plants. Few snails or slugs will venture over to the plants then, and we have sometimes thought they succeeded better with the ashes around them than soil. Probably the ashes are drier and warmer. Where it was neglected to sow Peas in November they may still be put in, giving them rich soil and a warm dry situation.

TOMATOES.—Our old plants have been all cleared out, the green fruits have been cut and hung in a warm house to ripen, and these will keep up a supply till the new year. Cuttings in pots should be kept in a cool house and near the glass. Protect them from frost, and they may be potted and placed in more heat as soon as the turn of the year comes. Those who have not provided a stock of plants from cuttings and wish to begin with a hatch of plants early in January should sow seed at once. Fill a number of 3-inch pots with rich soil, make a little hole in the centre of the soil with the forefinger, drop two seeds into each, cover them, place them in a temperature of 60°, do not water the soil until the plants are seen, which will be in a week or so after sowing, and by the first or second week in January there will be plenty of young Tomato plants. The object of putting two seeds into each is in case of failure, and when both grow one should be pulled up when quite small. Much sturdier plants are produced in this way than when they are raised in a crowd and transplanted afterwards.

FORCING SEAKALE.—The flavour of Seakale is always very much influenced by the way in which it is forced. Sometimes it tastes very strongly of manure. Some of the finest flavoured produce we ever secured of it at this season was forced in the following manner: The rows were 3 feet apart, and the soil to the width of 18 inches was dug out from the vacant space between the rows and banked up over the crowns of the plants in much the same way as Celery is earthed. The trenches were a little over 1 foot in depth, and they were filled up level with the top of the ridge with hot manure. This soon induced the growths to push forth strongly, and the soil which they were growing in, and had been put on the top, blanched them well. This is a simple way of growing Seakale at this season, and it is very satisfactory when the main point is considered—viz., flavour.

ASPARAGUS.—We find the roots of this force very freely this autumn. The crowns were well matured, and the produce is very fine. Those who have been waiting to give the roots a good rest before forcing may begin at once with every certainty of securing a good return if their roots are strong and healthy.

RHUBARB.—This may also be introduced to the forcing quarters in quantity, and if it is forced where it has been growing by putting empty casks upside down over the crowns and covering with a hothed, see that there is plenty of ventilation at the top of the cask to allow the steam to escape, as if this is confined it will cause the young growths to decay and there will be no Rhubarb.

MUSHROOMS FROM COW MANURE.—It may interest many who are sometimes in a fix to understand what to make Mushroom beds with that cow manure may be used successfully. Not far from where we write a large bed was formed two months ago with cow droppings and short straw from the cowshed, and for some time past this bed has been supplying Mushrooms which in size, colour, or flavour were all that could be desired.

SPINACH.—Any of this with large succulent leaves is sure to suffer if severe frost comes, and our plan is to use as much of it at present as possible and save the more hardy vegetables for further on. We have sometimes had better winter Spinach than we are using just now, as the very dry weather experienced when the seed was sown and the young plants were coming up, checked them so much that they still bear traces of it. Some may be inclined to allow such crops as this to become weedy under the impression that this is protection, but it only ruins the plants.

OLD CROPS.—Many of these may now be cleared from the ground. The whole of our Carrot ground has been cleared and dug roughly up. Beetroots have been all stored and the ground dug. All the autumn Cauliflower stumps have been cleared off, and the land limed and dug over very roughly. Should the weather remain open for another week every particle of vacant land in our garden will have been rough-dug, and should frost come on later, as it is almost sure to do, its mellowing influence will be very advantageous.

FRUIT FORCING.

FIGS.—*Earliest-forced Trees in Pots.*—The trees in houses closed in November with fermenting leaves in the pits will now be showing signs of growth by the swelling of the terminal buds, and the gradual bursting forth of the embryo fruit. The roots that were cut back will also, under the influence of the genial heat obtained from the fermenting material, be sending fresh feeders through the new compost placed about the pots. When this is the case the fermenting materials should be examined, and if the heat does not exceed 75° they may be trodden down round the pedestals and bases of the pots, preparatory to the introduction of a fresh supply from the reserve heap, which should be under a roof of some kind. At any rate, all materials used for bottom heat or plunging purposes should be properly worked and warmed before being taken in. Take care that the heat about the pots does not exceed 70° to 75°. The heat and moisture given off by the fermenting materials will greatly facilitate forcing operations by softening and greatly reducing the amount of fire heat, until we have a change to milder nights. The external temperature will have much to do with the internal temperature. On cold nights it should fall to 50°, and 55° by artificial means in the daytime will

be sufficient, with a rise of 10° from sun heat. Syringe the trees and walls with tepid water on fine mornings, and again early in the afternoon or about 2 P.M., but with the moisture arising from the fermenting materials there will rarely be need of more until the trees begin to push fresh foliage. Keep the glass clean and free from condensed moisture by ventilating on all favourable occasions.

Succession Houses.—If the pruning is still in arrear, lose no time in getting the work finished. Cut back or entirely remove old spurs, and thin out the least promising shoots that have reached the extremity of the trellis, to make room for free growth and full development of wood and foliage. As the Fig delights in heat, moisture, and good living, with plenty of light and a free circulation of air, the house should be well heated, be light and well ventilated, and generous treatment accorded, otherwise it is the most insipid of fruits. Thorough cleanliness is necessary to success, therefore spare no pains in cleansing the trees, woodwork, and walls, and paint if necessary. If brown scale has been troublesome syringe with petroleum at the rate of a wineglass to three galls of water, keeping it well mixed with the water whilst it is being applied. If applied with a brush it may be applied much stronger, or at the rate of a wineglass to a gallon of water, at which strength it will destroy all insects it comes in contact with.

CUCUMBERS.—The night temperature should be kept steady at 60° to 65°, and the day at 70° to 75°, being very careful in the admission of air, though a little should be given so as to clear the glass of condensed moisture, and give the plants the benefit of all the light possible, condensed moisture obstructing the light to a serious extent. It is hardly necessary to point to the desirability of keeping the temperature from being unduly lowered by frequent opening of the door, as is frequently done several times a day in severe weather, and which could be obviated by having the thermometer in such position that it can be seen from outside. A mat suspended over the door is also useful in preventing an inrush of cold when the door is opened. Remove all superfluous fruits from the plants immediately they show, and tie up all shoots to the trellis as they require it. Encourage vigorous growth, on which stopping should be moderately practised, otherwise very little stopping will now be required. Should mildew appear dust the affected leaves with flowers of sulphur, and maintain a somewhat dry atmosphere. For red spider sponge with softsoapy water, and if green or black aphides attack the plants dust with tobacco powder, or if fumigation be resorted to it must be done with great care and judgment.

Prepare some Oak or Beech leaves with a third of stable dung by throwing into a heap and damping if necessary, turning over when they have become warmed through outside to inside, and watering if necessary so as to secure an even and thorough fermentation of the materials, with which to make a hothed at the end of this or the beginning of the new year, to raise Cucumber and Melon plants from seed, and subsequently to make beds for planting them in.

PEACHES AND NECTARINES.—*Earliest-forced House.*—The blossom buds will now be swelling, the trees having been given the treatment advised in our last calendar, the temperature should be slightly increased in the daytime, especially when the weather is mild or marking 50° outside with a soft wind blowing. The heat should be turned on in the morning, so as to raise the temperature to 55°, and allow a rather free circulation of air, and with sun the temperature may rise to 60° or 65°. The heat should be turned off at night, so as to allow the temperature to fall to between 45° and 50°, and on cold nights it may fall 5° lower without any disadvantage. Avoid a dry atmosphere, especially from fire heat; gentle syringing the trees backwards and forwards with tepid water is of great benefit. If fermenting materials have been introduced a little extra attention should be given them in turning and additions which will impart activity to the surface roots. Give attention to the roots, and if at all dry a good application of tepid water will render the soil thoroughly moist. If the soil has left the walls, as it sometimes does during the resting period, it should be well rammed down, so as to make the water enter by the surface, otherwise it will run off without permeating the soil.

Succession Houses.—Complete the pruning and cleansing in houses intended to be closed for forcing soon or at the new year. Lay in the wood sufficiently thin to admit of the full development of the foliage, as fine fruit of good colour and flavour cannot be obtained where the young wood and leaves are deprived of the benefit of air and light. Keep all doors and ventilators open in all but actual frost; even this will not do any harm, but structures of this kind are often filled with plants, and in the anxiety to save these the lights are frequently closed when they should be open, and imperceptibly, but surely, the blossom buds swell, the idea of serving two masters being that neither do well—the plants are starved, and yet not starved enough to insure perfect rest to the trees, so that between alternate excitement and its opposite they receive a check, and if the trees do not cast the buds the blossom is weak, and sets very badly. It would be much better to have the roof-lights off altogether, and keep them off until the time arrives for closing the house. No frost will injure the trees provided the wood is ripe.

PLANT HOUSES.

Amaryllises.—Few plants are more useful for decoration than these, and when in flower they are most effective when their large brilliantly coloured flowers are elevated well above dwarf flowering plants. The habit of these plants and their slender flower stems render them most suitable for this purpose, and a few with variously coloured flowers add a choiceness and beauty to a collection of flowering plants which they

would not otherwise possess. They can easily be brought into flower during the dreary months of winter, and are therefore doubly valuable. A few well-ripened flowering bulbs that have enjoyed a good season of complete rest should now be started in a temperature of 55° to 60°, which will soon induce the flower spike to make its appearance from the side of the bulbs. If the atmosphere into which they are introduced is moderately moist no water need be given them for the first few days or a week, and then the dry soil may be thoroughly soaked with tepid water. After all superfluous water has drained from the soil plunge the pots in sawdust, cocoa-nut fibre refuse, or any similar material, to prevent having to supply water again until the plants are ready for removal to the structure where they are to be arranged while in flower. Where an annual system of potting is adopted the old dry soil may be carefully removed from their roots, which should be perfectly fresh if ripened off gradually and properly, and the bulbs in clean pots in a compost of fibry loam, one-seventh of decayed manure, and a liberal dash of coarse sand. If the soil is in a suitable condition for moisture when they are potted no water at their roots will be needed before they come into flower if the pots are plunged and the surface of the soil covered with the plunging material to prevent evaporation. By the time the plants unfold their flowers the roots will be active and working freely amongst the new soil, and if properly treated after flowering luxuriant growth will follow.

Gesneras and Tydas.—These plants will be very useful presently, and in order to retain the beautiful foliage of the former in good condition they must be arranged close to the glass in an atmosphere that is not too moist, or else the foliage will be liable to damp. Care must also be taken that no water, either through watering or the syringe, shall fall upon them, or their foliage will be browned and disfigured. These plants will do admirably on a shelf until they come into flower where the night temperature ranges about 60°. Where some of the earlier-flowering varieties are grown and have ceased flowering they must not be neglected, or the tubers will suffer, and instead of being strong and large for another year they will only be small and weak. They should be as carefully watered until the foliage naturally dies as those that have yet to flower; they should also be retained in a similar temperature. These plants are not unfrequently ruined by neglect after they have flowered. *Gesnera tubiflora* is a grand old plant but very seldom met with in gardening establishments; it is, however, worth a place in every garden, however choice or limited the collection of plants grown may be. It requires early in the season an intermediate temperature, but during summer will do most satisfactorily in a cool greenhouse or the conservatory. This flowers during summer, and is of slender growth, which attains a height of from 2 to 3 feet, and towards the extremity of the slender stem the flowers are produced which are of the purest white, tubular in shape, nearly 4 inches long, and most deliciously scented. It is a very effective plant for the conservatory during the summer, and the flowers individually are useful for bouquet-making. This variety forms tubers which very much resemble Potatoes, and can while at rest be stored away the same as other varieties. In addition to propagation by the tubers, side shoots which are freely produced from the axils of the leaves root freely, and if rooted early in the season form capital tubers in one season. Some of the tubers of this species may now be cleared of the old dry soil and repotted in fresh compost; this kind does not appear very particular about soil. If the plants are to be grown singly 5-inch pots are the most suitable for them, and they are more effective this way than when several tubers are grown together in one pot. Plunge the pots as advised for *Amaryllis* until the plants commence growing, then give them an intermediate temperature for a time.

Achimenes and Gloxinias.—Where a display of the former are required as early in the season as possible the tubers should now be sorted from amongst the old dry soil in which they have been rested. When this has been done they should be laid into pans or pots amongst light sandy soil, and placed in a temperature of 60°. If the soil used is moderately moist when the pans are filled, and they are afterwards plunged, no water will be needed until growth commences. Care, however, must be taken that the soil in which they are placed does not become dry, or they will not start freely into growth. If the soil approaches a dry state tepid water must be given, but this will not be needed if the plunging material is kept moderately moist. All that are not yet wanted for starting may be selected from amongst the soil in which they grew last year, and be laid amongst sand ready for starting at any time when needed. Where the system of raising pots and pans of these plants by cuttings is adopted the tubers may be started into growth amongst the old soil after it has been well soaked with water. *Gloxinias* should also be started for early flowering. These should be turned out of the pots in which they were grown last season and placed in boxes or pans thickly together amongst leaf mould until they commence growing. These should be placed in the same temperature as the *Achimenes*, and be kept moderately moist by syringing the surface. As soon as they have fairly started into growth they should be potted singly into 5 and 6-inch pots, or larger, according to the size of each tuber.

a lucid description of the wax-extractor, and points out the various uses to which it may be put. As the extractor I use is somewhat different from his, perhaps I may be allowed to describe, the main difference being a pipe in the centre of the upper division, which leads into a perforated tube in the tin sieve reaching about two-thirds up. By this addition the wax is extracted much quicker and more thoroughly than when the steam passes from the generator by the sides only. My extractor measures 1 foot 6 inches by 1 foot 3 inches, and the sieve is over a foot in diameter. The steam generator we use for many purposes, and could not do well without it in making comb foundation. Copper or brass would be more lasting and better for some purposes than tin.

After the steam is up and the sieve full of rich combs, should occupy not more than fifteen minutes to thoroughly drain, producing about 5 lbs. of wax each fill. When the wax has been run off it should be re-melted, and in all cases of liquefaction should be melted in double-sided vessels, glue-pot fashion, as boiling spoils wax. When a fine sample of wax is wanted the slower it is melted and the longer it is in cooling the better, all impurities getting time to settle. If the wax is melted in a cone-shaped vessel, then the impurities cover less surface and can be cleared away with less waste than when the surface is broad. For many purposes the wax so moulded requires nothing more; but where cakes of a certain size are wanted, it must be melted again, and poured into moulds of a size and shape preferred, previously well soaked in water, but on no account should soap, soda, or any grease be used; a very small portion of soap spoils much wax, while soda makes it brittle. When wax has been once spoiled by any of these ingredients no after operation will restore its flexible properties.

So far as my experience goes, no sample of foreign wax is equal to our native wax for any purpose, and realises a much higher price in the market—1s. 8d. to 2s. per lb. is offered and readily got for all samples of genuine Scotch wax. It is frequently asserted that wax does not deteriorate by being long kept in the comb state. This is a mistake; it both diminishes in quantity and deteriorates in quality, so the sooner wax is extracted after the combs are removed from the hive the better, and for that purpose it is advisable to have a little extractor, so that all scraps of comb be forthwith melted, thereby saving both wax and preventing an increase of moths.

PRODUCTION OF WAX.

I fully expected to have been able to give an accurate statement of the amount of honey required to produce a pound of wax, but an accident befel the bees I was experimenting with, so for a time I have been frustrated. But it is perhaps worth while to record the following, and it is but one of many cases that can be cited. From the combs of three "Pettigrew" straw hives 6½ lbs. was extracted. Now the bees from these hives were fed with 23 lbs. of sugar, and the hives are filled with combs, and have seemingly as much syrup as will tide the bees over till spring. But suppose each swarm carried off 2 lbs. of honey when being driven, the total would not exceed 25 lbs.; but even with this quantity, and supposing 15 lbs. is stored for winter use, 10 lbs. is all that has been consumed to form same quantity combs that fully 2 lbs. of wax has been extracted from. This at a time when we hear it prophesied that honey must be sold at 3d. per lb. is a momentous question, because if 5 lbs. of honey produce 1 lb. of wax at the present current prices, it will pay better to produce wax than honey, and thereby save all expensive packages and carriage, but it is worth while for bee-keepers to make a thorough test how much honey is required to produce a pound of wax. We are quite prepared to meet the inevitable fall in the price of honey consequent on the increasing numbers of bee-keepers, but I feel certain that so low a figure as 3d. will never be accepted by the fraternity. A combination of the bee-keepers, and the superiority of British honey over foreign, will avert any such calamity. Just as we see foreign Grapes selling at 4d. per lb., while home-raised

THE BEE-KEEPER.

NOTES ON BEES.

WAX-EXTRACTOR.

At page 481, your esteemed correspondent "Felix" gives

ones are selling at 2s. 6d., so will home honey keep the ascendancy over any foreign samples we have ever tasted.

PACKAGES FOR HONEY.

These seem to be attracting the attention of both bee-keepers and manufacturers, and while I agree with "Felix" on the point of utility I am inclined to think crystal ornaments might become too numerous in the house. We want people to consume many pounds of honey annually; we also want something very light and unbreakable. Tin has these properties; but irrespective of what scientists say, the observant housewife discovers that where honey is stored in tins there is always some of it offensive-looking close to the tin, which to eat would be folly. Glass is clean and pretty-looking, but is heavy and brittle. I do not put the same value upon the elegant package as many do. I have often thought of convenient light and cheap packages, but could never fix on one that would be approved of. Skins of various sorts I have thought of, but I have never been able to reconcile myself to them when associated with honey. I contrived a honey sack of common calico waterproofed and lined inside with white paper firmly attached to the cloth by a special paste; into this bag I put the honey, tied it, and found that it answered the purpose well, especially that of sending honey cheaply to a distance. The above description will perhaps induce some one to improve on it, and send out a really useful flexible sack.

RACES OF BEES.

I am sorry I am unable to give an accurate comparison of the different races of bees in one apiary, and under the same conditions, because the pure black bees have in many places disappeared. It is only when at the Heather that comparison can be made. The crossed Cyprians have this year again surpassed everything. Twenty-five pounds (what was believed to be common bees) was the highest make, but the crossed Cyprians rose 40 lbs. This weight was attained by all of that strain. The more remarkable because two of these stocks belonged to different persons to whom I gave queens last year.

One stock of my own that swarmed late in June gave me the highest yield, while its swarm, though three weeks behind others, weighed, bees, honey, and combs, 100 lbs. nett. The Carniolians came hard behind, and perhaps would have equalled, if not surpassed, had they been on same footing at the start. It is now eight years since I had these Cyprians from Mr. A. Neighbour, and they have always excelled. Through ill health I lost both my first imported Syrians, as well as the later imported Cyprians, which prevented me proving earlier their character and good points; but the past summer afforded me ample opportunity of testing the temper of the Syrians, and the autumn brought proof of their eagerness to breed and work. So late as November 25th I observed them collecting water, and although through the lateness of my Syrian stock I had not the opportunity of determining their honey-collecting powers during the height of the season, yet I found nuclei gathered in proportion equal, if not more, than hives of supposed natives. As I have some half a dozen stocks of Syrians in excellent condition, and judging from their anxiety to work, I am in hopes that they will prove themselves excellent honey-gatherers, but I expect a tussle with them on the score of robbing and stinging. They are perfectly harmless when left alone, but interfere with them it requires a steady nerve to handle them. This spirit appears to make them a formidable foe to all vermin about the hive. The earwig that associated itself so much with the common bee dare not venture near a Syrian. While manipulating a hive lately the earwigs ran all about, but none preferred to enter the hive. One I observed at the corner of the alighting board eyed the bees with a thievish suspicion, turned, and fled. Another, less lucky, stood in the run of the bees. One flew out, and without a seeming slackening of speed, picked it up and flew off with it.

CALMING BEES.

The most satisfactory way of calming vicious bees is to keep strangers from the apiary. Frequently they are attacked and stung, which aggravates the bees the more. Be familiar with them, and if any attempt to sting turn calmly aside, but immediately return to the hive. Let them feel your presence by touching the hive cautiously and gently. If the bees rush out a little carbolic acid will cause them to retreat, when more freedom may be used, which should be repeated at intervals until they are subdued. I never failed in subduing the most spiteful hive by this treatment if I except the Syrians.

COTTAGE BEE-KEEPERS.

I quite agree with the remarks by "Felix" on cottage bee-keepers, but with all the cottager has to contend against he will survive the longest. It is the true lover of Nature that is really the bee-keeper, and will keep bees for nothing but the love of them. The mercenary bee-keeper will sooner or later go to the wall. There are hundreds of cottager bee-keepers who thoroughly understand apiculture yet cannot explain it by writing, and could not even take a third-class certificate at the examination of the British Bee-keepers' Association, yet could give any of its first-class experts a salutary lesson in the art, as has been their wont. The true bee-keeper is not only a lover of Nature but is also a true lover of his fellow creature, and it is my lot to be acquainted with gentlemen bee-keepers whose bees do not only give him much pleasure, but many a poor invalid shares with him the bee treasures.—A LANARKSHIRE BEE-KEEPER.

THE BLIGH COMPETITION.

WHAT HAS IT PROVED TO BEE-KEEPERS?

THIS scheme originated with the Hon. and Rev. H. Bligh offering in November, 1881, a prize of £10 to that bee-keeper who could show the greatest nett profit in bee-keeping from a capital of £2, so as to be able to show cottagers what the modern system of bee-keeping would do for them. The idea was favourably received, the £10 increased to £20, divided into six prizes, but the promoters made it a condition that only members of the British Bee-keepers' Association, or of county associations in affiliation with it, were to be allowed to compete, thus showing their anxiety (?) at the outset to get hold of the most profitable system.

Only experts were requested to compete, of which seventeen entered, including Mr. C. N. Abbott, who, with nine others, failed to show at the finish; only three out of the remaining seven kept within the limit of £2, the first prize going to a committee member of the B.B.K.A., who helped to select the judges, and exceeded rule 6 (which limited the outlay to £2) by £1 7s. 4d., while another one made nearly double the amount of profit, whom they disqualified for breaking rule 6, though the published diaries do not show that he did so more than others. It appears also that the first prizeman inspected his apiary on behalf of the B.B.K.A. in his absence, and thus saw what he was doing. When he saw that he was thrown over he claimed the first prize through his solicitor, when the Committee, composed of the first prizeman and two of the judges, passed the following resolution—"Resolved unanimously, That the Committee, having appointed judges to award the prizes in the Bligh Competition, and having no reason to doubt either their competency or integrity, regard their decision as final."

In the same issue of the "B. B. J." which reports the above, is a letter from one of the judges, who says—"Rule 6 certainly was improperly worded, and we must ask pardon of those competitors who were misled, and thus, perhaps, kept back from a higher place in the prize list." A correspondent had asked, as there was to be another one, for the proposed rules to be submitted for criticism, so as to have them perfect, as what was the use of rules if not enforced on all alike? This, however, was never done, though the Editor of the "B. B. J." for October 15th, says—"The rules were again considered by the Committee, and subjected to public criticism. Various suggestions were made, and several improvements were proposed and accepted." I challenge him to prove where the slightest alteration was made in the rules, though they received the condemnation of all intelligent persons. I had intended entering myself, and working skep and frame hives in combination, had the rules allowed me to do so. However, thirty-three entries were made, of which number only nine have turned up at the finish. Of course these show a most wonderful profit account. Remember they had two good summers, and only a mild and dry winter between; but comb honey is valued at 1s. 6d. per pound, and each section called a pound whether it contains ten, eleven, twelve, fourteen, or sixteen ounces of honey; extracted 1s. 1d. per pound, and bees 4s. even at the end of August, when they can be bought at 1s. per pound, and nothing deducted for time or labour, although rule 5 says the time occupied at each visit to the apiary shall be recorded. If this has been done the Judges have carefully withheld it from the public, as no trace of it is in any of the accounts. These

nine out of thirty-three started on May 20th, 1884, with 30 lbs. 12 ozs. of bees, hived on foundation in frame hives averaging 3 lbs. 6½ ozs., each. At the end of 1884 they had been increased to twelve lots, and collected in comb and extracted honey 306½ lbs., comb honey not weighed, averaging for the nine swarms 34 lbs. each, which at 8d. per lb., the top price offered by the Reading Dépôt for comb honey, gives a return of 22s. 8d. each. On August 31st, 1885, they had increased to nineteen, and gathered this year 864 lbs. of honey (comb honey again not weighed), or an average of nineteen hives of 45½ lbs., which at 5d. per lb., the average nett amount given by the British Honey Company for comb honey, gives an average return of 18s. per hive. From these figures must be deducted the value of the bee-keeper's time employed, sugar used, and the average risk of loss—which, considering over two-thirds fell out, presumably because they had lost their bees, and all expert bee-keepers, mind, must be considerable—to be able to see what the nett profit is on bee-keeping as a business, but as the Judges and the "B. B. J." have given no particulars whatever for last year and most imperfect ones possible for this, of course I cannot tell. For instance, foundation, sugar, &c., 10s. 2½d., no particulars of the quantities, or how used, or what the &c. consisted of. The accounts, as placed before the public give me the impression that they have been shown to prevent the public from criticising the Judges' decisions, and prevent unpleasant demands for the first prize by those put out in the cold.

There is one remarkable passage in the "B. B. J." for October 15th last which I wish to draw public attention to, which is as follows:—"The nine swarms, which weighed in the aggregate 30½ lbs., have, during the fifteen months of the competition, collected no less than 1170 lbs. of honey, or an average of 130 lbs. per swarm." The Editor then goes on to value this at 9d. per lb., and makes a return of £4 17s. 6d. per swarm. Now could anything be more misleading than this? First, to call two whole seasons "fifteen months," then nineteen stocks "nine swarms," and imply two seasons' produce from these as one year's from nine! I think he is "hard up" for an argument to prove the lucrativeness of his system of bee-keeping when he has to do this. On the same lines of reasoning a man who started twenty years ago with a hive which has increased to fifty, might just as well calculate his honey returns as produced from his first one hive, and as the Editor of the "B. B. J." has several times boasted of taking from 200 to 300 lbs. of honey from a swarm of bees it is only natural to think now he got it from a large number of colonies, the offspring of one swarm, and probably spread over a number of years. If this is not so, let him explain.

In conclusion, I submit that the past "Bligh competition" has proved nothing more than that the B.B.K.A. are incompetent to carry out a grand educational and statistical idea, and that the modern bar-frame system of bee-keeping is not so profitable to the average bee-keeper, to say nothing of cottagers, as its advocates would have us believe. I do not think one in fifty, either in this country or America, has made it pay, while only one in a thousand has made great profits, and these are held up as "baits" by those interested in selling bee-keepers' supplies to draw others in, and I assert that the only class who make much profit in bee-keeping are the supply and honey dealers. Though these keep a few bees to sell, I do not know of one keeping bees to raise honey for the markets.

Things may come right in a while, but the prospect is gloomy for honey producers at present.—A HALLAMSHIRE BEE-KEEPER.

FRAME AND STEWARTON HIVES.

I WISH to make two bee hives, and should feel obliged if "A Lanarkshire Bee-keeper" would tell me what is the difference between a bar-frame hive and one of the Stewarton hives. I have only seen one wooden hive since I commenced bee-keeping; it was said to be a Stewarton hive. It consisted of four boxes, two of 6 inches deep and two of 4 inches deep, the 6-inch boxes for breeding and the 4-inch ones as supers. Please say if this is the correct style of the Stewarton hive. I remember seeing at a flower show, where prizes were offered for honey boxes, that one of the boxes was so constructed that the Judges took out the combs quite whole and returned them again. I took no interest in it at the time, but I should like now if I could get instructions how to make one like it. I am unable to understand the directions given for making "The Best Hive in Creation."—JAMES EDGAR.

[The difference between a Stewarton hive and a frame hive proper is that the former is eight-sided or octagon-shaped, consequently only four frames of one size can be got in the centre, and two of a different size for the outside, interchangeable with those on the opposite side, or as they are commonly made with four frames in the centre, the outside ones being bars only. The common Stewarton consists of three body boxes 6 inches deep, having nine bars, and whatever number of honey boxes the strength of the colony and district and season demand. These boxes are 4 inches deep, and have seven bars fastened (as indeed are all of the others) with brass screws, so that any comb can be removed. The Renfrewshire Stewarton has frames as described above, and the depth of the body boxes are 7 and 9 inches, while the supers are the same as the others. I have frequently seen eight employed on one hive at the same time, and all full. The Lanarkshire square hive, of various depths, with its divisible super, gives more central space over the combs than the octagon; but the latter is better adapted to the nature of the bees and is now in great repute both in this country and America, though it was at one time along with the octagon much abused and condemned. But, happily, bee-keepers discovered that they were under the thralldom of trade journalism, being

forced as it were through it to adopt hives unsuitable for apiculture, hence the reaction now to the mother hive of scientific bee-keeping. I cannot see where the directions for making the best hive in creation can be made plainer. It is a simple yet cheap hive, the outside being covered with thin boards lapping each other, and bevelled under the edge to give drip, the divisions or hives proper sliding upon a ledge of iron, the hives to have a mouthpiece back and front, not necessary for bees to go out and in, but to prevent their being killed when any division is drawn out or pushed in. The front mouthpiece is closed by a piece of wood fixed between the posts, which the hive receives when pushed in. The divisions must fit neatly between the posts, and when the door of the case is opened behind should show as a case of drawers. If one cannot be made from the directions given it will be advisable to get one as a pattern from Messrs. Warnock & Walker, High Blantyre Station. By studying the directions and making a start the necessary work will suggest itself as you go along, and then we may help over any difficulty you cannot surmount, if it be specifically stated.—A LANARKSHIRE BEE-KEEPER.]



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*J. S. S.*).—A good elementary work is Gill's "School of Art Geometry," price 1s., published by M. H. Gill & Son, 22, Warwick Lane, E.C. Messrs. W. & R. Chambers, 47, Paternoster Row, London, E.C., also publish elementary works on Plane and Solid Geometry, price 1s. 6d. each.

Chrysanthemums (*W. A. W.*).—Though the blooms sent are decidedly fuller than the others, they are not full enough for exhibiting and are very loose. They have been examined by an expert grower, and he is of opinion that the variety will only be suitable for decorative purposes, its pleasing colour recommending it for that purpose. The pink variety is not sufficiently distinct from Mrs. Sharpe, often called Incognita, and the bloom sent would pass for an inferior example of that variety.

Preserving Wood Trellis (*Jas. Thomas*).—The best thing to do with the woodwork would be to have it coated with creosote, the trellis being perfectly dry and the creosote applied hot, repeating until the wood ceases absorbing it. But why use wood? Wire trelliswork is not any dearer, and is when galvanised practically indestructible. Even wires along the wall are better than wood, being cheap and readily fixed by any labourer of ordinary intelligence. We have heard that petroleum is a good preserver of wood, and shall be glad to hear if any of our readers have tried it and with what results.

Vine Leaves Falling (*Merchant*).—The Vines, we should say, are in capital condition, as the wood is quite brown and the buds plump, without which the prospect of a crop next year is not good. It is not unusual for the leaves to fall by degrees—i.e., the upper part, leaving the lower part on the stalks, which will soon follow. Clear away the leaves as they fall, and keep the house as cool, dry, and as freely ventilated as the weather permits. When the leaves are all off, prune the Vines, the crop, we presume, being cleared, or if any Grapes remain they may be cut and bottled. It will suffice if the Vines are pruned between now and the new year, afterwards keeping them cool so as to insure complete rest.

Pancratiums (*H. H.*).—Pancratiums and Amaryllidaceous plants, most of them being natives of the West Indies and South America, require stove treatment, or a night temperature of 60° to 65°, but a few are hardy. We have no means of knowing to which section yours belong. If the former pot them in a compost of turfy loam with a little sand and charcoal added to keep the mass porous, and if the bulbs are in a dormant state do not keep the soil too wet. If the pots can be plunged in a warm bed of leaves, tan, or fibre, it will be an advantage, but this is not absolutely necessary. The hardy kinds are best started in pots, but in a cooler house. They produce beautiful flowers that are admired in bouquets.

Everlasting Flowers (*J. A. F.*).—The most easily raised of Everlastings are the Helichrysms, and the flowers are dried and employed in wreath-making and for other decorative purposes. The plants are raised and prepared for planting under the same treatment that is accorded Stocks and Asters. The flowers are much diversified in colour. For producing white flowers *Ammobium alatum* is very useful. Plants are readily raised from seed and grow freely in any fertile garden soil. *Antennaria margaritacea*, a hardy perennial plant 18 inches high, produces clusters of small white flowers, as does a still dwarfer plant *Gnaphalium arenarium*, the flowers of which are used for immortelle wreaths. There is no such work published on that to which you refer.

Digging amongst Raspberries (*H. H.*).—Much injury is done by digging roughly and deeply amongst Raspberries, which are essentially surface-rooting plants. Where the ground is of a heavy nature and has been made

quite firm through gathering the crops, it may be lightly pointed up with advantage, so as to admit the air without materially injuring the roots. In light soil it is not necessary to use any other implement than the hoe. We prefer to apply manure on the surface. If its appearance is objected to it may be turned lightly in with a fork, or have soil scattered over it, a few barrowfuls sufficing for a considerable space. The manure decaying on the surface, besides affording support to the canes, is valuable as a mulching in preventing the evaporation of moisture from the soil in dry weather.

Gleichenia Culture (R. G. O.).—They require to be grown in rough peat, torn in pieces with the hand and the finer particles rejected. Brown fibrous peat is the most suitable. Good drainage is necessary, and deep pans will answer quite as well as pots, they not being deep-rooting plants. The plants should be potted when they begin to grow, or early in March, and the old soil removed without injuring the roots. To the soil, before potting, add about a sixth of charcoal broken small, and a similar quantity of crystal sand. Work the soil in carefully amongst the roots, keeping the rhizomes well up, and potting moderately firm. Water thoroughly, so as to settle the soil about them, and do not water again until it is necessary, but before the plants are distressed by want of it, then giving a thorough supply. They are best in a light position, with just sufficient shade in very bright weather to prevent scorching, and should have a rather free amount of air, as they do not flourish in the close moist atmosphere of ordinary ferneries. A moderate amount of moisture only is necessary, and water should be sprinkled on the fronds. They require a temperature of 45° to 50° in winter, and 55° to 65° in spring by artificial means, and 10° to 15° rise from sun heat. The summer temperature will range 60° to 65° at night, and proportionately higher in the daytime. The chief things are an open free soil, free ventilation, and not too much water either at the roots or in the atmosphere.

Fruit Trees Cankering (An Old Gardener).—While it is not wise to be prejudiced against what you call "new notions," we think you are right in considering that the truth of the "insect theory" is not yet established beyond dispute. But this is not such a "new notion" as you appear to imagine. We have heard of it years ago, and seen the insects alluded to after the caker appeared, not before. Insects cause ulceration, as in the case of the *Aphis lanigera*, or American blight, but that is not canker as the term is generally understood. The following remarks cited from the "Cottage Gardener's Dictionary" are pertinent to your inquiry, and we have not a doubt there is a considerable amount of truth in them:—"This disease is accompanied by different symptoms, according to the species of the tree which it infects. In some of those whose true sap contains a considerable quantity of free acid, as in the genus *Pyrus*, it is rarely accompanied by any discharge. To this dry form of the disease it would be well to confine the term *canker*. In other trees, with sap abounding in astringent or gummy constituents, it is usually attended by a discharge. In such instances it might strictly be designated *ulcer*. This disease has a considerable resemblance to the tendency to ossification, which appears in most aged animals, arising from their marked tendency to secrete the calcareous saline compounds that chiefly constitute their skeletons. The consequence is an enlargement of the joints and ossification of the circulatory vessels and other parts—phenomena very analogous to those attending the cankering of trees. As in animals, this tendency is general throughout their system; but, as is observed by Mr. Knight, 'like the mortification in the limbs of elderly people,' it may be determined, as to its point of attack, by the irritability of that part of the system. This disease commences with an enlargement of the vessels of the bark of a branch or of the stem. This swelling invariably attends the disease when it attacks the Apple tree. In the Pear the enlargement is less, yet is always present. In the Elm and the Oak sometimes no swelling occurs; and in the Peach we do not recollect to have seen any. The swelling is soon communicated to the wood, which, if laid open to view on its first appearance by the removal of the bark, exhibits no marks of disease beyond the mere unnatural enlargement. In the course of a few years, less in number in proportion to the advanced age of the tree and the unfavourable circumstances under which it is vegetating, the swelling is greatly increased in size, and the alburnum has become extensively dead; the bark above it cracks, rises in discoloured scales, and decays even more rapidly than the wood beneath. If the canker is upon a moderately sized branch the decay soon completely encircles it, extending through the whole alburnum and bark. The circulation of the sap being thus entirely prevented, all the parts above the disease perish. Trees injudiciously pruned, or growing upon an ungenial soil, are more frequently attacked than those which are advancing under contrary circumstances. The soil has a very considerable influence in inducing the disease. If the subsoil be an iron gravel, or if it is not well drained, the canker is almost certain to make its appearance amongst the trees they sustain, however young and vigorous they were when first planted. All these facts before us unite in assuring us that the canker arises from the tree's weakness, from a deficiency in its vital energy, and consequent inability to imbibe and elaborate the nourishment necessary to sustain its frame in vigour, and much less to supply the healthy development of new parts. It is quite true that over-luxuriant trees are particularly liable to this disease; but over-luxuriance is really a demonstration that the tree does not digest and secrete its juices healthily." We do not consider that canker arises from either weakness or exuberance only, but both are contributory causes, and when they exist remedial measures should be adopted accordingly.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (R. S.).—1, Eyewood; 2, Chaumontel. (T. Buckersfield).—The Pear was so loose in the box and so much battered it was impossible to distinguish it. (Charles Denning).—1, Brougham; 2, Belmont. (G. Picker).—1, Colmar d'Aremberg; 4, Doyenné Boussoch; 5, Colmar; 6, Winter Nelis; 7, Easter Beurré; 8, Beurré d'Aremberg. (J. Cornhill).—The Apple sent as a seedling is marvellously like Fearn's Pippin. The other is Golden Spire.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm

boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (Slough).—*Sternbergia lutea*.

Reversible Frames (J. H.).—Your letter with a reply by "A Lanarkshire Bee-keeper" arrived too late for insertion in the present issue.

Closing Hive Entrances (R. M.).—They must not be closed entirely, but if large the apertures should be reduced. Many persons restrict them so that mice cannot enter, and yet admit air for the benefit of the bees.

COVENT GARDEN MARKET.—DECEMBER 9TH.

LITTLE alteration from last week. Supplies still heavy, especially Grapes, moving freely at low prices.

FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples	½ sieve	1 0	to 3 6	Oranges	100	0 0	0 0
„ Canadian ..	barrel	10 0	15 0	Peaches	per doz.	0 0	0 0
„ Nova Scotia ..		10 0	12 6	Pears, kitchen ..	dozen	0 6	1 0
Cobs, Kent	per 100 lbs.	22 0	25 0	„ dessert	dozen	0 4	1 6
Figs	dozen	0 8	0 9	Pine Apples English ..	lb.	2 0	0 0
Grapes	lb.	0 6	2 0	Plums	½ sieve	0 0	0 0
Lemons	case	15 0	21 0	St. Michael Pines ..	each	1 6	5 0
Melons	each	1 0	1 6				

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes	dozen	1 0	0 0	Lettuce	dozen	1 0	1 6
Asparagus	bundle	0 0	0 0	Mushrooms	punnet	0 6	1 0
Beans, Kidney	lb.	0 3	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red	dozen	1 0	2 0	Onions	bunch	0 3	0 0
Broccoli	bundle	0 9	1 0	Parsley	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	2 6	3 0	Parsnips	dozen	1 0	2 0
Cabbage	dozen	0 0	1 0	Potatoes	cwt.	4 0	5 0
Capsicums	100	1 6	2 0	„ Kidney	cwt.	4 0	5 0
Carrots	bunch	0 3	0 4	Rhubarb	bundle	0 4	0 0
Cauliflowers	dozen	2 0	3 0	Salsafy	bundle	1 0	0 0
Celery	bundle	1 6	2 0	Scorzonera	bundle	1 6	0 0
Coleworts	dcz. bunches	2 0	4 0	Seakale	per basket	2 0	2 6
Cucumbers	each	0 3	0 6	Shallots	lb.	0 3	0 6
Endive	dozen	1 0	2 0	Spinach	bushel	2 0	4 0
Herbs	bunch	0 2	0 0	Tomatoes	lb.	0 4	0 6
Leeks	bunch	0 3	0 4	Turnips	bunch	0 4	0 0



AGRICULTURAL PROGRESS.

To those who have given much thought to agricultural depression and its causes comes not unfrequently a feeling of sadness and distrust—sadness arising from a keen sense of past and present difficulties, distrust of the future and the probable additions to our burdens which it may bring to us. Bold indeed would the man be who ventured to predict the advent of more prosperous times in the immediate future, for farming is undoubtedly in a state of transition. A radical change is surely if slowly being effected in the culture and cropping of the soil, in the rearing and management of live stock, and in the marketing of farm produce. Cause and effect are being looked into more closely, science is brought to bear upon practice as it never was before; to energy of action is combined clearness of aim, as the causes of failure or success open up to us. But there is still much ignorance, and its invariable concomitant of prejudice, to overcome; the downright assertions of ignorance, the rash action arising from superficial knowledge, still clog our progress and hinder our efforts for the general good. The clinging to the use of farmyard manure undoubtedly has some justification in the fact that it contains all the elements of plant fertility, notwithstanding the equally weighty fact that the manufacture and application of such manure is exceedingly costly. It is a safe agent in imparting fertility to the soil, and the rough-and-ready practitioner will doubtless cling to it as long as he can. But we already know that plant food is absorbed in a gaseous state, and this fact is literally a golden key to the door of the treasury of Nature, and we are gradually learning how to use it. Nobody has yet won the prize of £10,000 which was offered a few years ago by the French Government for a method of using the nitrogen of the atmosphere for purposes of fertilisation, yet the ploughing-in of green crops for manure is doubtless the nearest approach to such a discovery,

it being certain that such crops receive fertility from the atmosphere and impart it to the soil as they decay. This is certainly a step onwards, the full importance and significance of which one cannot yet realise. Cordially do we invite especial attention to it now with a view to the inducement of thoughtful discussion before the time comes round again when it may be turned to account. Let us try and grasp the practical value of this sowing and ploughing-in of green crops to the farmer. Take a familiar example by way of illustration once more; the lesson is an easy one, yet it must be thoroughly mastered if we are to derive full benefit from it. A Wheat stubble of some twenty acres is very foul with couch grass. Had the autumn been as fine as it was last year this foul grass would have been taken out of the soil and burnt. It was not fine, and we could only have the grass forked out where it was thickest. As early as possible next spring the soil will be cleaned by ploughing, stirring repeatedly by the cultivator and harrows, and if necessary the clods will be crushed with a Cambridge roller to loosen the grass for the harrows. Then, instead of leaving it for a summer fallow, White Mustard will be sown at the rate of 20 lbs. of seed to an acre, and when this crop is fully grown it will be ploughed in. Hitherto we have recommended ploughing in the green crop when it is in full flower, but a little more attention to the composition of plants shows that the seed contains a much larger proportion of potash and phosphoric acid than any other part of a plant, and it is well, therefore, to wait till the seed is quite half ripe before ploughing in the crop. A trifle this? Well, perhaps so in a plant or two, but trifles mount up in the aggregate, and in this instance they "mean money" just as they do in many another. So fully convinced are we of the high value of this process that we shall continue both to practise and preach it.

Another branch of farming in which progress has been made is the laying down land to permanent pasture. We have ample proof before us now that nine-tenths of an old pasturage consists of inferior native Grasses, which certainly give a clothing of herbage, but which is altogether inferior to pasture of the best Grasses. If anybody doubts this the proof is easy, for we have only to render a piece of land clean, to see that it is well drained either naturally or artificially, to reduce the surface to a fine tilth, to impart enough fertility to it to insure a free strong growth, and to sow it with a mixture of such Grasses as have so often been enumerated in these pages—Cocksfoot, Timothy, the Fescues, Dogstail, Meadow Foxtail, with a due proportion of Yarrow, Red Clover, Cow Grass, Alsike, and Dutch Clover. No contrast can well be stronger than between the growth from such a mixture and that from old pastures of an ordinary type. By careful preparation of the land, by equal care in the treatment of the young pastures, particularly in the first two or three years after the sowing, we are able to keep, and keep well, from twice to three times as many sheep per acre as can usually be done upon old meadows. So clearly has this been proved to demonstration that there can no longer be any doubt it was from sheer ignorance that the outcry was raised against laying down land to permanent pasture. We know now that, done in the right way, the process is neither slow nor uncertain.

WORK ON THE HOME FARM.

Ploughing is being done upon our large arable farms upon every favourable occasion, but there has been considerable hindrance to this work from wet weather. It is in such broken weather that we realise the value of what is often termed a mill house, which is a building covering horse gear for driving machinery. Chaffing, corn-crushing, pulping, and all the usual machine work of the farm may so be done, men and horses being kept off the land and under shelter without actual loss of time. A zealous bailiff will sometimes turn out the horses to work on wet days, but while not minding work in the open during a few showers, we decidedly object to an amount of exposure of servants and horses to inclement weather, which may be considered inhuman. We much fear that illness, which is sometimes fatal, arises from exposure for hours in the rain of men whose clothing is ill calculated to keep them either dry or warm. The ploughing done recently has been what may be termed ridge plough-

ing, by which the land is thrown up into ridges and fully exposed to the action of the weather. We do this willingly at the risk of some slight loss of nitrogen, but then soil so exposed is acted upon so readily by wind and sun in spring that we can always have it ready for sowing, and in better tilth than land ploughed in the ordinary way. Foul land, too, will be ridge-ploughed to enable us to scarify and clean it early next year. The heavier the land the more important is it that it should be opened up to the action of the air, and it is obvious how mellow and open soil must become after two or three months of such exposure.

It is a useful plan to watch the action of drains now, so as to ascertain if they are uninjured and bring off the water freely. Soil that is waterlogged may now be discovered simply by walking over it a few hours after heavy rain. Drainage is one of the matters about which there must be no false economy. We must set the land free from accumulations of water, for wet land cannot be fertile; the fertility is really locked up, and no matter how freely we try to impart more and more fertility to the soil, we never can get free growth or a full crop till the drainage is sound. No doubt this is a matter requiring sound judgment and some caution, yet with the exercise of due care it is not difficult to ascertain whether or not it is necessary to make drains.

ROOTS AND SEEDS AT ISLINGTON.

THE stands of seeds and roots at the Islington Show contributed by the leading firms of seedsmen make an imposing display in the gallery, and are as usual very tastefully arranged. Messrs. Sutton and Sons, Reading, have an extensive collection of finely developed roots—Mangolds, Swedes, and Turnips of their own selected varieties figuring prominently at the upper part of the stand. Numerous clean and excellent samples of seeds are included, and with the specimens of the various mixtures of grass seeds for pastures and lawns occupy the lower and foremost portion of the stand. The principal varieties of roots represented are Mangolds, Mammoth Long Red, Berks Prize Yellow Globe, Ox-heart Yellow Globe, Yellow Intermediate, and Golden Tankard. The Champion Swede and Purple Top Yellow Hybrid Turnip are the chief varieties of the other roots shown.

Messrs. Webb & Son, Stourbridge, contribute a handsome stand of similar excellence to that which was so much admired at Birmingham recently, and to which we referred last week. Potatoes, Mangolds, Swedes, Turnips, Wheats, Barleys, and other grains, together with general samples of flower and vegetable seeds. Specimens of their special manures form the major portion of the exhibits, all being of admirable quality.

Messrs. J. Carter & Co., High Holborn, have an exceedingly attractive and interesting exhibit, which, like those already mentioned, comprises a great number of fine roots, mostly of the firm's specially selected varieties, which have gained much favour with many agriculturists. The specimens of the Hybrid Wheat which we noticed some time since were also shown, and formed a feature of much interest to a number of visitors.

Messrs. Harrison & Son, Leicester, had a smaller but choice exhibit of fine roots and clean good seeds.

CHICKWEED.—A friend of mine, a large and excellent farmer in this neighbourhood, who keeps his land scrupulously clean, has this autumn been very much troubled with chickweed, which has been most prevalent in one or two of his most highly cultivated fields. He would be glad to know how it could have generated. Can you throw any light on it? If so, the information will greatly oblige.—WILLIAM W. BROWN.

[The chickweed has generated from seed, but whether this has been introduced with other seeds that have been sown, or whether it has lain dormant in the soil for some time, and brought near the surface by deeper ploughing than usual, we have no means of knowing. Charlock and other seeds buried beyond the influence of air retain their vitality for years, and germinate freely when turned up by working the land a few inches deeper than before.]

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
	Baromet- er at 39 ⁴ and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min	In ann.	On grass.	
1885.										
Nov. and Dec.										
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 29	29.672	45.4	45.3	E.	45.2	58.0	38.0	58.3	29.9	0.169
Monday 30	29.729	57.4	55.2	S.W.	46.7	58.7	45.3	61.3	35.4	0.182
Tuesday 1	30.173	39.7	39.1	N.W.	46.5	49.3	38.1	72.2	29.9	—
Wednesday 2	30.306	34.7	34.7	W.	43.8	44.3	31.8	55.6	24.3	0.010
Thursday 3	30.085	47.4	46.6	S.W.	43.2	50.2	34.3	63.4	30.8	0.119
Friday 4	29.631	49.4	47.7	S.W.	44.2	50.8	46.7	69.2	43.8	0.048
Saturday 5	29.799	37.9	36.0	W.	43.2	42.6	34.7	51.3	18.2	0.347
	29.914	44.6	43.5		41.7	50.9	38.4	60.2	31.8	0.875

REMARKS.

29th.—Heavy rain till 10 A.M.; warm, damp, and drizzly all day.
30th.—Warm and damp, with heavy rain all the afternoon.
1st.—Colder, fine and bright.
2nd.—A little fog in morning, but generally fine.
3rd.—Cloudy early; showery morning; wet afternoon and evening; gale at night.
4th.—Wet, with westerly gale; fine after mid-day, with sunshine till sunset; rain soon after; evening fine.
5th.—Generally fine till 5 P.M.; steady rain afterwards.
Another wet week; the temperature nearly the same as in the previous week, and rather above the average.—G. J. SIMONS.



COMING EVENTS

17
18
19
20
21
22
23TH
F
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SUN
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W

Royal Society at 4.30 P.M. Linnean Society at 8 P.M.

FOURTH SUNDAY IN ADVENT.

PLANTS CERTIFICATED IN 1885.

THE Committees and Judges of the leading Horticultural Societies entrusted with the important task of determining the value of the numerous novelties submitted to them have this year been busy, for the number exhibited has been large, and it has required vigilant care in the selection to avoid bestowing honours upon plants of uncertain merit, and at the same time not to pass those of real worth. The greatest portion of this work has necessarily fallen upon the Floral Committee of the Royal Horticultural Society, and it is very satisfactory to observe that, owing to the excellent judgment exercised in granting or withholding their awards, the certificates are becoming more valuable as official recognition of plant merit. The Judges engaged by the Royal Botanic Society invariably have some scores of novelties brought before them at the four exhibitions held annually in Regent's Park, and though, perhaps, certificates are rather more freely granted there than at Kensington, there is no material cause for dissatisfaction. It must be considered, too, that the dual system of botanical and floricultural certificates adopted at Regent's Park allows a greater latitude than the ordinary first-class certificates of the other Society. The award of botanical certificates is also undertaken by the Scientific Committee at Kensington, but these are now as rare as the doubtful second-class honours have fortunately become, and which at one time were much too frequently bestowed. What is really needed is a reliable indication to the horticultural world of what plants amongst the hosts of new claimants to popular favour are worthy of culture, either as improvements on older forms of a similar type, or as new introductions. Merely certificating a plant because it is new, or because it is distinct, is not sufficient; if it does not possess some qualities to recommend it as a garden plant, no award should be granted by Horticultural Committees.

Next to the two Societies already named the Floral Committee of the National Chrysanthemum Society has awarded the greatest number of certificates, though nearly all these have been confined to the special object of the Society's existence—the Chrysanthemum. This Floral Committee is a comparatively youthful institution, and perhaps in a few instances their zeal has somewhat outrun their discretion, certificates having been very freely granted. More experience at their work, and a fuller appreciation of its importance, will probably render them more careful in their awards. They have unquestionably done much valuable service, and it is with a desire to see the Society take the position it deserves that we advise a more rigid economy in their honorary awards.

The National Carnation and Picotee Society, the Judges at the Crystal Palace and a few other leading shows, have also assisted in the work of selection, but it would be well if local societies refrained from granting certificates, unless it be conditionally recommending the exhibitors to submit their productions to the higher tribunals. There is one form of certificate—namely, for culture, which many local societies

might advantageously grant, and such would be of far more practical value to gardeners than the usual recognition accorded.

Taking the awards of the bodies named, we find that the substantial total of 346 plants and flowers have been deemed worthy of certificates, several having been honoured by two or more societies. Of this total 127 are miscellaneous, stove, greenhouse, and hardy plants, species, hybrids, or introduced varieties, and the remaining 219 are florists' flowers, or varieties of garden origin. These numbers are favourable signs of the activity prevailing in the horticultural trade, and also indicate how great must be the demand for novelties when so much labour and expense are incurred to provide the public with additions to the already long lists of cultivated plants. At no period in the history of horticulture have such enormous numbers of novelties been introduced from other countries or raised in our own as at the present time, and if any proof were needed that the love of horticulture is extending, this fact affords it most convincingly.

A brief glance at the principal groups of plants will indicate to some extent the direction of popular favour, and as for several years past we must again place the Orchids at the head of the poll with a large majority. No less than seventy-six of these have been certificated this year, and adding to these 100 other novelties in the same family that have been described or figured in the principal gardening and botanical publications of Europe during the same time, we can gain an idea of the rapidity with which collections are being increased. The *Odontoglossums* preponderate amongst the certificated Orchids, twenty-one having been chosen for honours, a good proportion being varieties of the *O. crispum* type. Next in number are the *Dendrobiums*, ten being selected, all either hybrids or varieties of such well-known species as *crassinode*, *Falconeri*, *heterocarpum*, *macrophyllum*, and *nobile*. Of *Cattleyas* nine have been certificated, including some grand varieties of the leading types. Seven *Lælias* have found favour with the censors, and the remainder is made up of *Calanthes*, of which several beautiful hybrids have been obtained, *Cypripediums* and miscellaneous species. It is worthy of remark that *Angræcum* or *Aeranthus Leonis* was shown on the same day by five exhibitors, and each obtained a certificate—a very uncommon occurrence.

Following the Orchids, in point of numbers, strangely enough, come the *Chrysanthemums*, with a total of thirty-eight, the largest number of varieties that have ever been certificated in one year. Again we find one group largely predominant, the Japanese having been increased by twenty-seven varieties, and some of these may be expected to take a prominent place amongst the exhibition varieties. It is quite evident that the Japanese forms with the early-flowering and what are termed decorative *Chrysanthemums* are advancing most rapidly in favour, and for purposes of utility the incurved forms, though so highly esteemed by florists, will have an inferior position. A well-grown incurved bloom is very handsome as regards symmetry, but it is of little value in ordinary floral decoration, whereas the more graceful Japanese, the *Anemones*, the reflexed, and the single varieties can be employed to excellent advantage in numberless ways.

Fuchsias follow the *Chrysanthemums*, twenty-one having been found worthy of special notice by the Floral Committee at Chiswick. A large collection has been grown there during the year, and from these the number mentioned has been carefully examined and considered distinct and meritorious enough to deserve certificates. This list is a substantial addition to the varieties already in cultivation, but it should be remarked that several of these were not strictly new, though not generally known. They were all good varieties, and the fact of so many being recognised may serve to draw some additional attention to the usefulness of *Fuchsias* as flowering plants for the conservatory. Specimen *Fuchsias* are occasionally seen at exhibitions, but except in the west of England it is seldom that they are shown in their best

condition, though well-grown examples are valuable additions to any exhibition.

Nearly equal in numbers are the Tuberous Begonias (nineteen), both single and double forms from several raisers having been found sufficiently distinct, notwithstanding the great advance that has been made in recent years. The general improvement has, however, been so marked that probably certificated varieties will decrease in number each year, especially since it has been proved that strains of seed in each of the principal colours can be obtained true. Of *Gladiolus* eighteen have been honoured, chiefly of the *gandavensis* type, but a few forms of *G. Lemoinei* have been added, and these will soon constitute an interesting group of free-flowering hardy varieties that will be duly appreciated in many gardens. A dozen each of Dahlias and Amaryllises have gained favourable notice, while Cinerarias, Carnations, and greenhouse Rhododendrons are equal with ten certificated varieties each. The last-named include some extremely beautiful forms, and it is surprising how much they are being improved in the hands of skilful hybridisers and cultivators—the colours are being more diversified, the flowers enlarged, and, what is of still more importance, the habit is being rendered dwarfer and more compact. This point cannot receive too much attention, for the chief failing of these Rhododendrons has hitherto been the tendency to become straggling.

Pelargoniums and Roses have been well represented amongst the novelties, and nine each were certificated, but to the former must be added four of the much-admired Ivy-leaved varieties, all double forms, the flowers of which are found so useful for cutting and arranging either in bouquets or vases. One of the zonal varieties, *Volonté Nationale* Album, deserves special notice, since it has obtained no less than four certificates this year from different societies. It is encouraging to note that six of the Roses are of English origin, one of which, Mrs. John Laing, has obtained many honours.

Many other useful and beautiful plants have received official recommendation to public notice, but they need not be referred to specially here. It is, however, remarkable what a preponderance of flowering plants figure amongst the novelties, those distinguished as “fine-foliage plants,” being comparatively few; even including Ferns, Sarracenias, and Nepenthes, they only number twenty-two, indicating a great change in popular taste.

KEEPING GRAPES.

It is not difficult to maintain a supply of ripe Grapes the whole year round if the accommodation for growing them is equal to the demand. Not unfrequently are the fruits of such late varieties as Alicantes and Lady Downe's kept in good condition for eight months after they are ripe, and placed on the table with Black Hamburgs and other early-forced Grapes towards the end of May. It is surprising how fresh and plump they will keep until that time, or even into the following month if desired.

The length of time that late Grapes will keep fresh, however, depends upon the time they are thoroughly ripe and the treatment they receive during the last stages of development. If ripened by the end of September under moderately cool airy conditions, they will generally keep well, provided the atmosphere of the house in which they are to hang is properly regulated. It is a great mistake to ripen Grapes in October by the aid of strong fire heat, for this is not only detrimental to their keeping satisfactorily, but it tells materially on the crop the following season, and perhaps proves disastrous to the Vines if persisted in for a few years.

When the Grapes are ripe by the time named, and under the conditions most suitable, they give comparatively little trouble as far as keeping them is concerned, until the damp foggy days of November set in. Even light irregularities in the temperature and the atmospheric conditions of the house do not prove so injurious to them as would be the case towards the close of the month or the early part of the next. It is wise to maintain a regular temperature as nearly as possible, being guided by external conditions, and ventilate the house judiciously during that trying month. No doubt the most critical period for Grapes is

from the time the foliage commences to fade until it has fallen from the Vines. During this stage the berries are most likely to be affected by mould, as they will be quickly if any injudicious course is followed in the regulation of the atmosphere.

The idea so generally prevalent, that every plant must be removed from the houses during the period named, is a mistake, for bedding and other plants can be kept in them without the slightest injury to the Grapes or Vines. If such plants can be accommodated elsewhere so much the better, but large numbers who may be required to keep a house of late Grapes are not so favourably situated. We are generally compelled, by the want of space elsewhere, to keep a large stock of *Selaginellas*, small Ferns, and other plants for decoration in these structures, and they are worse than Pelargoniums, as these require but little water now. A little more care is, however, needed in ventilating the house.

In damp localities, where the atmosphere is saturated with moisture, and dull foggy days are the rule, it is very difficult to keep the Grapes in the house with Ferns that require to be constantly watered. Once or twice during the past few years we have been compelled to remove such plants from the house, but this has only been necessary when long spells of bad weather have been experienced. The difficulty that arises under such circumstances is to remove the moisture that condenses on the surface of the berries, which may be effected by keeping the temperature of the house a few degrees warmer than is usually necessary. The dull appearance of the berries at once shows this condensed moisture, and if immediately removed the Grapes can be preserved.

The temperature of the house in which the Grapes are hanging should be kept from 55° to 60° at night, and from 60° to 65° during the day, the heat being regulated by the external atmosphere, whether mild or cold. If the house is full of plants it may be necessary on some occasions, even during cold weather, to maintain the temperature at the highest figures given, as well as when damp and foggy. If the house is empty and the border has been mulched or covered to prevent evaporation from the surface, even a lower temperature of 5° or more by day, as well as by night, may safely be practised. Fire heat in such cases only is needed to keep the atmosphere sufficiently dry to prevent moisture from being condensed on the berries. During sharp frosty weather, even when no plants are in the house, the temperature should be kept moderately high.

Although the regulation of the heat, according to circumstances, is very important in the preservation of Grapes, it is no more essential than the ventilation of the structure. The idea which formerly existed, and is not even now obsolete, of admitting a little air and heat daily, irrespective of external conditions, cannot be too strongly condemned, for if persisted in the Grapes are certain to decay. When the air outside is moist the ventilators should be kept closed, and a steady heat maintained in the house, regulated by the amount of moisture inside. When the outside atmosphere is dry every advantage should be taken to ventilate the house liberally.

Care is also necessary in applying water to the roots of the Vines. If none is given from the time the Grapes are ripe until they are cut from the Vines the roots may suffer, and the Grapes commence shrivelling. If the border needs water it can be applied at any time until the end of October, but afterwards a favourable opportunity should be selected when the atmosphere outside is dry, so that the moisture inside can be expelled by free ventilation and the use of fire heat. Watering the border, however, should if possible be avoided during that critical period when the foliage is decaying. After the leaves have fallen water may be given if it is needed. The roots of late Vines are inside and out, and we have often experienced very wet weather during the time the foliage is dying, but no difficulty has been experienced in keeping the fruit. Far more harm is likely to result from a superabundance of moisture in the atmosphere, which is condensed on the berries, than by heavy rains or watering the Vines at their roots.

Many allow the Grapes to hang upon the Vines as long as possible after the foliage has fallen, but this is a mistake; the Grapes will keep in a dry airy room just as well as they will upon the rods. Allowing the fruit to remain upon the Vines until February, or when the sap rises, only imposes an unnecessary additional burden upon them; they are liable to bleed when pruned, and if this does no harm it certainly does no good, it also robs them of that season of complete rest which is so essential to success. The sooner the fruit is cut after the new year the better, and in every case where practicable we strongly advise this to be done, then the Vines can be pruned, kept cool afterwards, and thus have a good period of rest.

After Grapes are cut from the Vines they will keep perfectly well in any dry airy room if the wood from which the bunches

hang is placed in bottles of water. It does not matter which end of the wood is placed in water, for either will do equally well. I have never found any difference, and it is often difficult to place in the bottles what may be termed the right end, or that nearest the stem of the Vines. This, with such varieties as Alicantes, is often too short, and therefore the end beyond the bunch must be used. The bottle should be filled with clean water, and so that the stem leaving the bunch will reach the water at whatever angle the bottles may be suspended. It is immaterial whether charcoal is placed in the bottles of water or not; we never adopt this plan now, and find no difference. The idea that too much water will pass to the berries unless the stem has been charred, or the tubes through which water passes stopped by other means, is a mistake. We always place the stem into the water as cut from the Vine, and find the Grapes keep well. Some use clay to stop the mouth of the bottles to prevent evaporation, but this is only a waste of time, and does no good if only an attempt is made to regulate the temperature and conditions of the room to prevent a moist atmosphere and the condensation of moisture upon the berries. The less heat that can be used to accomplish this the better. It is also necessary to examine the bottles occasionally to see that the stem is still in the water; if this is not the case they must be filled, or the Grapes will shrivel instead of remaining fresh and plump. Care must also be exercised in looking over the bunches lest any berries should decay, for unless these are removed at once they will soon destroy the whole bunch by decaying all those that surround it.

The fruit room must be freely ventilated whenever the weather is favourable and will allow of this being done, the same conditions being observed as when the Grapes are hanging upon the Vines. It is surprising how well the fruit can be kept even in what may be regarded as unsuitable places, provided due care is taken in regulating the atmosphere in the room. It is, indeed, very difficult to lay down any hard and fast rule for their management after they are cut, because the position of the room, as well as other varying circumstances, all tend to prove that intelligent observation must guide those in charge, as rules probably would in many instances prove unsuitable.—WM. BARDNEY.

NEW ROSES.

THERE was a time when Rose-growers waited in a flutter of expectation for the new catalogues which came pouring in from France, and they were eagerly scanned as to the hope of new acquisitions which should surpass in excellence and beauty anything that we already possessed. Sometimes these expectations were realised, when, as in 1853, three such Roses as Gloire de Dijon, Jules Margottin, and Général Jacqueminot gladdened the Rose-growers. 1861 was another grand year, for it gave Charles Lefebvre, Duc de Rohan, Maréchal Vaillant, Maurice Bernardin, Mrs. Charles Wood, and Prince Camille de Rohan. But we get no such years now: perhaps it is unreasonable to expect it. We have so many beautiful Roses that it seems well nigh impossible to get anything to excel them, and hence we take the new-Rose fever in a much milder form than we used to do. We have learned to discount the magnificent descriptions, when all the glowing adjectives of the French language were used to describe the novelties which the raisers had to offer, and we have, rather than take these descriptions *au sérieux*, looked upon them as good jokes, and have measured our expectations rather by the doings of the raisers in former years. When a raiser has mostly given us good Roses we place confidence in his new bantlings; when, on the other hand, he has generally given us indifferent flowers we do not care to trust him for the future. In looking through the list which I have now before me of the new Roses, I find fifteen Teas and thirty-four Hybrid Perpetuals, besides a few miscellaneous Roses. I shall take them under the names of their raisers, as being likely to give a better indication of their value, taking Teas first.

TEAS.—GUILLOT ET FILS.

Comtesse de Frignouse.—A robust free-flowering variety. Flowers full, of a beautiful clear canary yellow; the blooms large. As Guillot has only this one Tea, and as he has already given us some good Roses, we are hopeful that this may be an acquisition.

NABONNAND.

It is well known that this raiser every year floods the market with new varieties, very few of which remain permanently in our catalogues; for in the National Rose Society's catalogue of exhibition Roses I find only one of his, Francisca Krüger. In the present year he offers five.

Camille Roux.—A large globular flower. Plant very vigorous and free-flowering; colour, centre lively red, borders of petals rose.

Excalphé.—If the superlatives used for the description of this Rose indicate anything it must be something grand. Everything is "très!" It is very vigorous, very floriferous, very large, very full, very well formed, and very sweet, while the colour is a perfect yellow. What more, my masters, can you want? If there is truth in words everyone ought to go in for this, but —

Flavien Budillon.—Here again the superlatives come in, but not quite so many as in the previous description, still they are abundant—very vigorous, very free-flowering—flowers very large, full, globular, cup-shaped, beautiful tender rose colour.

Reine Olga.—Robust, very vigorous; large full flowers, perfect shape, colour coppery red; very sweet-scented.

Suzanne Blanchet.—Very vigorous and free-flowering, of imbricated form; colour beautiful flesh rose.

LEVET.

Claudius Levet.—Vigorous and free-flowering, large and full, of a beautiful carmine rose shaded with purple, centre salmon colour.

Edmond de Bianzat.—Plant vigorous. Flowers large, full, of good form; colour a beautiful salmony peach.

Marguerite Ramet.—Beautiful flowers, well formed, large size; colour beautiful china rose, the centre veined with carmine rose, edge of petals bordered with bright rose.

LEVEQUE.

Comtesse Horace de Choiseul.—Vigorous. Flowers large, well shaped; colour delicate rose shaded with copper yellow.

PERNET, PÈRE.

Madame David.—Vigorous. Flowers large, nearly full; colour tender rose edged with white, shaded salmon rose.

Souvenir de L'Admiral Courbet.—Moderately vigorous, having some likeness to Polyantha Roses. Flowers medium size, full or nearly so, of a lively red colour. Very free-flowering variety for borders.

DUBREUIL.

Marquise de Vivens.—Very free-flowering. Flowers medium or large, of a most charming colour, the base of the petals white; the edges lively carmine, showing at the front china rose colour, gradually shading into straw colour towards the centre; inside flesh colour shaded with sulphur yellow. The buds are very long, of fine form. This Rose has a delicacy of colour and refinement impossible to describe. Well, at any rate the raiser has made a good attempt at doing so, and excites in no small a degree one's curiosity as to what it may turn out in reality.

SOUPERT ET NOTTING.

Reine Nathalie de Serbie.—Very vigorous. Flowers large, well formed, flesh rose in colour on cream-coloured ground lightly shaded with yellow.

GONOD.

Souvenir de Hélène Lambert.—Very vigorous, thorny, very floriferous; colour yellow, reverse of petals deep rose.

BONNAIRE.

Souvenir de Victor Hugo.—Vigorous. Flower large and full, bright pink, slightly edged with yellowish white; centre yellowish.

HYBRID PERPETUALS.—EUGÈNE VERDIER, FILS AÎNÉ.

Amiral de Joinville.—Flower large and well formed; colour deep red shaded with purple; very sweet-scented.

Denis Cochin.—Very vigorous. Colour crimson red shaded with velvety crimson.

Chatelaine d'Eu.—Larger well-formed flowers, carmine red lighted with brilliant purple; centre pansy-coloured violet.

Léon Delaville.—Vigorous. Large well-formed flowers, red deep shaded, flushed with carmine, lighted up with violet crimson.

Louis Calla.—Large flower. The description of colour baffles one—purplish red, shaded with puce, marbled with white.

Prince Waldemar.—Vigorous. Colour cerise red shaded with silvery white.

Princesse Marie d'Orléans.—Vigorous. Colour lively cherry red shaded with silvery white.

Madame Vauvel.—Very vigorous. Flower extra large, very large petals, lively rose colour.

SCHWARTZ.

Auguste André.—Vigorous. Colour silvery rose, lilac centre, passing to pale rose.

Climbing Monsieur Boncenne.—A rampant-growing variety of this well-known variety, very free-flowering.

Climbing Pride of Waltham.—This has also originated with Paul & Son at Cheshunt, and is being sent out by both firms. Of strong growth. Flowers like the type.

Souvenir d'Eugène Karr.—Flowers medium size; colour reddish scarlet passing into puce; back of petal with whitish shading.

MARGOTTIN, PÈRE.

Raoul Guillard.—Flowers large, full, very sweet-scented, brilliant vermilion red; back of petals amaranth colour. My good old friend rarely sends out a new Rose, so that one is hopeful when he does so it is something good,

LACHARME.

Clara Cochet.—Vigorous, erect growth, full, with large petals; clear rose colour, centre brighter.

I may say the same of honest old Lacharme, to whom we are indebted for so many good flowers, and who has sent out so few bad ones. As this appears to be his only Rose this year let us hope it may confirm his previous reputation.

LEVÊQUE.

Comtesse Freisinet de Bellanger.—Very vigorous. Flowers large, full, of a beautiful clear rose colour shaded with bright rose.

Madame Baulot.—Flowers large, full, imbricated; colour bright rose shaded with carmine.

Maréchal Canrobert.—Vigorous. Flowers large and full; colour cerise red shaded with carmine and purple.

Princesse Amédée de Brégélie.—Very vigorous. Flowers large, full, and globular; colour clear bright rose, cherry colour in the centre, back of petals silvery.

Professeur Maxime Cornu.—Vigorous. Flowers large, full; colour lively red without any shading. Very free-flowering.

MOREAU.

Docteur Pinel.—Very vigorous. Flowers very large, full, of good form, flowering in clusters; colour vermilion red shaded with carmine.

Madame Lefebvre.—Vigorous. Flowers large, flowering in clusters; colour satiny rose, deeper in the centre.

Nicholas Leblanc.—Flowers very large, globular; colour cherry red passing into delicate rose.

LIABAUD.

Madame Gomot.—Very vigorous. A seedling from Souvenir de la Reine d'Angleterre; very large flowers, nearly full; colour lively, glossy rose.

Madame Musset.—Very vigorous. Flowers very large, full, of good shape; colour clear red.

Madame Rebatel.—Very vigorous; a seedling from La Reine. Flowers very large, well shaped; colour bright rose shaded with lighter tint of same colour.

Madame Villy.—Vigorous, having the appearance of Rose Madame de Cambacères. Flowers large, full; colour brilliant amaranth red.

SOUPERT ET NOTTING.

Madame Ph. Dewolfs.—Very vigorous. Flowers large, full, shape of Centifolia; colour madder rose shaded with clear violet.

Madame Pierre de Beys.—Vigorous. Flowers large and full; vermilion red passing into shaded carmine.

VIGNERON.

Madame Sanglier.—Vigorous. Flowers large, full, globular; colour amaranth red, reverse silvery white.

Monsieur Moreau.—Vigorous. Flowers large, full, globular; colour lively rose, passing into delicate rose; reverse of petals silvery.

GONOD.

Rosieriste Chauvry.—Vigorous. Flowers large, full, a seedling from Victor Verdier; colour fiery red, the deepest colour of this series.

J. LUDOVIC.

This is quite a new name to me, nor do I know his *locale*. It sounds more German than French, and his Rose is named after that enthusiastic rosarian

Frederick Schneider II.—Vigorous. Flowers large; colour lively rose shaded with brilliant red.

PERNET PÈRE.

Souvenir de Victor Hugo.—Vigorous. Flowers large, nearly full, globular, beautiful satiny rose.

It will thus be seen that Mons. Eugène Verdier heads as usual the list as far as number goes with eight varieties, while such cautious growers as Lacharme and Margottin have only one each. It is utterly impossible to say where we are to look for the prizes; but however glowing the descriptions they do not strike one as promising anything very novel or extraordinary.—D., Deal.

ICE HEAPS.

The remarks and illustration anent this subject (p. 512), together with the fact that we are now actually engaged in the work to which they refer, induce me to bring under the notice of your readers a

method of preserving ice that is not so well known as it deserves to be. I refer to "stacking ice" in the open, and the *modus operandi* of which I have not seen practised elsewhere. There are no doubt many of your readers who would like to have their own store of ice had they but the accommodation in the way of a house in which to preserve it, and yet in most cases they possess all that is necessary to gratify their wishes in this respect without expending a penny in excavating and fitting up an ice house. This is to be done by following in detail the instructions herein given, which represent the method of procedure practised here for several years with the most satisfactory results.

In a valley shaded by spreading trees, the foliage of which shades the ice rick from the direct rays of the sun during the summer and early autumn months, and at the bottom of a slope having an angle of about 30°, thus affording ample drainage—we commence our rick, and build "uphill" about 12 or 15 feet to the edge of the cartway, which we made for the occasion. We then place some hurdles at the bottom and ends to prevent the ice when "tipped up" at the top from going beyond its bounds. It is then well broken with mallets, and boiling water applied as the work proceeds to consolidate. The section of the rick when finished somewhat represents that of a three-quarter span house, the cartway representing the wall plate of the hip-roof. Then a man, with a ladder placed against it, spade in hand, commences at the top and trims the whole rick right round to the bottom, thus filling all the crevices with the descending "ice dust," which is well beaten in as the operator progresses with his work. This done, the whole is covered with sifted sawdust to the depth of 4 or 5 inches to exclude the air, following this with 2 feet thick of freshly collected leaves and a sufficient long litter to prevent the wind blowing the leaves off; and, as a "finishing touch," the rick is enclosed by hurdles, which are fastened by tarred string to stout sticks driven into the ground to keep cattle, &c., away. We use a half-inch-mesh sieve for the sawdust. The making of the ice into a "rick" instead of a "stack" is the better way, inasmuch as it obviates the question of insufficient slope arising to prevent the system being practised on that account. But the rick, as a matter of course, should be made sufficiently long to compensate for loss sustained through deficiency of height and width.

We have an excellent "ice house" here, but having so thoroughly demonstrated the fact that a good supply of ice can be had all the year round without incurring the expense of making and filling an ice-house I have ceased to make use of the one here on the score that nearly half the labour necessary to fill the house is sufficient to make a "rick" containing a like complement of ice. From a "rick" so made we have had a supply of ice for sixteen months from the date of making it. This was a test "rick," and after it was finished we had recourse to the ice house, which had been filled in the ordinary way to supplement the supplies previously obtained from the rick, but it only contained four or five loads of ice out of some 200 loads stored therein the last week the previous November, 1880. These facts go not only to conclusively prove that a supply of ice can be secured all the year round from a rick made above ground, but that in ordinary winters an "over-lap supply of four months" can also be had. In order that the openings made in the coverings of the ice rick each time that a fresh supply of ice is required may be again made air-tight, it will be advisable to send the same men on each occasion.—H. W. WARD, Longford.

STRAWBERRY PLANTS IN WINTER.

THE majority of those who grow Strawberries in pots do not begin to force them until March or thereabouts, as successful forcing in January or February is work which can only be done by those possessing the best of appliances. It is very satisfactory to have ripe Strawberries as early as possible, but plants which would only produce a very moderate crop in February would produce a heavy crop in April or May, and as a rule it is most profitable to defer forcing until the days have lengthened considerably. Previous to beginning forcing it is a bad plan to keep the plants in such a high temperature that they will never be at rest throughout the winter; keeping them growing slowly is a sure way of ruining them. The quieter and cooler they can be kept until forcing begins the better. In years gone by some of our most successful plants have been left in the open air until February. They were turned down on their sides at the end of November and laid along the bottom of a wall, where they were partially sheltered, and the roots soon became so dry that when frost came the soil did not swell and break the pots; but no harm was done to anything, and now we always allow some of our plants to be treated in this way. We also place some of them in a cool frame, and only draw the lights over them when it is severe frost or much rain. These are not kept so dry at the roots as those at the bottom of the wall, and they force almost as well, but not so early. We have put some plants into a Peach house where there was no artificial heat, but the sun heat raised the temperature so much at times that the plants showed signs of growing slightly, and as we have a decided objection to this we do not approve of storing them in Peach houses or vineries, and keep them in the

open air or in a cold frame. I have known the pots to be stacked up on each other in a large heap with the plants outwards, but except making them more convenient for covering this plan possesses no advantage over ours. One thing is certain, as long as the soil is moderately dry there is no danger of the plants being injured by frost, and no one need keep them in a high temperature during frost under the impression that they would be injured if left under its influence.—A KITCHEN GARDENER.

LOGWOOD (*HÆMATOXYLON CAMPECHIANUM*).

THIS evergreen stove plant, which attains to a moderately sized tree in South America, furnishes the logwood of commerce, and from the colour of which its name is derived—"haima," blood, and "xylon," wood. It belongs to the order of Leguminous plants, and has agreeable foliage and slender racemes of yellow flowers. It is of easy cultivation and may be readily increased from seeds, which, however, germinate more



Fig. 79.—Logwood (*Hæmatoxylon campechianum*).

freely if steeped in warm water for some hours before sowing. Cuttings of partially ripened young shoots also strike freely in sand under a bell-glass. A compost of loam, peat, and sand is suited to the requirements of this plant, with a temperature in summer of 70° to 85°, and in winter 50° to 55°.

It is a native of Campeachy, the shores of Honduras Bay, and other parts of tropical America; but it has been introduced into Jamaica, where it has become naturalised. The flowers are fragrant, and give out an agreeable odour said to resemble that of the Jonquil. The wood is hard, compact, and heavy, with a specific gravity higher than that of water; has a fine grain, and is susceptible of a fine polish. It is chiefly employed by the calico printer to give cotton a black or a brown colour; if it be dyed with an alum mordant in a decoction of logwood it becomes black. It was first cultivated in Jamaica in 1715, from seeds brought from the Bay of Campeachy, and was introduced into English gardens in 1724. Its colouring properties depend on a peculiar principle called hæmatoxylin or hæmatin.

THE PEAR CONFERENCE.

[Interim report of the Executive Committee of the National Pear Conference, held in the Royal Horticultural Society's Gardens, Chiswick, October 21st to November 4th, 1885.]

WE have received from the Secretary of the Royal Horticultural Society the following abridged statement taken from the full report of the Pear Conference recently held at Chiswick, and which is not yet suffi-

ciently advanced for publication. This extract will, however, serve the purpose of disseminating useful information to intending planters during the present season, and it is with this object that the Council have decided upon giving it the earliest possible publicity. The report has been skilfully prepared by Mr. A. F. Barron, and we shall look forward with interest to the full report whenever it is ready.

THE selection of the present season for the holding of a great Exhibition and Conference on Pears in succession to that on the Apples in 1883 proved to be especially propitious, the crops of Pears throughout the country being in general very abundant and good. The cold dry summer was not specially favourable for the growth and development of Pears, and in many instances the fruit was much smaller than usual, especially of the earlier varieties. The later varieties benefited greatly by the autumnal rains, and proved in general of a fair average character.

The response to the invitation issued by the Council proved of the most satisfactory character, the number of Pears sent in for exhibition far exceeding the most sanguine expectations of the Committee, the Exhibition being not only great in extent, but in all respect a truly representative exhibition of nearly all the varieties of Pears grown or cultivated in this country. The total number of exhibitors taking part in the Conference numbered 166, contributions being received from thirty-five of the English counties, also from Scotland, Ireland, Wales, and the Channel Islands, the total number of dishes or different lots of Pears staged numbering 6350. In addition several large and meritorious collections were received from France, which proved of great interest.

Counties.	No. of Exhibitors.	No. of Dishes.	Counties.	No. of Exhibitors.	No. of Dishes.
Bedfordshire . . .	1	63	Nottinghamshire.	4	173
Berkshire . . .	4	66	Oxfordshire . . .	1	41
Buckinghamshire.	4	213	Rutlandshire . . .	1	28
Cambridgeshire . .	1	13	Shropshire . . .	1	63
Cheshire . . .	2	82	Somersetshire . . .	1	69
Cumberland . . .	2	2	Staffordshire . . .	2	58
Derbyshire . . .	2	26	Suffolkshire . . .	2	36
Devonshire . . .	5	311	Surrey . . .	17	622
Essex . . .	5	294	Sussex . . .	8	338
Gloucestershire . .	2	157	Warwickshire . .	2	42
Hampshire . . .	2	111	Wiltshire . . .	6	176
Herefordshire . . .	7	310	Worcestershire . .	5	234
Hertfordshire . . .	5	451	Yorkshire . . .	2	69
Huntingdonshire . .	1	39			
Kent . . .	11	486	Scotland . . .	16	415
Lancashire . . .	2	83	Wales . . .	6	103
Leicestershire . . .	1	53	Ireland . . .	2	30
Lincolnshire . . .	4	121	Guernsey . . .	2	33
Middlesex . . .	19	618	Jersey . . .	1	74
Monmouthshire . . .	1	58			
Norfolkshire . . .	4	98	Total . . .	166	6351
Northamptonshire .	2	72			
			France . . .	2	262

The total number of reputedly distinct varieties of Pears exhibited subsequent to the corrections made by the Committee amounts to 650.

An audit taken of the whole of the varieties exhibited gives the following result as to the most favoured or popular varieties, Beurré Diel, although only a second-rate Pear, standing at the top of the list, having been exhibited 194 times; Marie Louise being placed second, 155 dishes of which were shown; and Louise Bonne of Jersey third, 132.

LIST OF THE FIFTY PEARS EXHIBITED THE GREATEST NUMBER OF TIMES.

	No. of Dishes.		No. of Dishes.
Beurré Diel	194	Comte de Lamy	73
Marie Louise	155	Knight's Monarch	73
Louise Bonne of Jersey ...	132	Ne plus Meuris	73
Duchesse d'Angoulême ...	121	Beurré d'Amanlis	72
Winter Nelis	121	Beurré Superfin	70
Passe Colmar	118	Pitmaston Duchess ...	69
Josphamine de Malines ...	113	Uvedale's St. Germain ...	68
Bergamotte Esperen	112	General Todtleben	67
Beurré Rance	108	Conseiller de la Cour ...	61
Catillac	108	Beurré Bosc	57
Beurré Clairgeau	106	Thompson's	56
Doyenné du Comice	103	Napoleon	55
Beurré Capiaumont	86	Marie Louise d'Uccle ...	53
Beurré d'Aremberg	80	Glou Morceau	53
Vicar of Winkfield	78	Van Mons Léon Leclerc ...	51
Chaumontel	77	Huyshe's Victoria	50
Beurré Hardy	74	Gansel's Bergamot	50
Beurré Bachelier	74	Baronne de Mello	50

In regard to nomenclature, each of the collections exhibited was carefully examined by the Committee and corrections made where considered requisite. Errors of judgment may in some cases have occurred, due to the altered appearance the same fruits often assume under different conditions, &c. Some others may have been overlooked, or their proper labels have got misplaced. Every endeavour was, however, made to secure the most correct nomenclature possible. The corrections made by

the Committee have in all cases been sent direct to the exhibitors. A pleasing feature noted by the Committee was the general correctness of the nomenclature.

On a general examination of the whole of the collections exhibited, and noting the more prominent varieties in each, the following list has been prepared—viz.,

SIXTY OF THE MOST PROMINENT VARIETIES OF PEARS EXHIBITED AT THE CONFERENCE.

Alexandre Lambre	Josephine de Malines
Bergamotte Esperen	Jersey Gratioli
Beurré Alexander Lucas	Louise Bonne of Jersey
d'Amanlis	Madame André Leroy
d'Anjou	Treyve
de l'Assomption	Marie Benoît
Bachelier	Marie Louise
Baltet, père	Marie Louise d'Uccle
Bosc	Nouvelle Fulvie
Clairgeau	Olivier de Serres
Diel	Passe Colmar
Hardy	Passe Crassane
Rance	Pitmaston Duchess
Spae	Princess
Sterckmans	Souvenir du Congrès
Superfin	Suffolk Thorn
Chaumontel	Thompson
Comte de Lamy	Urbaniste
Conseiller de la Cour	Van Mons Léon Leclerc
Doyenné Boussoch	Williams' Bon Chrétien
du Comice	Winter Nelis
Duchesse d'Angoulême	Zéphirin Grégoire
Durondeau	
Easter Beurré	STEWING PEARS.
Emile d'Heyst	Bellissime d'Hiver
Flemish Beauty	Catillac
Fondante d'Automne	Gilles ô Gilles
Gansel's Bergamot	Grosse Calebasse
General Todtleben	Uvedale's St. Germain
Glou Morceau	Verulam
Huyshe's Bergamot	Vicar of Winkfield

Of modern Pears or varieties, although not new, which are not yet in general cultivation, the Committee made the following selection, which are highly recommended for good quality both in flavour and bearing properties—viz.,

Beurré Giffard	Season August
Madame Treyve	" September
Summer Beurré d'Aremberg	" "
Clapp's Favourite	" "
Pitmaston Duchess	" October, November
Beurré d'Anjou	" November
Beurré Baltet, père	" "
Emile d'Heyst	" "
Marie Benoist	" January
Nouvelle Fulvie	" "
Beurré de Jonghe	" "
L'Inconnue (Van Mons)	" "
Duchesse de Bordeaux	" February
Passe Crasanne	" February, March
Olivier des Serres	" "

Varieties recommended by Committee for growing for market purposes—

Beacon	Season August
Fertility	" September
Souvenir du Congrès	" "
Marie Louise d'Uccle	" October, November
Durondeau or de Tongres	" "

Of new varieties, the Conference Pear exhibited by Messrs. Rivers and Son (season, October) was awarded a first class certificate.

In the collections of varieties exhibited from France, and not yet proved in this country, the Committee recommended the following as worthy of introduction:—

Beurré Dumont	October.
Madame André Leroy	November.
President Mas	"
President d'Osmanville	"

No list of the worthless varieties has been prepared, it being deemed sufficient in this report to notify those that are worthy of cultivation.

Without entering into comparison of the merits of the different collections exhibited, it is important to notify this fact—that the cultivation of good Pears is not confined to any particular climate or district of the country. If we take the magnificent examples from M. Cornu of Jersey as the result of good and careful cultivation, we have their equals produced by Mr. Haycock and by Mr. Thomas in Kent, and closely followed by Mr. Wildsmith in Hampshire, and Mr. Breeze in Sussex. Many other single examples throughout the exhibition were equally meritorious. No one failed to remark on the excellence of the examples from Lord Chesterfield in Herefordshire, or those further north still from Mr. Dalrymple, St. Boswells, Scotland, which were probably the most meritorious of all. Nothing contributed so much to these successful results as good and careful cultivation. As a general rule, the best fruits are produced where the greatest care is bestowed. An important factor in the successful cultivation

of the Pear is, as gathered from the returns, in the use of the Quince stock, which, from its close surface-rooting character, is more directly amenable to the attentions of the cultivator.

A general detailed report is in course of preparation, but which will necessarily take some time. This will contain the cultural and other notes supplied by the various exhibitors and the selections of varieties made by them; also a short descriptive catalogue of the whole of the varieties exhibited.—A. F. BARRON, *Secretary to the Committee.*

THOUGHTS ON CURRENT TOPICS.

MR. HIAM has again invited me to give my opinion on the cause of canker in fruit trees "quite independent of anything he has written." It is not very easy to consider this subject apart from your correspondent's views, because it is the conflict of these with established doctrines that brings the matter immediately under discussion. When casually alluding to this subject on page 422, I was inclined to think there might be something in the theory of insects causing "what is known as canker," but how much it was impossible to say, so long as evidence was withheld in support of that theory; but is Mr. Hiam's reply on page 517 evidence at all? It is the honest reiteration of his belief recorded with the best of motives, but the accuracy of his views appears only to be in some vague way confirmed by one individual who has "not actually seen the insects." So long as Mr. Hiam confines his observations to his own trees I am not in a position to say they have not been injured by insects; but as he makes a broad statement applying to trees generally that "insects are the cause of canker," I am not able to acquiesce.

THERE are hundreds of fruit trees affected with "what is known as canker," but which is really ulceration. This is caused by the punctures of insects. I had this in view when writing before, and I now find support, then quite unexpected, in the reply given to a correspondent on page 529. The question in my mind was, Are Mr. Hiam's trees ulcerated only, or really cankered? If the former he is probably right in his opinion respecting them, but if he asserts that the genuine canker of all fruit trees is "caused by insects," I am of opinion he is wrong. I prefer to rely on the causes ascribed on the page quoted. One statement embodied therein I know is true—namely, "if the subsoil be iron gravel canker is almost certain to make its appearance, however young and vigorous the trees when first planted," and the circumstances under which I gained this knowledge may be worth recording.

SOME years ago I had more to do than was pleasant with a number of young Apple trees, not a dozen or two of a few varieties, but hundreds, covering many acres of ground, embracing all the most useful varieties in cultivation. The trees were planted for commercial purposes, and perhaps no better could be had. The soil, too, appeared of the best—a reddish brown, sound, yet free-working, loam, 18 inches or more deep, and naturally drained by the gravelly brash on which it rested. The proprietor of the trees felt certain they would eventually be very profitable. For a time they grew well, producing sturdy wood that was well ripened. But in the course of four or five years canker appeared on the branches. They were fine trees then, with heads 4 to 6 feet in diameter. They were pruned, the branches doctored with strong insecticides, the soil over the roots dressed with manure, but still the scourge spread. Some we dug up, root-pruned, and replanted, but the improvement resulting was only of a temporary character. It became evident a cure was impossible. The trees were ruined, and the land sold. It was purchased by a company for extracting the abundance of iron it contained. It was full of iron, which glistened in the stones excavated. The trees I had to remove, or at least the few considered worth removal. The worst cankered roots and branches were cut away, and the trees replanted in suitable soil. They were dressed with no insecticide, yet they "grew out of the canker," and have since borne many a good crop of fruit. It was an excess of iron in the soil, and not minute insects on the branches, that caused the destruction of that great and once healthy collection of young trees. It was a lesson never to be forgotten of the importance of making sure of the real condition of the soil and subsoil before planting fruit trees extensively.

To return to the insects. There is only one way in which these, if they had "caused" the canker of the trees in their old position, did not injure those removed to the new—namely, being shaken off in transit, and I have yet to learn that fruit tree pests can be "shaken off" so easily. I have been managing and mis-managing fruit trees for nearly thirty years, and have been able to trace canker to other causes, but never satisfactorily to insects. I have seen them in cankered portions of Apple tree wood under the microscope, as I have seen others marvellously like them in the decaying wood of a gate post; but as I was not able to regard the mites as the cause of the collapse of the post, I could not consistently regard them as the originators of canker in the tree. This is my response to Mr. Hiam's invitation, and his reply shall have my respectful consideration, as, though at present I must dissent from his views, his researches are fully appreciated.

IN the account of Rood Ashton Gardens on page 519, the writer informs us that Mr. Miller intends trying if a "good pail of tar" in a Peach house will keep wasps out of it. Possibly it may, but if it does not, it will, I am inclined to think, prevent the wasps eating the Peaches, because they will in all likelihood be flavoured with tar. I am not able to speak positively on that particular point, but I believe ripe fruit, as a rule, is a powerful absorbent of effluvia, including tar. I am able to state,

as a fact, that Apples, Pears, and Melons become highly flavoured with tar if any is kept in a fruit room or frame, even if the tar itself never touches the fruit. I have seen a vessel of tar placed in a Melon frame as an experiment in destroying red spider. It was only in one night, and besides injuring the foliage of the plants, some fruits approaching ripeness that were subsequently sent to the dessert table of the owner of them were returned to the gardener as "tasting of tar." They were unmistakably tar-flavoured. It is a fact also that a large quantity of Apples and Pears have been spoiled in flavour by tar having been incautiously used in a fruit room, though not a speck of it touched any of the fruit. The effluvia was simply absorbed, just as it would be absorbed by butter if tar were placed in a dairy. Tar is dangerous in plant houses also. A grower of Pelargoniums for market tarred the stages in a large house, and arranging plants on them too soon hundreds were ruined. Considering these circumstances, I certainly think tar is best kept outside any structures in which plants or fruit are kept; and if I may be allowed to do so I would suggest that a ripe Peach be placed under a large flower pot with a saucer of tar for a night, and the flavour of the fruit be tried before placing a pail of tar in a Peach house to exclude wasps.

ON the page last quoted Mr. Williamson refers to me as having "very lightly touched" on the subject of what may be termed half-pruning Vines in the autumn. I touched lightly, because I know from experience that all readers do not alike comprehend what writers intend to convey, and I did not wish to encourage any reckless slashing. On some Vines, and especially where the growths are much crowded, the leaves near the base of the laterals are next to worthless as assimilators and storers of nutriment, and to cut back the laterals too early to such so-called leaves would probably be a mistake; but in the case of well-developed and in every respect perfect leaves, I am of opinion it is quite safe to shorten the laterals just before the foliage commences changing, provided four are left on each lateral. After the leaves change it is doubtful if they store up much more food; and it is also a question if the removal of a number of them checks root-action to the prejudice of strong established Vines. I have tried the plan carefully for several years, first limiting it to one Vine the crops on which warranted an extension of the practice. I know also the plan is systematically adopted by one of the most famed Grape-growers in England, who has a brilliant record in exhibiting; also in a celebrated garden where Grapes are not grown for showing; but the crops are undeniably fine, and the gardener is admittedly one of the most able of the craft which he adorns. Still, though I and others have found the practice good, I do not advise its indiscriminate adoption, and regardless of the actual condition of the foliage, but would rather counsel others to do what I did myself—proceed cautiously and experimentally, then extend or stop procedure according to the results achieved.

I THINK the food stored by the leaves in the upper parts of Vine laterals does not benefit the lower buds which we rely on for future crops of Grapes, but is cut away. We want more nutriment storing by the lower leaves, and these should at no time be shaded, overcrowded, or weakened in their functions by the foliage above. Mr. Williamson's friend no doubt pruned his Vines too closely, and possibly too early in the season, and in that case would be certain to defeat his object.

A VERY useful hint is given on page 525 on forcing Seakale by covering the crowns with soil dug from between the rows and filling the trenches thus made with fermenting materials. Persons who are content to wait for "Kale" may have produce of the first size and finest quality without any artificial heat. Plant sets, with growths starting, a foot apart in two rows in rich deep soil in March, then have a space of 2½ feet and plant two more rows, and so on. If well tended very fine crowns will form during the summer, and these covered 7 or 8 inches deep with soil dug from between the twin rows early in the spring push through it, giving finer produce than can be had in any other way, and of a quality that cannot be surpassed. As hundreds of persons refrain from growing Seakale because they possess no means of forcing it artificially, this simple method is worth thinking about; and the more so since the Kale is ready between the seasons of winter Greens and early Peas. Large quantities of Seakale are grown in the manner described by a few individuals, but the practice is by no means so common as its merits deserve. The lighter the soil the better, and it should only be placed on the crowns when in a dry, free, workable state. The Kale is ready for cutting immediately the growths are seen pushing through the soil.

ANOTHER good hint was recorded a little time ago on growing Tuberose in a very simple manner. It appears Mr. Bell of Strathfieldsaye keeps the bulbs in paper bags till May, then plants them in good soil in the open garden, takes up the plants and pots them in the autumn, and they afford flowers plentifully under glass in the winter. It is to be remembered that Strathfieldsaye is in the south of England, and it is not to be expected that similar results are attainable everywhere; yet the experience reminds me that years ago Tuberose were started in pots towards the end of March or the beginning of April, grown under glass and prepared for planting out in June in clumps of three or five in mixed borders, and they flowered freely towards the end of summer many miles north of Hampshire. I have seen scores of them, but no one appears to have thought of lifting and potting those that were late. They would, of course, be later still by not planting till May, and then in the open ground like Potatoes, and the plan that appears to be so successful with Mr. Bell is certainly worth trying by others who covet these delightful flowers.

EVIDENCE appears to be conflicting as to the hardiness and usefulness of the American novelty, the White Plume Celery, that needs no earthing. I have been so many times disappointed with sensational introductions that this variety has, as adjudicators of exhibited articles not good enough for approval euphemistically say, been "passed." I haven't grown it nor seen it, and, with all due respect to those who praise it, shall stubbornly refuse to admit its equality with the old-fashioned Celery of British gardens until I have proof of its virtues. It may be said there is no "reason" in this decision; probably there may not be, but I presume a person has a right to be incredulous, and even stubborn if he likes.

I HAVE had occasion before to say that Mr. Iggnlden is a "tough customer." When he gets anything into his head it appears a fixture. He stands to his guns on the question of what he believes the error of exhibiting late Grapes till the Chrysanthemum show season. In that case he would exclude collections of Grapes from shows until then, and then admit all the varieties; but I suppose he knows that all of them are not in the best condition even in November. His instance of a gardener showing several varieties so well in August with the approval of his employer, simply shows the gardener does his duty in endeavouring to merit that approval; and then he somewhat strangely asks what is to prevent others doing the same without the approval of those who employ them? The answer is obvious—their disapproval. That is quite sufficient. He need have no fear that if owners of vineries constructed for the purpose desire Grapes after November they will not have them. The truth is that since the exhibition of a few of the long-keeping varieties of Grapes before November a greatly increased number have been provided long after then, otherwise the prices for them in the first three months of the year would increase instead of diminish. A good many Black Hamburgs and Muscats are shown before they are even presentable, but that is no reason they should not be exhibited when they are. The whole question turns on the stipulations of schedules. Make these clear and contentions will vanish. For instance, take the Madresfield Court out of the Any other (than Black Hamburg) variety class, and assign it a class to itself, and there will be little left to grumble about; and it is observable that persons who are in the habit of winning first prizes with six or eight varieties of Grapes in August or September do not complain. The condition that three bunches of Grapes shall form a dish is to say what hundreds feel—absurd. In that I agree with our reformer; and also that a good judge would not award a prize to unripe fruit if there were ripe fruit in the same class, and otherwise good; but there is a good deal of "ripe" fruit staged that represents, if it represents anything, the reverse of good culture, and most good judges recognise the evidence of superior cultivation, which exhibitions are supposed to promote.

MR. WARD refers to my test example of judging, in which an uneven stand of Chrysanthemum blooms examined individually merited two points more than those more even in size in another stand. The same relative differences in Pears and Apples would have afforded an equally good example. Your correspondent does not say he would have awarded the first prize to the stand in which the blooms were determined after close examination to be two points inferior to the others, but observes I "allow nothing for evenness." Granted. The question is, permit me to say, not what either I or he would do in such a case, but what would be right to do under such circumstances? This is an important matter, and, with the object of testing the point I will submit that as a matter of principle everything staged should be judged on its individual merits, and that the general evenness of a number of blooms or dishes of fruit in which some varieties, even when perfect, are naturally smaller than the others, should only turn the scale when the points of merit, deduced after critical examination, are equal, it being understood that every quality is taken into consideration in the individual inspection, and that the character of each variety when fully developed is kept distinctly in mind. I think it is time some general understanding was arrived at on this question for the guidance of both exhibitors and judges, as it is clear some adjudicators attach more importance to the general evenness of collections than others do who found their awards on the merits of the individual examples in the collection, and thus exhibitors are often in doubt as to "what to be at."—A THINKER.

ROOT PROPAGATION OF BOUVARDIAS.

THIS is one of the most popular autumn and winter-flowering plants in cultivation. It is a profuse bloomer, and can be had in flower during five or six of the duller months in the year. For cut blooms, or for plant decoration, it has few equals at this season, when flowers are in great demand in most establishments. All the varieties are easily propagated and cultivated. When well grown many of them will produce corymbs of flowers almost as large as Lilies, which stand for a long time on the plant and in a cut state before decaying.

They are propagated from cuttings of the plant and division (or cuttings) of the roots. I prefer the latter system, as the plants raised in this way grow more strongly, and are not so liable to flower prematurely as those struck from cuttings in the ordinary way. To obtain plants with strong well-ripened flowering shoots by the autumn the cuttings should be inserted by the end of February or the beginning of March. The compost we use for the cuttings consists of loam, leaf mould, and silver sand in equal parts, passed through a fine sieve, and thoroughly incorporated. In making the cuttings the soil is shook clear from the roots of the old plants, which are small and wiry; they are then cut in lengths of not more than half an inch. These are sown thickly in well-drained pots,

pans, or boxes, as the case may be, and covered to the depth of half an inch. They are then placed in a gentle heat, watered with a fine-rose pot, and covered with pieces of glass, which keep the soil moist with but little watering until they are growing.

When the plants have grown large enough they are placed into 60-size pots and kept growing under glass until the beginning of June. If the weather is favourable then they are turned out of the pots and planted in an open but sheltered position in the kitchen garden, where they will be exposed to sun and air. We plant them in rows 2 feet apart, and 20 inches asunder in the row. A little leaf mould is mixed with the garden soil round each plant. They root freely in this, and can be lifted with fine roots in the month of September.

The summer treatment consists of watering the plants in dry weather, stopping them two or three times during the season to make them branch, and in staking the plants as they grow to prevent their being broken by wind or rain. This, and sprinkling the surface of the soil with Thomson's Vine manure occasionally, is all the labour they will require until they are potted and staked in September; after which they are placed in cool frames and kept close for a few days till they have taken with the shift. When this has been accomplished the plants can be removed to a greenhouse, and made to flower at pleasure by placing them in a gentle heat as required.—A. PETTIGREW, *Castle Gardens, Cardiff*.

[We learn from a competent judge who has seen the plants referred to that they are of unusual excellence.]

LADY BEATRICE LAMBTON PINE APPLE.

REFERRING to "D. B.'s" question regarding the successful ripening of this Pine Apple, I beg to say that I have found it necessary to entirely withhold water from its roots immediately it shows signs of ripening. Under this treatment I have some fine examples of it just now that have coloured to the crown without any sign of decay at the base. I know of no Pine Apple that is so full of juice, and the flesh of which is so melting and richly flavoured as this. In appearance and in every respect it is a noble Pine. It has, however, one fault—viz., it grows so tall where other varieties grow short and stubby, that it cannot get head room in our pits.—D. THOMSON, *Drumlawrig*.

THE PRIMULAS.

(Continued from page 467.)

PRIMULA JAPONICA, *Asa Gray*.—After ten years' failure, owing to the plants and seeds being destroyed on the homeward voyage, it was at last, through the efforts of Robert Fortune, successfully introduced early in 1871. It was first seen by him in a florist's basket near Yedo, the capital of Japan, in May, 1861, and, as he says, at once crowned by him the "Queen of Primroses." The following is the description given at the time. Its flowers are of a rich magenta colour, arranged in tiers one above another on a spike nearly 2 feet in height, with leaves not unlike our English Cowslip. On the same authority we are told that the first living seeds of this remarkable Primrose were carried in Robert Fortune's vest pocket, who, curiously enough, had a great difficulty in disposing of them, not only at his own price, but almost at any price at all. The glowing descriptions of this plant compared with the knowledge hitherto possessed of this genus looked too unreal to be taken at first hand. The seeds eventually became the property of Mr. Bull of Chelsea, who says that it was one of the best plants commercially that had ever passed through his hands. The very first year it flowered it received along with a variety called *Lilacina* a first-class certificate from the Royal Horticultural Society, since which time its popularity has only been a matter of course, and although now not so much cultivated in pots as it has been hitherto, it is yet one of the most common hardy summer decorative plants we have, an inmate of every garden, and deservedly so, as it has by now been proved to be perfectly hardy even during our most severe winters, and, indeed, the most brilliant coloured flowers we ever had the pleasure of seeing were grown from seedlings in the open air, forming tall robust specimens. It may, however, be noted that the locality is mild, the soil rather dry than otherwise, and the position partly shaded from the east and south. In low-lying or cold situations we are not so sanguine about perfect success in the open air; but if a sheltered corner be chosen, and suitable rich soil in which to grow it, we have little doubt about it ultimately. It is also largely used planted out in beds in the conservatory, more especially in the north, where it is much appreciated for this purpose, and in a few cases grown in pots for the want of beds or borders in the house. There can be little doubt about the advantage of planting out, soil and light being considered, there being a considerable saving of labour both in watering, potting, and other little attentions. Liquid manure should at first be given both weak and sparingly, gradually increasing it until the flowers begin expanding. If there be a rough semi-wild portion of the rockery choose such for *P. japonica*. It should be planted in a position 2 or 3 feet above the walk, so that the spikes will be almost on a level with the eye, a background of Lady Fern, stones, or even old decayed roots, any of which will show it to the best advantage.

The seed should be sown directly it is gathered from the plant. This saves much time and trouble, for if the seeds be kept until spring or until the outer covering has become hardened they invariably take one, two, and three years to germinate, perhaps more before all are up, whereas by sowing at the time of gathering they germinate freely in little over a fortnight, and a succession of young, fresh, vigorous plants are annually at the disposal of the grower. In some cases it may be found expedient to replace the old plants, fill up gaps, or else plant fresh colonies. As the seedlings are extremely variable the process is always interesting, when we see some with marbled or variegated leaves, others with pale, almost white, flowers, and so on, the chances being generally in favour of something good turning up in the case of large batches.

Much was said at the time of its introduction anent its hybridisation and the probable new races of Primulas we were soon to have; but we have as yet seen no hybrids, which we would fain lay to the want of application and proper material, for until a year or so ago, on the introduction of its near ally *P. prolifera*, and a year previously *P. floribunda*, we had few worthy of being matched with this gigantic species. It has been crossed with both the above, and we are anxiously awaiting the result, the more so as the hybrids so far are not typical *P. japonica*. A brief description of this popular plant may be pardoned, so as to make the series more complete. Leaves not unlike those of a robust Cowslip, almost sessile, from 3 to 6 inches long, and half as broad, between obovate and oblong, wrinkled, and generally doubly toothed, inclined to be erect in the form of a basin or nest; flower stalk from 1 to 2 feet in height, bearing from three to nine whorls of brilliant magenta or variously coloured flowers, the numbers in each whorl varying, but sometimes very numerous, an inch or more in diameter, the little pedicels as long as the flowers, and the corolla tube about three times longer than the calyx. It flowers May and June, native of Japan. It was first described by Dr. Gray in "Mem. Amer. Acad. Science," vol. vi., p. 400, from specimens collected in 1855 near Hakodadi, and afterwards collected by Maximovitz at Yokohama. Syn. *P. pyramidalis*, *Sieb.*

P. KAUFMANNIANA, *Regel*.—A comparatively new species from Turkestan, a coloured figure being given by the author in the Flora of that country, recently published. It has more resemblance to a Cortusa than a Primrose, and certainly distinct from any we have hitherto had in cultivation. It is said to have a marked resemblance to *P. septemloba*, differing in having more numerous lobed leaves and smooth pedicels. *P. Kaufmanniana* grows from 6 inches to a foot in height. The scape slender, with two whorls of from twelve to eighteen flowers, glossy violet, and very handsome, almost an inch broad, with a tube about the same length. The calyx is sub-campanulate, teeth lanceolate acute; the bracts at the first whorl narrow, dentate, those of the upper entire. Leaves on long stalks, orbicular in outline, with a deeply cordate base, and divided into about ten principal lobes, these being irregularly serrated, prominently veined, and, as well as the flower stalks, covered with a soft pubescence. Like our common *P. cortusoides* the leaves die entirely off during winter, leaving a little round bud. It is perfectly hardy and does well on the rockery in a rich light soil. It was found at the foot of the Almatz mountains, the top being covered with snow. It flowers April. Syn. *P. cortusoides*, *Herder*.

P. KERNERI, *Göbel and Stein*.—An interesting hybrid, *P. sub-Auricula* × *viscosa*, *Stein*, and easily cultivated in situations suitable to the Alpine *Auricula*. It was first collected by Mr. Kiegschommissar on Eisenhut, near Turrach, in Steiermark, in company with P. Göbelii underneath or near to Elm trees, and described by Stein in the "Botanik Zeitschrift" a few years ago. The leaves are light sap green, broadly spatulate or obovate, their edges serrate, dentate from the middle to the apex, and, like others of the hybrids between *Auricula*, *viscosa*, and *daonensis*, the middle or end tooth considerably larger and longer than the others. The whole plant is densely covered with short whitish hairs, having black glandular tips, those on the leaf edges being longest. Flower scape stout, an inch or two in height, carrying several large reddish violet flowers, with a whitish yellow centre. Calyx campanulate, the teeth twice longer than broad, elliptic, or nearly ovate, and pointed. Also found in Styria, flowering with us April and May.

P. LONGIFLORA, *All.*—A charming species resembling *P. farinosa* in a general way, but much larger in all its parts, and altogether a handsomer plant. The leaves are only slightly mealy underneath, much longer than those of *farinosa*, about the same shape with the exception of being a little more pointed and more irregularly notched, and not so distinctly dilated at the base. The flower stalks are much longer, nearly 1½ foot high; bracts surrounding the umbel longer and broader; the divisions of the calyx more distinctly triangular and pointed, and the corolla tube three times longer. The flowers are over half an inch in diameter, brilliant violet or violet purple, contrasting well with the sulphury dust

which almost envelopes the calyx. It is a more valuable garden plant than its near ally, and if a little more difficult to manage well it repays handsomely all the extra attention given to it. During the winter or resting season the leaves die off, leaving a little mealy ball, which will be all the better for protection with some loose material, the looser and lighter the better, so as not to engender damp, which is the greatest enemy to this gem. It belongs exclusively to the granitic regions, and should be grown in a light well-drained soil, a shallow raised pocket being the best, as it insures the water running off more rapidly. The compost we use consists of peat, leaf soil, plenty of sharp sand, a little loam, and a few pieces of granite, more particularly round the collar. Native of the grassy regions of the high Alps at elevations of from 5000 to 7000 feet above sea level. Flowering with us May and June. It ripens seed fairly well, and may be increased by this means. Syn. *P. farinosa* var., *Scop.* *P. longiflora* Krattlii, *Brugger*, 1876, said to be a hybrid between *P. farinosa* × *longiflora*, does not diminish the difficulties already existing with regard to nomenclature. *P. luteola*, *Rupr.*, is one of those free-growing Primroses that cannot be too well treated in the way of rich soil. A robust grower naturally, and when in its element one of the handsomest of the yellow-flowered kinds in cultivation. In strong specimens the flower stalks have a tendency to become fasciated, but this, instead of diminishing, adds greatly to its beauty, as it rarely fails to open all the flowers, the head being often about half a foot across. It delights in a cool clayey bottom, and may be grown in a partly shaded spot in a deep rich soil; indeed, wherever *P. Stuarti* and *sikkimensis* will do *P. luteola* will be found to thrive well.

It generally grows from a foot to 18 inches high, the stem thinly covered with golden yellow dust, terminating with a large head of sizable sulphury yellow flowers. Leaves from 3 to 6 inches long, lanceolate, having small abrupt serratures along its margins, smooth, shiny, light green. They die down during winter, leaving a large oblong bud, which may be protected with a loose material during severe frosts; otherwise it is perfectly hardy. It flowers during the spring months. Native of the Caucasus.

Syn. *P. auriculata*, *Hort.* It also does duty for *P. nivalis*, *Pall.* —D.



THE annual general meeting of the NATIONAL ROSE SOCIETY will be held, by the kind permission of the Horticultural Club, at their rooms, 1, Henrietta Street, Covent Garden, on Thursday, the 17th December, at three o'clock, for the purpose of receiving the report electing the officers and Committee for the ensuing year, confirming or otherwise the arrangements made by the General Committee for the exhibitions of 1886, and the transaction of other general business.

— AT the last meeting of the Royal Horticultural Society, several interesting hybrid *Calanthes* were shown by Sir Trevor Laurence, Bart., M.P., amongst them being *CALANTHE PORPHYREA*, which was raised in the rich collection at Burford Lodge. It was obtained from a cross between *Limatodes labrosa* and *Calanthe vestita rubro-oculata*, and while resembling the former in size and style of flower is intermediate in other respects, and superior to both in colour. The sepals and petals are small, but of an exceedingly rich crimson, very bright, the lip being lighter at the base, with numerous crimson spots and a yellowish spur. It may be remembered that another fine *Calanthe*—*Sandhurstiana*—was obtained from nearly similar parentage, *Limatodes rosea* taking the place of *L. labrosa*.

— A USEFUL plant shown and certificated at the same meeting was *CHRYSANTHEMUM BOULE DE NEIGE*, a reflexed variety, of dwarf habit, and very free flowering. The blooms are pure white, and as a late variety it will prove most valuable. Mr. R. Owen also exhibited it at the National Chrysanthemum Society's meeting on the following day, when it was again certificated.

— A CORRESPONDENT, "J. R.," will be glad if any experienced gardeners will detail their methods of filling ICE HOUSES, as the information would be of service to him, and he thinks to many other readers. Mr. Ward communicates details of an excellent method of storing ice but not in houses.

— "J. R." also asks if anyone can give information respecting an insect which is doing considerable damage amongst his potted Hyacinths by eating the roots. The insect somewhat resembles a large mealy bug, being quite white and about the same size and shape. He has never been troubled with it before, and thinks it is rather unusual.

— WE learn that MESSRS. WEBB & SONS of Wordsley, Stourbridge, have recently been honoured with a special Royal warrant, appointing them seedsmen to Her Most Gracious Majesty the Queen.

— A USEFUL conservatory climber is *PASSIFLORA CÆRULEA-RACEMOSA*, as it produces its purplish flowers in great profusion through the summer months. In the autumn it is almost equally attractive, as it is then laden with abundant golden yellow fruit, which set very freely. There is a fine example of this plant trained to the roof of the greenhouse at Coombe Leigh, Kingston, and at the time when Mr. Orchard had his Chrysanthemums in their best condition this also was highly attractive.

— SOME time ago we announced that a committee of the leading inhabitants of Bridge of Allan, N.B., had been formed to obtain funds for a TESTIMONIAL TO DR. A. PATERSON, in recognition of the service he has rendered as medical practitioner during forty years in this district. In the horticultural world Dr. Paterson is also well known as an enthusiastic and skilful cultivator of Orchids. We now learn that the subscription list is to be closed on Christmas Day, and all intending subscribers should therefore at once communicate with Mr. R. P. McCagie, Bridge of Allan, N.B.

— IN the description of new garden structures at Cleverley, on page 524, a misprint occurs in the address of MR. JOSEPH BRAMHAM, which is given as Wall Street. We learn there is no such street in Liverpool, and readily give Mr. Bramham's correct address—namely, 104 Dale Street; works, 44, Elizabeth Street, Liverpool.

— WE observe in CARTER'S VADE MECUM, just issued, that trade enterprise in offering prizes for the produce of seeds has developed into a somewhat advanced form, prizes of £10, £5, £3, £2 and £1 being offered for the best "record of the season"—that is, to exhibitors winning the greatest number of prizes at any shows in any districts. Subject to the conditions attached, the prizes are open to all "amateurs and gentlemen gardeners," which we presume means gentlemen's gardeners, but we are open to correction on the point.

— "A VISITOR" writes:—"I recently saw a GRAND DISPLAY OF EUCHARIS at Shirecliffe Hall, Sheffield. There were six plants 3 to feet across, the leaves 2 to 3 feet long, proportionately broad, dark and healthy. They were bearing scores of pure white Lily-like flowers, filling the air with their delicate fragrance. The plants were arranged with a background of large specimens of *Asparagus plumosus*, *A. plumosus nanus*, *Stevensonia grandifolia*, *Dæmonorops palembanicus*, *Croton majesticus*, *Musa Cavendishii*, and *Adiantum cardioclæna*. I never saw a more lovely sight of its kind."

— THE usual monthly dinner and conversazione of the HORTICULTURAL CLUB took place on Tuesday last, at the rooms, 1, Henrietta Street, Covent Garden. Amongst those present were Mr. John Lee (Chairman), the Hon. and Rev. J. T. Boscawen, Dr. Masters, and Mr. Charles Eliot (Boston, U.S.A.), Dr. Hogg, the Rev. F. H. Gall, the Rev. Th. Fintoff; Messrs. C. T. Druery, Collings, Upcott Gill, G. Bunyard, H. Turner, and the Secretary. The discussion was opened by Dr. Masters on "Town Gardens, and Plants Most Suitable for Them," and a very interesting discussion arose on the subject, many of the facts brought forward by Dr. Masters being evidently new to most of those present.

— REMARKING on the DURABILITY OF WOOD CUT IN SPRING AND IN WINTER, the Editor of *Forestry* says:—"Timber cut in the spring is, according to some authorities, not so durable as that cut in winter, and recent scientific investigations appear to sustain this belief. It is shown that the richer the wood is in sulphuric acid and potassium the more liable it is to rot and mould. Wood cut in the spring months contains eight times as much of the former and five times as much of the latter as wood cut in the winter; hence it is concluded that the best time to cut down trees is winter. It would be interesting to have the opinions of experienced practical men on this point. It is a fact that trees are felled at all times from late autumn till late spring, much in accordance with convenience, custom, and other considerations. The question as to

whether the above-noticed deduction applies equally to resinous and non-resinous trees deserves special consideration."

— A PACKET of Messrs. Cassell & Co.'s publications, received a few days since, contains the following—Part 19, "Cassell's Popular Gardening," giving chapters on trees and shrubs, house and window gardening, bush fruits, stove plants, hardy fruit garden, bulbous plants and propagation, with numerous illustrations, including a frontispiece showing a group of Orchid flowers. Part 4 of "Familiar Trees" is devoted to the Apple, with coloured plate of fruit and blossom. Part 81 of "Familiar Garden Flowers" gives plates and descriptions of the Foxglove and *Deutzia gracilis*, the latter being an unsatisfactory representation of this popular plant. Part 22 of the "Encyclopædic Dictionary" contains from "Croose" to "Cyclopterus," or from page 577 to page 640. Part 19, the "Book of Health," has some useful chapters; and part 43 of "Canaries and Cage Birds" deals with miscellaneous British birds, giving a coloured plate of the Finches.

— *Nature* states that the United States botanist, "DR. ASA GRAY," was presented, on November 18th, being the seventy-fifth anniversary of his birth, with a silver vase, by the botanists of America. It is described as being about 11 inches high, and is appropriately decorated with those plants which are distinctively American, and which are most closely associated with Dr. Gray. The place of honour on one side is held by *Grayia polygaloides*, and on the other by *Shortia galacifolia*. Among others, *Aster Bigelovii*, *Solidago serotina*, *Lilium Grayi*, *Centaurea americana*, *Notholæna Grayi*, and *Rudbeckia speciosa*, are prominent. The workmanship is described as highly artistic, as well as remarkably accurate. The vase stands on a low ebony pedestal, which is surrounded by a silver hoop bearing the inscription:—"In token of the universal esteem of American botanists." The greetings by card and letter of the 180 contributors were presented on a silver tray. They contained the warmest expressions of esteem and gratitude."

— A CORRESPONDENT of the *American Gardeners' Monthly* thus describes finding in Carolina the AMERICAN CLIMBING HYDRANGEA, *DECUMARIA BARBARA*, a plant which is scarcely known in England:—"For years I had admired a climbing plant with myriads of white flat clustered flowers, which clung to the tree whereon it grew with the tenacity of Ivy, and always intended removing a small specimen to my own home, thinking it would be a good companion with my *Ampelopsis Veitchii*, which covers hundreds of feet of the brick foundation of my home. At haphazard I drove to this specimen and collected many branches, feeling sure as soon as I reached it that I had it correctly, for it having flowered in June it was filled with its seed vessels, which, according to descriptions, ought to be urn-shaped, and sure enough they are. They remind me of the old-fashioned pot-pourri pots of our grandmothers, with their queer squeezed-in little covers."

— A FRENCH nurseryman announces that one of his novelties to be sent out this season will be *PASSIFLORA VIOLACEA*, which has been recently imported from Brazil. It is said to be "one of the species described by Vellozo in his 'Flora Fluminensis,' but though well known to botanists it has never before been introduced in a living state to Europe. The petals are lilac, the outer filaments white, and the inner ones violet blue, darker at the base; the central column is green, the stigmas green spotted with purple, and the anthers are yellow."

A CAUTION TO GARDENERS.

KINDLY permit me to call the attention of my fellow practitioners to the tactics of certain unscrupulous members of the craft, who have lately in my district thought it part of their duty to endeavour to obtain a situation by a mean and despicable trick. One of these persons called at my employer's house about seven o'clock one evening, a couple of weeks ago, and on being asked by the butler to furnish his name and the nature of his business, he declined to do so, saying he wished very particularly to see my employer, mentioning his name. As my employer is an aged gentleman he refused to see the man personally, but sent his son to inquire the reasons he had for so particularly wishing to see the former. As with the butler, he was still unwilling to state his business other than to my employer, but on being told that he could not possibly see him, he naïvely said, "I hear you require a head gardener." "Nonsense," said my employer's son, "You are mistaken; our gardener is not leaving us, you must have made a mistake in the name of the place." "Oh no!" said the man, "I am sure I have not, for a friend, who knows the place well, brought me to the door. I assure you, sir, your gardener intends leaving you." "But who told you so?" "A friend from Chislehurst." "Well," said my employer's son, "all I can say, my man, is that you have made a grand mistake," and forthwith bid him good night. The next day

my employer mentioned the matter to me, but happily they repose too great a confidence in my integrity to believe that I was guilty of surreptitiously endeavouring to obtain another berth without first communicating my intention to them, therefore the would-be aspirant for my post utterly failed in the object he had in view. This state of things might, with some employers, have caused unfounded suspicions, and perhaps cost innocent gardeners the loss of good situations. A case similar to this did happen not far from here a few months ago, but happily the informant did not get the coveted post.

On inquiry I found that the person who had been trying the trick in my case was temporarily employed in a large nursery a few miles from here, and I sent him a letter through the firm requesting the names of the person who informed him that I was leaving my situation, but, as I expected, no reply has been as yet received. I may add that the firm is entirely exonerated from any knowledge or participation in such methods of procuring situations, and no one more than they regret that such methods should be adopted by men in their employ. I hope my fellow practitioners will be on their guard against such men who, stooping to such acts, are unworthy of the profession, and richly deserve a greater punishment than the publication of their misdeeds in the press.—T. W. SANDERS.

CANKER IN FRUIT TREES.

MUCH is written about canker in fruit trees. My experience on a strong soil, with clay subsoil, is head down trees afflicted with canker and graft with a strong-growing sort. Some years ago I had an old tree of Summer Orange (a local sort, good eating in September). This tree was badly cankered all round the stem. It was grafted with Warner's Seedling Apple, a strong grower. The grafts only grew on one side. This side is now quite clean. The other side is still cankered, but not so badly as it was years ago. Nothing whatever has been done to the stem to try to cure the canker, and the tree has neither been root-pruned nor manured in any way. Therefore I attribute the cure of one side entirely to the influence of the grafts, which have for several seasons borne good clean heavy cooking Apples, keeping until April and May sometimes. If Mr. J. Hiam would tell me through your paper where I can get the Cobham or Popes' Apple tree true to name he will confer a favour.—ROBERT WARNER.

MR. J. HIAM, page 517, commences with this sentence—"I am well acquainted with the fact that almost every writer is against me in my conviction that insects are the cause of canker." This may be so to a certain extent, and if he holds that they are the cause of every canker I also am against him. That they cause a form of canker I am almost positive. I hold that there are different sorts of canker (two, if not three). One I doubt not caused by imperfect drainage, and the tap root being allowed to run into cold wet clay. In my garden here (not five miles from the Liverpool Exchange) I have no such canker, not even on Ribston Pippin or Lord Suffield trees, more than ten years old. Why? Because the trees are all on red sandstone rock, which, although moist, never holds water like clay, and the tap roots cannot penetrate into them; nevertheless I have had a canker show itself on some branches of newly planted trees, caused by American blight, but this I have immediately stopped by painting the part attacked with petroleum, using an ordinary paint brush. This destroys the insects instantly without injuring the tree, and the canker does not spread. Trees once attacked by this pest should be watched, and directly there is a trace of it seen apply the petroleum and it will soon cease. The petroleum I use is the same that I burn in the lamps. Anyone having fruit trees on rock must use plenty of manure yearly if he wants a good crop of fair size fruit, whether Apples or Pears, &c. If I had heavy clay soil I should take out a good area before planting a tree, put in a good layer of brickbats, stones, &c., and under the tap root a slate, thus preventing one sort of canker at any rate; and by watching for insects and applying petroleum when they are found endeavour to do away with canker *in toto*.—L. J. W.

CHRYSANTHEMUM BELLE PAULE.

ONE of the best Japanese novelties shown this season is that of which a bloom is represented in the accompanying woodcut, fig. 80. Though a novelty to English growers it is not strictly new, having been sent out by M. Marrouch in 1881, but it does not appear to have been introduced to England until last year, when it was distributed to a few of the leading Chrysanthemum exhibitors. Mr. Molyneux succeeded in developing the characters of the variety, and two blooms staged by him in his collection of thirty-six varieties at the Crystal Palace Show, with which he won the £10 prize, was the first time it attracted prominent attention at a London exhibition. At Kingston in the following week it was again well shown by the same grower, both in the Challenge Vase collection and in the class for six blooms of one Japanese variety. The latter were wonderfully fine, and indicated the character of the variety to perfection. At this show both Mr. Molyneux and Messrs. Jackson & Son were awarded first-class certificates for it, while at a recent meeting of the National Chrysanthemum Society Mr. N. Davis of Camberwell was awarded a similar honour.

The variety has been generally shown under the name of Belle

Pauline, but M. Ghys gives the name in his list as Belle Paule, and we are informed that this was the title adopted by the raiser. The florets are long and drooping, broad, flat, or partially fluted, very distinctly margined with lilac purple on a pure white ground, a character which renders the variety most telling in a stand of blooms, especially as it is of good substance and size. Mr. Molyneux describes it as "a tall,

some seed of my selection at the Editor's request, and will gladly wait the result.

If Mr. Venus would like to send some of his to the Fruit Committee, he need have no fear in doing so, as it is not for competition, but comparison, but I will gladly wait his convenience in that matter, any time when agreeable to him will suit me.

Mr. Oliver says a few plants were selected from a seed bed and given



Fig. 80.—CHRYSANTHEMUM BELLE PAULE.

vigorous grower, and with good treatment sure to produce fine blooms." It will undoubtedly become a favourite with exhibitors, and we may expect to see it much more generally shown next season.

VENUS'S v. COOK'S EARLY CABBAGE.

I AM very glad to be able to comply with Mr. Oliver's suggestion to have the two selections fairly tried side by side, and herewith enclose

to Mr. Venus. Now, Mr. Venus told me he selected them himself from Cook's Early, after they were planted out. When I say that my selection is superior to Mr. Venus's, I do not signify they are distinct; the only difference is that my selection is more conical, consequently less liable to injury from frost and wet, being a strong point in its favour, but what I maintain is that neither of them has departed far enough from the true type to be named anything else than Cook's Early, and in this I am supported by some good old Northumberland gardeners and nurserymen who have grown Cook's ever since it was sent out. I am at one with

Mr. Oliver in saying it ought to be more widely known, as it is undoubtedly the best all-round Cabbage I know. We are cutting daily from a large square of them which have come through a series of very severe frosty nights last week, and to-day they seem as fresh and plump as before the frost, which proves it to be a very hardy Cabbage.

My chief object in writing was, if possible, to prevent this old variety being sent out under a new name, and it would be to the interest of the public if nurserymen's catalogues contained a less number of synonymous names.—DAVID INGLIS, *Howick, Lesbury, Northumberland*.

[Mr. Inglis has sent us seed, and the two stocks referred to shall be fairly tested.]

THE HORTICULTURAL OUTLOOK.

WE are fast approaching towards the end of another year, and it may not be out of place to "take stock" of what are the prospects of horticulture in the future. We know that sometimes the "unexpected happens," and it may be that the material prosperity of the country, which has shown in recent years some signs of backgoing, will now progress by leaps and bounds. This is no doubt a sanguine view of matters, and is not, I fear, very generally shared in. It will have to be conceded, I fear, that no such great improvement will take place, and there are many reasons for thinking that such is most likely. The agricultural outlook is not so bright and flourishing as it was twenty years ago. The boundless stores of other lands are now so easily transported to this country that the farmer will have to face this kind of competition, always in the future in a great degree, and even in a much greater degree than that at the present time. This means reduced rents, and consequently reduced landlord's incomes; and they in turn must be further compelled to reduce expenses, and also to try and enlarge their incomes by means which most of them in more prosperous times would not have thought of. Selling farm and garden produce is now quite common among landed proprietors, and one can hardly blame them. At the same time they are reducing working expenses in every way possible, and this means a loss to the working man. It is, indeed, true that one class cannot be independent of another, and in this present crisis the straits of certain classes are making themselves felt on all.

Those who make a living by horticultural products are of course feeling very severely the "hard times." Look for instance at the prices obtained for Grapes in Covent Garden and other markets in the country at the present time. They are simply ridiculously low. It may be urged that this is the result of over-production. No doubt this has something to do with it. But the over-production is caused more by gentlemen selling the produce of their gardens, and by the general public not giving so many dinner parties, than by the quantity produced being in excess of the demands of the nation if only trade were good and rents had not come down. At the same time, if such a state of matters is to continue some growers must go to the wall, and things will in some measure right themselves by bringing about the "survival of the fittest." This is not a pleasant prospect to contemplate, but it must be faced.

Emigration must be more and more increased if our countrymen are to find scope for trade, and also "ways and means" of living. "Greater Britain" must in the future receive from her more ancient and somewhat failing progenitor more of her sons and daughters, so that they may find room to grow and flourish, and also employment that will give them a due reward. Having had a good deal of experience in regard to sending young men abroad to grow Tea, Coffee, Cotton, &c., I may venture to advise young gardeners who have good constitutions, and are of steady and moral habits, to seek engagements in some of the quarters of the globe where there are openings for enterprise and prospects of employment which will yield a fairly good competence for after years. It must be admitted that ill times at home have also had a bad effect on the prospect of foreign enterprises too, but still there is more room for pushing young gardeners abroad than here.

Compared with sixty years ago, of course, horticulture has made such wondrous strides that almost no comparison can be made; but such enormous preparations have of late years been made to supply what till very lately appeared an ever-to-be-increasing demand for gardeners and all things required to stock gardens and carry them on, and also to supply the apparently quite unlimited public demand for fruit, flowers, and vegetables, that now, when things are either at a standstill or going back, there is a glut in the market, and produce is being disposed of at miserable prices for the vendors.

There seems no way of getting out of this difficulty but by the old rule of supply and demand, and I fear many will have to suffer in the process.—HORTUS.

CHRYSANTHEMUM NOTES.

NATIONAL CHRYSANTHEMUM SOCIETY.—This Society held its last floral meeting of the year on Wednesday the 9th inst., at the Royal Aquarium, when many fine blooms were exhibited. The chair was occupied by the President, Mr. E. Sanderson, and amongst other members of the Committee present were Messrs. Holmes, Ballantine, N. Davis, R. Dean, H. Cannell, Gibson, Berry, and Swift. The variety Cullingfordi again occupied the attention of the Committee, Mr. Holmes pointing out that the variety being already published in the official catalogue as a Japanese, the decision at which the Committee arrived at their last meeting might lead to some confusion. After discussing the subject at some length it was agreed to refer the matter to the General Committee. Messrs. Drover, Fareham, submitted the following blooms of Japanese

Chrysanthemums, and were awarded first-class certificates in each instance:—

White Dragon.—A large white flower, with broad florets, somewhat in way of Golden Dragon.

Bicolor.—A promising American variety of the Mons. Desbrieux type; colour reddish bronze, with distinct gold markings.

Gloriosum.—A clear bright yellow flower, with slightly twisted florets.

Messrs. Veitch & Sons were awarded first-class certificate for

Pelican.—A large white Japanese, with broad florets, also of the Dragon type.

Mr. N. Davis, Camberwell, showed a number of fine blooms, including several well-known varieties, such as Striatum and its parent Roseum Pictum, Thunberg, Boule d'Or, Sarnia, &c. The following five varieties, all Japanese, received first-class certificates.

Jackson's Duchess of Albany.—A variety much resembling Brunette; colour orange buff; a large and fine exhibition flower.

Ceres.—A large pinkish white flower, very useful as a late variety.

Japonaise.—Deep orange, with incurved florets, in way of Comte de Germany.

Mons. Burnet.—A very full flower, of a rosy peach colour.

Ville de Toulouse.—A superb flower, of the richest violet amaranth, with silvery reverse, much admired.

Messrs. Cannell & Sons showed an interesting collection of cut flowers of Chrysanthemums neatly arranged in bunches. One of the varieties, a large Anemone flower, was awarded a certificate.

Catherine-wheel.—A strikingly distinct Anemone variety, with long narrow white spreading or drooping ray florets, and a bright yellow centre.

Mr. R. Owen, Maidenhead, showed several plants of the dwarf white free-flowering reflexed flower, named Boule de Neige, which will be useful for decoration, and as such was certificated; it was also so honoured on the previous day at Kensington. The total number of certificates awarded was eleven, the largest number given at any one meeting. A vote of thanks to Messrs. Cannell and Mr. N. Davis for their exhibits brought the meeting to a close.

CHRYSANTHEMUM CULLINGFORDI.—Considerable discussion has taken place as to this variety being classed as a reflexed or Japanese, and as far as I can see we are not likely to bring the question to a satisfactory decision by argument. I think when the matter was brought before the Floral Committee of the National Chrysanthemum Society, and it was unanimously resolved to classify it as a reflexed flower, the resolution, as far as that Society was concerned, should have decided the matter. If the Committee could not decide with flowers actually before them, it is hardly likely that they can come to any satisfactory conclusion without blooms, which probably will not be forthcoming at their next meeting, when the question is to be re-opened. I have seen a considerable number of blooms of Cullingfordi both this season and last, and I never saw a better type of a reflexed flower outside the old Christine family. Cullingfordi was simultaneously sent out from several nurseries as a reflexed flower. It was certificated by the Royal Horticultural Society, and likewise by the National Society itself as a reflexed variety. It was also reported upon by the whole of the horticultural press as a reflexed variety. The usual custom would be to follow such a unanimous decision until good cause is shown to the contrary. I venture to say that as a Japanese flower it would rarely be shown in any good stand, and would soon be put on one side like Progne, Julia Lagravère, and other favourites, simply because they are not large enough. I noted Mr. Barker's remarks, and fail to see the resemblance of Cullingfordi to Père Delaux. Has Mr. Barker got the variety correct? I rather doubt it from his description.—A GROWER.

CHRYSANTHEMUMS MRS. HEALE AND PRINCESS OF WALES.—There seems to be some confusion respecting these varieties, and perhaps my opinion may be worth recording. Mrs. Heale is as distinct from what I will call White Princess as Lord Alcester is from Golden Empress, and more so. There are two varieties of Princess of Wales in cultivation—one a rosy pink with longitudinal lines of pearl grey, petals broad at the base and tapering to the point, and shell-shaped; the upper half of this flower loses some portion of colour with age, but before it has entirely lost its distinctive colour in that respect the lower petals have turned to an absolute purple, thus rendering it practically unfit for exhibition purposes. This is what I take to be the original Princess of Wales. A very large flower is rarely seen. The other variety, which I call White Princess, and which is correctly named and described in the National Society's catalogue under that name, is a large flower, very frequently occupying a back row in good exhibition stands; it is pearly white, slightly suffused with pink in colour, petals slightly narrower at the base than the true Princess, not quite so much incurved, and semi-transparent in texture. I have grown these two varieties for six or seven consecutive years, and they have always come true to their respective characters as I have here portrayed them. Mrs. Heale is a medium-sized flower, on an average like the true Princess of Wales; the florets are as much incurved as its parent, and are about the width of those of White Princess. They are nearly opaque in texture, and vary in colour from milk white to creamy white, and have an almost imperceptible glaze on the outer surface.—A NORTHERN EXHIBITOR.

AN AMERICAN CHRYSANTHEMUM SHOW.—The Massachusetts Chrysanthemum Show, held last month in Boston, is said to have been

very successful, being visited by 10,000 persons. One of the principal exhibitors was Dr. H. P. Walcott of Cambridge, who, besides taking numerous prizes, received certificates for several varieties. "Standing out in marked distinction with the average run of seedlings was a magnificent white reflexed flower shown by Dr. Walcott. This, which was labelled C 10, was considered the finest white seedling ever shown in Boston or anywhere else. It is a perfectly shaped globular flower, with firm strap-shaped petals of such pure colour that Elaine looks dusky beside it. The petals reflex in such a way that the flower appears to be globular, and the centre is filled to perfection. The specimen on exhibition measured over 4 inches across. It was awarded a first-class certificate of merit, and was stolen on the last night of the Exhibition by someone who no doubt hoped to propagate it from the stem."

CHRYSANTHEMUM BOULE D'OR.—A handsome bloom of this fine Japanese variety has been sent us by Mr. N. Davis of Camberwell, by whom it was also shown at the Westminster Aquarium last week in very good condition. Well-grown examples of this are most telling on an exhibition board, and as the bloom can be had of great size, it takes its place amongst the heaviest of "back row" varieties. The florets are very broad and long, the outer ones drooping and twisted, the inner ones curling and twisting in a peculiar manner, giving the bloom a remarkably distinct appearance. Though sent out by a French raiser about three years ago, it is not yet generally grown in England, but it will undoubtedly soon find a place in the best collections.

CHRYSANTHEMUM SHOW REPORTS.—The reporters of horticultural papers and their respective editors are to my mind the backbone of horticulture. What they see and communicate form the basis of our learning on all matters connected with horticulture. Flower shows would lose their chief interest if the world at large had no reports of their doings. A large number of readers will no doubt agree with me in complimenting the staff of the *Journal of Horticulture* upon the vast amount of information reported in its pages during the recent Chrysanthemum shows. In a short space of time we have had reports of shows extending over a large area—from Kent to Cornwall, and from Cornwall to Aberdeen, and to get reports of all these shows some hundreds of miles must be travelled in anything but pleasant weather. I congratulate and thank the Editor for the full information found in these pages.—N. DAVIS, *Camberwell*.

CARTER'S BRONZE QUEEN.—Calling at the Perry Hill Nurseries the other day I was interested in observing that this fine new variety is producing an abundance of cuttings, indicating that it is a "good doer." The two plants that were exhibited at the Crystal Palace, and produced blooms that were certificated by the Committee of the National Chrysanthemum Society, will be the progenitors of a sufficient number during the ensuing spring to induce the firm to distribute plants. The necessarily limited number will command a rather high price, but the variety is of such great promise that the demand is sure to be considerable.—A VISITOR.

HOT WATER AND SCALE ON FRUIT TREES.

In a recent number of the *Journal* directions were given to a correspondent for getting rid of scale on a Pear tree trained against a wall. Having a tree in the same condition, I wish to ask whether the scale may not be got rid of by syringing the tree with water hot enough to kill the scale, but not hot enough to injure the tree? I have an indistinct recollection that this plan was tried many years ago with success. It has this advantage over scraping and painting, that it is more easily applied, and by the water running down the wall at the back of the branches the scale would be killed in places where it could not well be reached for scraping and painting. If this plan is feasible I shall be glad to know what is the greatest degree of heat at which water can be safely applied to a tree in a dormant state.—AN INQUIRER.

[Possibly some of our correspondents may have tried the hot-water cure for scale and can supply the information requested.]

THE RANUNCULUS.

THE Ranunculus is one of our most beautiful old-fashioned flowers, yet it is seldom seen, though very useful for cutting, being both a good traveller and lasting several days in good condition. If cut whilst the buds are young or about a third expanded they will continue to unfold the same as if growing on the plant. A bed of the old florists' varieties is a sight to be remembered. Many gardeners no doubt are under the impression that the Ranunculus is rather fastidious. They want attention, we admit, but they only require ordinary treatment if the soil is suitable. Sandy clayey loam is the best soil, similar to that in which the common Buttercup grows freely, and if this flower flourishes in the district it may be taken for granted that the Ranunculus will thrive too if the following details are carried out.

Whilst growing the Ranunculus requires an ample supply of moisture, but it will not thrive in a close sodden soil. The position for the bed should not be in a high and dry place, or where the soil is not drained and in a well pulverised condition. The site of the bed having been marked out stir the soil deeply, and if it is poor we would sooner add some fresh loam than use manure; but if it is de-

cided to use the latter, in autumn cow manure should be dug in, not being nearer to the surface than 6 inches. The most suitable time for planting is any time after the middle of February, when the weather is favourable and the soil in a workable condition, and we would sooner wait a week than plant when the ground is in a wet state. When planting some people draw drills about 1½ inch in depth; but what we have found the quickest and best way is to make the surface of the bed level, placing an edging of thin boards around the bed, the top edge of the board to be 1½ inch above the level. Instead of drawing drills press the tubers on the surface in rows 3 inches apart and 4 inches between the rows, covering each with a pinch of sand, which will cause them to turn out clean when the time arrives for lifting. When the tubers are all laid out the soil should be levelled carefully over the tubers up to the top edge of the boards, and levelled off firmly with the back of a small rake. If those gardeners who have hitherto planted *Ranunculus* in drills were to adopt this plan they would not regret it, and the tubers would all be of a uniform depth.

There is one point in the preparation of the tubers before planting that needs attention, and that is to soak them in water for about twenty-four hours. When this is not done the tubers are apt to force themselves upwards too near the surface, and often out of the ground altogether, which weakens them considerably, and if not detected at once they perish, this being the cause of many failures. Another cause of failure is through the tubers not being harvested carefully, or they are stored in a damp place. A blue mould or mildew will often appear amongst them, which, if not detected at once, will soon cause serious havoc. If this should happen to appear the mouldy tubers should be picked out at once and the remainder laid out thinly in a dry place.

As the young foliage appears above the ground all weeds should be removed, and on the first dry day lightly work the surface of the bed with a small stick or fork, and press the soil lightly about the roots. All the treatment they will require is to keep them free from weeds and to give them a thorough watering occasionally if the weather prove dry. A slight mulching with well-pulverised manure would also prove beneficial and would lessen the supply of water, keeping the roots cool. When the blooms commence showing colour take care that no water touch them, as the construction of the flower causes them to hold water, and if the sun happens to shine powerfully the blooms would most likely be injured unless a shading should be provided. As the blooms fade they must be removed, or the tubers may be weakened, and as soon as the foliage turns yellow and withers lift the tubers, clear them of soil and old foliage, and lay them out to dry in the open air out of the reach of sun, or, what may be better, in an airy shed. When perfectly dry store them away. If the tubers are left in the ground after the foliage decays they are apt to commence making fresh growth or roots, which weakens them considerably.—A. YOUNG.

VALLOTA PURPUREA.

I CAN fully endorse all that Mr. Roberts says respecting the treatment of this handsome greenhouse bulb at page 524 of your last issue. Your correspondent truly says that the drying system practised by some gardeners is wrong, as after having had experience with this plant for a number of years, I am convinced that it is a mistake to allow it at any time to become dry at the roots. I have generally had the best results from plants where the bulbs were allowed to increase without being disturbed; but they are extremely useful if grown with one strong bulb in a 5-inch pot, as with good feeding they throw up a grand spike of their beautiful scarlet flowers. At one time I thought it was quite right to gradually dry them off after flowering, but now instead of that I supply them with liquid manure occasionally right through the winter, and I have every reason to be satisfied with the change of treatment.—F. H., *The Chestnuts, Walton-on-Thames*.

THE CARNATION AND PICOTEE.

"The fairest flowers o' the season
Are our Carnations and streaked Gillyflowers."

I WOULD have ventured to apologise for once more writing on this subject, if it had not been that so many people are clamorous for information as to the winter management of their choice plants. I am afraid many persons do not preserve their back numbers. We value our Carnations all the more when we read that they gave exquisite pleasure to Shakespeare and so many of the ancient great and good people of centuries ago. It was evidently a favourite of Queen Elizabeth and her courtiers. Indeed, it was cultivated in England as early as the reign of Edward III., at least we would infer as much from Chaucer, the father of English poets. We also read that "many varieties of Carnations were cultivated in the time of Charles I., whose queen is reported to have been excessively fond of the flowers."

It is curious also to note the pre-eminence of the Picotee over the Carnation at one time, and anon that the flaked varieties of the Carnation were most esteemed. One would infer from Miller that Picotees were most in favour with the early florists, and that in Miller's time the flaked Carnations were preferred.

A hundred years ago flaked and bizarred Carnations were of nearly as good quality as they are now, but the Picotee did not possess the same excellence. It has been greatly improved during recent years, however. The bright golden yellow Picotee would have been a joy for ever, but it has been lost. If any grower of Picotees has the means of referring to Hogg's *Treatise on the Carnation*, sixth edition, page 58, there is a coloured plate of a fringed and not well-formed yellow Picotee. It has few good qualities to recommend it from the point of view of a modern Picotee fancier; but all will admire its rich orange yellow colour. Many varieties of this type were cultivated in England long before Hogg cultivated them so successfully in his garden at Paddington. He names as many as fifty varieties, all of which are lost to our gardens. We are told that the Empress Josephine cultivated an admirable collection of yellow Picotees in the gardens at Malmaison, also that the late Queen Charlotte and the Princesses a few years ago had a superb collection of yellow Picotees at Frogmore, which were the delight of all who saw them. The above remarks may be useful information to those who have an idea that the Carnation is quite a modern flower. Of course, one cannot judge any plant or flower either by its past or present popularity. The Carnation and Picotee must stand or fall on their own merits, although it is well not to exclude any degree of sentiment that may be attached to them.

At the present time there are many good varieties in all the sections easily to be obtained, and by ordinary care their culture presents no great difficulty. A very grave mistake which some persons make is the attempting to grow too many varieties. Exhibitors are more likely to suffer from this than those who merely grow them for cutting or garden decoration.

It is better not to grow more than about six varieties in each class or section. Thus, if we begin with the scarlet bizzarres the best six are Admiral Curzon, Arthur Medhurst, George, Mars, Rayner Johnson, Robert Lord. Of crimson bizzarres Harrison Weir, H. K. Mayor, John Simonite, Master Fred, Rifleman, and Shirley Hibberd. Pink and purple bizzarres, Mrs. Barlow, Sarah Payne, Squire Llewelyn, Squire Penson, William Skirving, T. S. Ware. Purple flakes, Earl Stamford, Florence Nightingale, James Douglas, Mayor of Nottingham, Squire Whitbourn, and Squire Meynell. Scarlet flakes, Figaro, Henry Cannell, John Ball, Matador, Sportsman, Superb. Rose flakes, James Merryweather, Jessica, John Keet, Rob Roy, Sybil, and Tim Bobbin.

Picotees, Red-edged—Brunette, Clara, Dr. Epps, Emily, J. B. Bryant, John Smith, W. Bower, Princess of Wales, Mrs. Gorton, Thomas William, Violet, M. Douglas, William Summers. Purple-edged—Alliance, Baroness B. Coutts, Clara Penson, Her Majesty, Jessie, Mary, Mrs. A. Chancellor, Mrs. Summers, Muriel, Picco, Rev. J. B. M. Camm, and Zerlina. Rose and scarlet edged—Constance Heron, Empress Eugénie, Fanny Helen, Favourite, Miss Horner, Miss Lee, Mrs. Payne, Mrs. Webb, Mrs. Rudd, Royal Visit, Evelyn, and Mrs. Nicol.

Yellow ground Picotees—Alice, Eleanor, Flavius, Lightning, Princess Beatrice, Princess Marguerite, Prince of Orange, Ne Plus Ultra, Mrs. Colman.

The cultural remarks are simple and easily summed up. The staple should be good turfy yellow loam, but I know it is almost as easy for some people to get gold dust as good yellow loam. To those who cannot obtain it, get as good garden mould as possible, add to it a fourth or fifth part of decayed manure, some leaf mould, and sand; in case leaf mould is not obtainable, peat will do. Anyone having sufficient knowledge of potting can tell by the feel of the compost whether it is light enough for the roots to run readily through it. I like to get all the plants potted in October, a pair of plants into a large 60, or one plant into a small 60. The plants do not take long to root into the fresh potting soil, and when they are fairly rooted abundant supplies of air ought to be admitted. The lights of the frames ought to be entirely removed in fine weather; when it rains they ought to be tilted. I have grown Carnations and Picotees for many years, but have never had any plants suffer from spot, or that swelling of the stems near the surface of the soil which has been denominated gout. Green fly is troublesome, but can readily be destroyed by dusting with tobacco powder or fumigating with tobacco.—J. DOUGLAS.

FREE-FRUITING GRAPES.

LATELY some inquiries have been made about these, and I am not surprised at it, as it is quite natural that amateurs with limited knowledge

of Grape-growing should wish to secure as good a return as possible. Some may say all the best-flavoured Grapes are the most difficult to cultivate, and this may be so, as the whole of the Muscats are not easily managed successfully; but there are others by no means bad Grapes, and it is more satisfactory to grow them and have them in good condition than attempt the choicer sorts and only get fruit of a third-class character. Muscat of Alexandria, although not a shy Grape in producing bunches, is very shy in forming berries, and it may frequently be seen bearing bunches which are mere skeletons. Cannon Hall Muscat is worse still in this respect. Muscat Hamburgh is also deficient, and Madresfield Court loses so many of its berries before they gain proper maturity, that allowing it to be a good one to form bunches, it is certainly far from furnishing perfect bunches at cutting time. Gros Guillaume is very shy to produce bunches, and should never be grown unless there are practical hands to attend to it. Gros Colman produces bunches very freely. Duchess of Buccleuch, a small white Grape of exquisite flavour, is one of the best of all to produce bunches. I have counted as many as five on one side shoot. The flavour of this Grape is as good as the finest Muscat, and I am surprised it is not more grown by amateurs. Black Hamburgh is a capital variety to produce bunches, and the Black Alicante is better still. Trebbiano bunches more freely than Syrian. The Duke of Buccleuch is not a very free-bunching variety, neither is Golden Champion, as both may often be seen in the best of vineries with a few bunches on one spot and no more for a considerable distance. I know of an amateur who planted a rod of the Duke four years ago, and as yet he has not seen it produce a bunch. Some may say this must be the fault of the cultivator, and I say so too, but it only goes to prove my words that amateurs had better be contented with free-fruited Grapes of average merit than trouble with shy growers and the highest class ones when there is little chance of growing them so as to fully develop their good qualities.—A KITCHEN GARDENER.

CHRYSANTHEMUMS AND THEIR CULTURE.

PREPARING PLANTS FOR CUTTINGS.

HAVING been requested to detail my experience in cultivating these increasingly popular flowers it will be well to begin at the beginning, and this is the treatment of plants after blooming for affording the best cuttings for propagation. I regard a favourable start as being necessary to a successful finish. The foundation must be thoroughly laid to insure that success which all should strive to attain who engage in the cultivation of this flower.

When the plants have done blooming cut those varieties that are plentiful producers of cuttings down to within a few inches of the soil, but do not cut shy-growing, new, or scarce varieties lower than 2 feet above the soil, as more opportunity is then afforded for the plant to break and produce cuttings, although they are not so good in quality as those pushing from the soil or close to it, for the reason that those growing out of the hard stem are much more likely to show flower buds prematurely—often, indeed, as soon as the young plants commence growing. This should be avoided as much as possible. Still, where the variety is scarce, it sometimes happens that we must have these cuttings or none at all.

Place the pots containing the old roots or stools in any cool house as close to the glass as possible, to prevent the growths becoming drawn and consequently weak. No situation is better for them than a vinery or Peach house at rest where plenty of light can be had consequent on the foliage of the Vines or Peaches having fallen. Some growers place them in cold frames, which answers very well, except in the event of very hard frost; in that case the plants require protection, or the young growths will be injured if not spoilt, as they are very tender at this stage by reason of their having been growing a long way from the glass prior to cutting down.

Some varieties will throw up cuttings so freely as to become weakened by being crowded. When this is likely to occur thin out the weakest shoots in good time to give space to the stronger. In the case of any varieties not promising to afford a sufficient number of cuttings, loosen the surface soil, and if the roots are bare through the continual drenchings of water given previous to the plants blooming, cover the roots with light gritty soil composed principally of leaf mould and sand. Examine the drainage to make sure the plants are not waterlogged, and give occasional waterings with weak liquid manure, which will tend to strengthen the growths. Too much water applied to the roots will induce a yellow sickly growth, which must be avoided. It sometimes happens that some plants will refuse to start at all without special treatment. After correcting any defect in the drainage place such plants in gentle bottom heat, and syringe the stems occasionally. This is the only way I know of to force stubborn plants into growth. Those starting freely will not require any heat, but merely protection from frost, with plenty of air on all favourable occasions. Green fly occasionally attacks the points of the young shoots, and can easily be got rid of by fumigating with tobacco.

There are other systems adopted by growers to produce cuttings in quantity, which I will endeavour to explain as clearly as I can.

In the spring following the plants blooming inside—say in March or April—shake the old roots partly out of the soil and plant them about 3 feet apart in an open position in the garden, previously digging the ground well; but unless the soil be of a very poor description it is not wise to add much manure, as this induces strong and consequently too sappy growth. It is much better to add some fresh soil around the roots when planting, such as refuse soil from the potting bench or the materials of spent Mushroom beds, treading the soil firmly about the plants, which induces a stocky growth. Should the weather be very dry during the summer give water freely and apply a mulching of decayed manure, which dispenses with the necessity of watering so frequently when other matters press so heavily. Do not allow many shoots to extend during the summer for flowering, but only sufficient to prove the variety is true to name—an essential point, as many growths weaken the plant somewhat and overcrowd the young shoots, thus drawing them up weakly in the autumn. Should the weather not be severe during November and December good cuttings may be had, but should these be injured by frost the trouble entailed in planting out and attention during the summer is to a great extent lost. If they once get frozen they are crippled, and do not quickly recover. They can no doubt be sheltered from light frost with straw or litter; but I do not think the advantage derived by this system is adequate to the trouble entailed, as a severe frost is always likely to occur in December, and before the growths recover from its effects the best season for striking the cuttings is gone. Some varieties, notably of the Christine family, do well under this treatment; but they invariably produce good cuttings freely in the ordinary way when blooming inside.

A much better method of producing sturdy cuttings of varieties that are shy in throwing up suckers, or in the case of new varieties of which the stock is limited, is to strike the side shoots that are often produced in excess during May and June when the plants are grown for large blooms. Instead of throwing these growths or suckers away, as is usually done, insert them singly in small pots in sandy soil, plunge in a gentle bottom heat, keeping them close and shaded till rooted, then remove to a cool frame. As soon as the pots are filled with roots shift the plants into 4 or 5-inch pots, using moderately rich soil, pressing it down hard, and short stocky growths so desirable for good cuttings will be produced. Stand the plants out of doors in an open position, allowing one stem only to extend. This will attain a height of 2 to 4 feet according to the variety, and produce one bloom. Such plants are useful for decoration on the side stages of the conservatory or elsewhere. Cut them down rather early after blooming, and they will be certain to produce good suckers. I find that they always throw up more freely when grown in small pots in the manner described than when grown in the orthodox way for affording exhibition blooms, as no doubt the constant removal of the suckers during the summer treatment weakens the plants for the after-growth of cuttings. This does not occur when grown as above indicated. As the primary object is not the production of large flowers, but sturdy shoots for propagation, this is a system which I can strongly recommend as being certain to insure success.

Another system, sometimes practised by nurserymen who require cuttings in large numbers, is the following:—After cutting down the stems the roots are partly shaken out of the soil and planted thickly together in heated pits, where they can have a little bottom as well as top heat, keeping the plants close to the glass. In this manner space is economised by the removal of the large pots from the houses, but in private gardens heated pits are seldom so numerous that they can be devoted to this purpose. Gardeners, as a rule, have to adapt themselves to more economic principles, and cuttings forced in heat are not so good as those grown naturally in cool houses from the first.—E. MOLYNEUX, *Swanmore Park, Bishop's Waltham*.

(To be continued.)

CULTURE OF LISIANTHUS RUSSELLIANUS.

A CORRESPONDENT—"C. R., Ipswich"—desires information respecting the culture of this handsome plant, and as it is undeservedly neglected now we give an illustration of a specimen grown some years ago by a skillful cultivator. The cultural particulars are condensed from those which appeared in this Journal with the cut.

This beautiful and much-esteemed plant was introduced into this country in 1835 from Mexico. Being found to be capable of producing ripe seed in abundance, a large stock of plants was soon diffused among our best cultivators, who hailed it with delight. Nevertheless, strange to say, its successful cultivation, except in a few instances, still remains a desideratum—a fact amply proved by the paucity of really well-cultivated plants produced at our great metropolitan exhibitions.

Having been somewhat more successful than some of my neighbours in growing and flowering this plant, truly magnificent when well managed, I will give my plan, which is as follows:—The seed is sown early in spring, first filling a 6-inch pot half full of potsherds, over which is placed 1 inch of sphagnum moss, then filling the pot within 1 inch of the top with rich light sandy soil. When all is pressed down equal and firm, and a smooth surface made with the bottom of a small pot, sow the seed and cover it very slightly with dry white sand. Cover the pots with bell-glasses, and place them on a shelf in a shady part of an early vinery, keeping the surface constantly moist by pouring water on the outside of the glasses. As soon as the plants appear air is admitted, and increased as they advance in growth. When sufficiently strong they are pricked out into small pots, having the same drainage, moss, and mixture as the seed-pots, and are again shaded with hand or bell-glasses until the plants become established. In three weeks or a month they require to be placed singly into small pots, and encouraging their growth as much as possible by placing them in a shady part of either a vinery or Melon pit, whichever is kept at the highest temperature, with a humid atmosphere. As soon as they begin to fill their pots with roots give them once a week a little clarified liquid manure.

About the middle of August they are placed in larger pots to suit the



Fig. 81.—*Lisianthus Russellianus*.

size of the plants, in the same temperature as before, till their pots are filled with roots. After this prepare them for winter by giving them less moisture, more air, and a cooler temperature; and finally place them on a shelf near the glass, in the coolest part of the stove, and wintered rather dry. Early in February increase the heat and moisture; and as soon as they begin to grow freely repot them, which is generally about the second week in March. They receive another shift in April, and those that are intended for large specimens a third in May (using 18-inch or 20-inch pots), and a mixture consisting of equal quantities of good strong loam, peat, or bog mould, burnt clay, leaf mould, and cow manure, with a little white sand. These materials are well mixed together, and if dry are moistened to prevent their running too close in the pots. In potting a large quantity of drainage is used, and plenty of rubble stones, small potsherds, and coarse river sand amongst the mixture. Make the mixture just firm, and be very careful to leave it quite porous. Give very little water till the roots reach the sides of the pots: it is increased as the plants and the season advance, giving heat and moisture in proportion. Too much stress cannot be put upon making a proper mechanical arrangement of rich, porous, and well-drained soils, which are essential for the healthy development of plants of the nature of the *Lisianthus*.

When the young shoots have become sufficiently advanced stop them immediately above the second joint; each shoot will then produce four. They require stopping about three times. The last stopping for plants

required to bloom early should take place in the first week in June, and for plants required to bloom later, in the first week in July. As they advance in growth the branches will require to be tied out with sticks, to make round and well-formed plants.

When the plants are growing freely they are sometimes attacked with a disease at the base, which is produced by the moist and confined atmosphere that is required for their free growth. To prevent this allow the surface to become quite dry once a week, during which the plants are supplied with moisture from feeders or pans, in which the pots are placed for a few hours, being careful not to allow any stagnant water to remain about them. As soon as the blooms begin to expand keep a drier atmosphere, and expose them to more air and light, which much improves their colour.

PRUNING DENDROBES.

I WAS glad to see Mr. Prinsep bring the above matter forward once more, as it is interesting to all Orchid growers. No doubt many have tried the experiment during the past season, and I hope we shall hear the results of the practice from many different growers. Last spring I pruned several in a half-hearted kind of way—that is to say, I did not cut all growths away that had flowered, but left those of the previous year. The result with me, I am sorry to say, is far from satisfactory, for in nearly every case the growths of the past season are both shorter and weaker than the preceding ones, while on the other hand the unpruned plants have increased in both respects in a satisfactory manner; for instance, *D. Wardianum* has increased in some cases from 3½ feet to 4½ feet in length, *D. fimbriatum ocnatum* from 29 inches to 57 inches, *D. nobile* 19 inches to 29 inches, *D. Dalhousianum* from 28 inches to 43 inches, *D. fimbriatum undulatum* 17 inches to 28; in fact, scarcely any unpruned plants have failed to improve, while the pruned ones in only one or two cases have maintained their ground, but, speaking generally, have decidedly deteriorated. Perhaps the most striking instance was that of a pan of *D. chrysanthum*, which usually made growths about 4 feet long. As it was growing very strongly, I cut the whole of the old growths away after the young ones had got a start of 10 inches or 12 inches. After pruning they did not make much progress, and finally stopped at about 18 inches or 20 inches in length and flowered very poorly, but I am glad to say it is now looking as if it would make up for lost time. I am not disposed to regard my little experiments as conclusive of the failure of a system which Mr. Prinsep, and, I believe some others, can practise with success; still, any further experiments, as far as I am concerned, will be on a still more limited scale than in the past.

I find *D. nobile* usually flowers on the earliest growths of the preceding year, while later growths stop until the second year. Some have bloomed from six nodes, and are now showing flower at several more, both above and below where they flowered last spring. I believe Mr. Prinsep grows his Dendrobates at a higher temperature than is usually considered necessary for them. I think he mentioned in a former communication 100° to 110°. I must say I do not like working at such high temperatures. I find 90° quite warm enough, allowing 5° or 6° extra on special occasions; and if the loss of old pseudo-bulbs must be made up by employing so much more heat I shall prefer retaining the growths, but if both are important to success, why not employ both at once?—J. J., Lancashire.

TRAINED SPECIMEN CHRYSANTHEMUMS.

ON page 491 Mr. W. Monk alludes to what I have written concerning these, and is pleased to find that "*D., Deal*," has spoken in favour of trained plants, adding, that in his opinion, "a show without good specimen plants is not worth visiting." For my part, I should not grieve if specimen Chrysanthemums, such as I imagine Mr. Monk admires, were altogether excluded from shows, and I believe many more share in this opinion. I have before stated that those trained specimens which win premier honours at good shows, represent a great amount of skill and attention, and fully deserve all that is awarded to them; but the question is, Are these specimens profitable? or, in other words, Is the amount of pleasure they give, especially to their owners, at all proportionate to the labour expended on them? What do they look like when "at home," and do they not require much more house room than they deserve? Properly set up at a show they may be effective, but who that saw them daily would not soon tire of their formality, and much prefer those ordinarily staked conservatory plants that may be made to perfect equally as fine blooms, many of which may be cut without any disfigurement.

My principal objection to providing so many classes for trained plants is the certainty of this, inducing many to attempt their culture who have neither the skill nor the convenience for bringing them to perfection, and what is more unsightly than these miserable failures with their forests of stakes, coarse unpainted ones, too, not unfrequently shabby foliage and inferior blooms? Pompons, even, we often see trained, and pretty objects they sometimes are. In the case of Japanese varieties there is now less cause for adverse criticism, as many of them lend themselves to the work, and some of the least objectionable trained specimens I have seen lately were Bouquet Fair, Madame Bertie Rendatler, Source d'Or, James Salter, Lady Selborne, Baron de Prailley, and L'Ile des Plaisirs. In this case there was abundance of bloom with few or no stakes visible, a very different state of affairs prevailing in the first-prize plants of incurved varieties staged by the same exhibitor.

We must have plants at Chrysanthemum shows, and in considerable numbers too, when a large hall has to be made attractive, but if good prizes for more naturally grown plants of each section of Chrysanthemums, as well as at least two classes for groups, were offered, the great improvement that would rapidly be accomplished would soon more than compensate for the loss of the trained specimens, and this would very probably increase the number of competitors, owing to owners of plants sharing in the approval of this method of exhibiting. I have seen nothing this season to cause me to modify my opinions as noted by Mr. Monk. At the same time public caterers must endeavour to please all classes of visitors, and for this reason it may be necessary to still offer prizes for trained plants, but let these classes be fewer in number, in order that funds may be available for those more naturally grown. So far is this mania for trained plants in the ascendant, that even the classes provided for conservatory plants are invaded by them, and at Bath, owing to there being no chance to prevent it, they were awarded all the prizes in that class. It is this laxity in the framing of schedules that often leads to misunderstandings and unpleasantness. I am of opinion that groups of plants should be more encouraged, and shall not easily forget the results attending this phase of exhibiting at Kingston-on-Thames and elsewhere during the season of 1884. Every society ought to provide two classes for these, one for good-sized, and another for smaller groups. Those of a semi-circular form, with a wall for a background, should, I think, be preferred, the largest being say 10 feet by 5 feet, and the smallest 6 feet by 5 feet, but perhaps these dimensions may be improved upon. It is somewhat surprising that such a very old-established Chrysanthemum Society as that of Liverpool should still be behind the times as far as groups are concerned, and another equally as well-known old society, the Bristol or Clifton, has only quite recently offered prizes for them.—W. IGGULDEN.

REVIEW OF BOOK.

The Orchid Grower's Manual.—Sixth edition. By B. S. WILLIAMS, F.L.S. London: Victoria and Paradise Nurseries, Upper Holloway.

THIRTY-THREE years ago Mr. B. S. Williams, who had then gained considerable fame as an experienced Orchid cultivator, issued the first edition of his "*Orchid Grower's Manual*." The plain, practical, and reliable character of the instructions it contained led to a most favourable reception, though orchidists were then not nearly so numerous as now. In a comparatively short time a second edition was called for and issued; third, fourth, and fifth editions following in due course, the last being published in 1877, greatly enlarged. The past eight years have, however, seen a surprising extension of Orchid culture, large numbers of plants have been imported, many new species and varieties added to the lists, and handsome garden hybrids have been raised in this country. The beauty and interest of Orchids have been more generally recognised, and for usefulness may have obtained a place amongst the best plants grown for flower-yielding or floral decoration. The attention which Mr. C. Darwin drew to these plants a few years ago awakened the interest of the scientific world generally, and served also to render them the fashion of the age. In most gardens where the owners take a genuine interest in plants the Orchids now constitute an important part of the collection. Many gentlemen who take a special interest in them have expended fortunes in acquiring the choicest and most beautiful members of the family, while commercially the amount of money invested in them is enormous.

Taking these facts into consideration, Mr. B. S. Williams, in preparing a sixth edition of his Manual, acted wisely in determining to enlarge and improve it, so as to render it a standard work suitable to the demand for information now existing and the extent of the subject. That these objects have been satisfactorily accomplished all must admit who obtain the new edition just issued, for, while still preserving its practical character, it has also been endeavoured to render it of scientific value as a work of reference. A brief comparison of the fifth edition with the present one will show how this has been accomplished. The previous edition contained 326 pages, the present one has 659, the number of species, varieties, and hybrids described having been increased to 1470, besides giving 478 synonyms. The introduction, which now occupies ninety pages as compared with sixty in the fifth edition, has additional or much-extended chapters on "*The Season for Collecting Orchids*," "*Risks of Collecting*," "*Raising Orchids from Seeds*," "*Orchids for Room Decoration*," "*Shading Orchid Houses*," "*Growing Specimen Orchids for Exhibition*," "*Insects and Diseases*," besides the other chapters on general cultural matters comprised in the older edition, and from which any novice can gain sufficient knowledge to enable him to master the chief requirements of Orchids.

Turning to the "*Select Orchids*," we find the improvements have been numerous. Under each genus is given the essential culture, and, where some of the species need particular treatment this is described under their names. The botanical authorities are given for the names of both genera and species, while under the latter are given references to the most readily accessible works containing coloured plates. In this portion of the work Mr. T. Moore of Chelsea has rendered the author valuable assistance, which is duly acknowledged. As examples of the increase in the number of forms described we give the following genera as they occur in the two last editions. The *Aerides* have been advanced from 38 to 57; the *Angræcums* from 12 to 26; the *Anoctochilus* are only 22 as compared with 26, owing to transference of *A. Dayi* and *A. Lowi* to *Dossinia marmorata*, *A. Petola* and *A. Veitchi* to *Macodes Petola*, *A. quercicola* to *Physurus*, and other changes. *Calanthes* have increased from 14 to 25, *Cattleyas* from 100 to 161, *C. Mossiae* varieties being 35 against 28 in 1877, and *C. Trianae* varieties 18 against 7. *Celogynes* now

number 27, an increase of 12. Of *Cypripediums* 88 are described, 31 of these being hybrids, while in 1877 only 46 were enumerated. *Dendrobiums* have advanced from 98 to 132, *Epidendrums* from 28 to 39, *Lælias* from 38 to 73, *Masdevallias* from 15 to 51, *Ollontoglossums* from 69 to 145, *Oncidiums* from 78 to 95, *Phalenopsis* from 15 to 37, and *Vandas* from 20 to 38.

The illustrations have been proportionately increased—namely, from fifty-seven to 147, many of these having previously appeared in the pages of this Journal and those of our contemporaries, but Mr. Williams has added several small illustrations showing the habit of the plants in the principal genera, which, though necessarily much reduced, are clearly executed and very useful. The work is more closely printed than the former edition, but a good bold type has been employed, and the names of species are printed in small capital sideheads instead of italics as before. It has been carefully revised, a list of corrigenda at the end rectifying the majority of the slight literal errors that were passed. In recommending this work to the attention of our readers we need only add that it is well and appropriately bound in green cloth embossed with gold, forming a handsome and substantial volume, of which Mr. Williams has every reason to be proud and which every Orchid grower should possess.

ALPINE PLANTS AND THEIR CULTIVATION.

(Continued from page 491.)

THE first matter to be decided is the position of the rockery. This should be fully exposed, and not half hidden or shaded by trees above, or sufficiently near for the roots to enter the mass of soil, and so reduce it to poverty. The main bulk of the soil of which the rockery consists should be good loam, kept open by abundance of sharp sandy grit and stones. In hilly districts rockeries will not only be more easily constructed, but numerous examples will be afforded in the neighbourhood. For the sake of economy the stone of the district should be used, unless it be of a nature likely soon to crumble and decay, and where this is the case rockeries are better not attempted at all. There are many rock formations, however, which answer very well, and indeed almost any kind will suit. As to its general aspect and bearing, this remains a question of taste with the operator, but in all cases he should as closely imitate Nature as possible. Not unfrequently are huge and picturesque stones packed and cemented together in such a way as not only to be utterly out of character with the natural rock, but ruinous to the plants when placed upon them. It is not a question of how much money has been expended in making it, and which in many cases is so much squandered, but rather a question of providing suitable compartments for the plants.

There are many alpenes, and these the most brilliant and rare, that delight in being placed in sunny fissures of rock, at the same time able to send their tiny fibres deep into the earth. Herein is the secret of successful alpine culture on artificial rockeries. Too often are the so-called pockets for the reception of alpine plants shallow in the extreme, containing only a small portion of soil, and quite detached from the main body of soil, with the result that they are always satisfactory, and the ultimatum is that they dwindle and die, simply because that instead of catering for their requirements, all chance of their obtaining the necessary food has been cut off. With alpine plants in their native haunts it is a common occurrence for them to send their tiny fibres from 2 to 4 feet deep in search of the nourishment they require; thus it is where plants, even the minutest types of vegetation, exist through long-continued drought, even though they are situated on some projecting ledge which guarantees no supply of moisture for them. Melting snow and rains find their way into these narrow fissures among the fibres, and hence the supply for their needs. So in the construction of the artificial rock, let it be borne in mind that one of the greatest essentials should be providing a sufficient depth of suitable soil calculated to afford sufficient moisture for the plants even in the driest weather, and do not in any case divide your compartments, rather allow a cavity of fissure to remain open at the back, charged with soil, and in direct communication with the body below.

Without further dwelling on what might be done with rockeries on a large scale, and which, when tastefully designed and arranged, are very desirable in garden scenery, I will pass on to briefly note how the majority of these rare plants may be successfully grown in raised borders or rockery beds. Two years ago I assisted in the formation of one of these rockery borders, and having a number of plants, such as *Erinus*, *Globularias*, *Alpine Pinks*, *Edelweiss*, various species of *Primula*, *Gentiana bavarica*, that gem of *Gentians*, and many more, it was decided that a slightly raised rockery border should be made for their reception. This is the most simple means which can be employed, and at the command of all, and such as will insure success at a minimum cost. Presuming the border to be already

full of good soil, the only thing will be to get a number of stones, prior to which a few barrows or cartloads—depending on the size of the border—of rubble, small stones, broken bricks, or sharp grit, should be spread over the surface of the soil, and there worked into it. If inclined to be of a stiff retentive nature old mortar rubbish or ballast, which has been burnt, will make suitable material for keeping it open. The next thing will be to bury, or half bury, the stones, which may be done in several ways, and in some cases so that the plants may be placed against their sides. Such a border as this might be so constructed as to grow almost any alpine plant which might be placed upon it, and yet need not be more than 2 feet or 3 feet above the ordinary level. Place the stones in such a way that they will have the appearance of cropping out of the earth, and avoiding all formality of appearance. Even in dry seasons the plants will be greatly benefited by the use of the stones, which will retain a certain amount of uniformity of moisture about the roots. Some of the woolly-tufted members of *Androsace*, and other very choice plants, may for their greater preservation have some small stones placed beneath and about them to keep them from damping off at the "collar" in wet seasons. This, and such like items, will materially assist in keeping many plants through our variable winters.

This brief sketch would not be complete if I did not refer to the conditions under which alpine plants pass the winter in these snow-clad mountain regions. The reason of their refusing to pass through our ever-changing winters is this: In their native home from the end of October to the beginning or end of May, dependent on the altitude, they are continually covered with snow, and never feel the icy breeze which blows continuously across the mountains. Deeply embedded in the snow they remain dry, snug and warm throughout the entire winter, through which they pass without ever experiencing any great change in the temperature, save that of 1° or 2°, while above the snow the cold is variable and piercing in the extreme. We see that the hardships which they have seemingly to endure are as naught compared with the variable climate of England. Again, what protection can we afford these plants which can in any way equal that with which Nature covers them at home? or what can provide for them a more efficient watering than the melting snows in spring, which start them simultaneously into active vigorous life? Conditions such as these, that we cannot imitate in English gardens, conditions which keep them in check till all fear of being arrested by spring frosts and winds is past, so that they spring from their resting place and start into growth, flower, and perfect seeds in a comparatively short time; after which comes a repetition of the former winter, and the plants are again at rest. But let us notice that from the time that the plants start into growth, labouring under a bright sunny sky, with copious waterings afforded them from melting snows above, all around seems to encourage a speedy growth, and this, coupled with the perfect drainage arranged by Nature's hand, completes their success. Is it, then, to be wondered that the lover of alpenes in England cannot boast of complete success with such choice plants as the *Fairy Forget-me-not*, *Eritrichium nanum*, many of the *Gentians*, *Androsaces*, and the like, which baffle not a few of us in our attempts to grow them? I answer No; rather is it a source of greater wonder that we can collect such a vast number of precious gems from alpine floras, say from an area of 100 square miles, and bring them into a garden space here in the lowlands of the same number of yards, and induce the majority of them to endure the vicissitudes of English winters. Frost many will endure with impunity, but what they cannot endure is a sharp biting frost followed by a rapid thaw, and may be rain and frost again, all in twenty-four hours. Thus it was that for some of them I adopted a frame some years ago with bricks left out here and there, and the lights continually tilted above them, which while effectually keeping off the rains, admitted abundance of air. In this way many of the very choicest alpenes may be wintered with success. Frost and cold they will endure, but not wet.—E. JENKINS.



HARDY FRUIT GARDEN.

OLD TREES.—Attention may now be given to old fruit trees in view of seeing what can be done to improve them. We believe the term

"improve" is that which reformers and, we may add, enthusiastic young fruit-growers are wont to use in their discussions of the treatment of old fruit trees. At various periods of our life we have had all sorts of such trees under our care, and they have afforded us many a useful lesson. Among the best and most prolific of such trees we may mention a Green Gage Plum and a Peach tree, both with old hollow stems, and both bearing really fine fruit year after year. The most prolific Apricot tree we ever had was an old wide-spreading tree trained against an east wall, the bark of its stem and main branches being rugged and hard. We have in our garden now a huge standard Benrre Capiaumont Pear about 50 feet high, with a large spreading head, the stem and main branches being clothed with a thick rampant growth of Ivy; yet this tree had this year a heavy crop of many bushels of excellent fruit. It has been suggested to us that the Ivy ought to be taken off the stem, but we decidedly object to that, knowing as we do that it would do the old tree serious injury. To those who wish to improve old trees we may say, then, be cautious. If the tree is barren, see if the main roots have run deep down into a cold wet subsoil; if so, sever them from the tree; if not, leave them alone; but in either case a top-dressing of rich soil with plenty of lime in it will do good. If the branches are cumbered they may be shortened to induce fresh healthy growth, or shortened and grafted next March. We have so grafted old Pear trees with excellent results, and commend the plan. If, however, old fruit trees continue bearing fruit in every favourable season, leave stem, spur, and branch altogether alone; never mind a little crowded or misshapen growth so long as you get plenty of useful fruits. Old Peach and Nectarine trees, on the contrary, may derive much good from severe pruning if the branches are cankered and are dying. In such cases it answers best to cut down the head to within a foot or two of the stem, to shorten the roots, and to renovate the soil with sweet, fresh, rich loam. The usual result of such treatment is a sturdy robust branch growth, so vigorous as to rival that of younger trees, with which it is equally fruitful.

FRUIT FORCING.

CHERRY HOUSE.—The trees having been attended to in dressing as advised in a former calendar, the house should now be closed. The treatment should be such as will not excite growth prematurely, therefore only a slow progression should be allowed; a temperature of 40° to 45° at night and 50° in the day will need to be maintained by artificial means. When the external conditions, however, are favourable a few degrees higher may safely be permitted, but anything calculated to bring on the trees too quickly should be carefully guarded against, as undue excitement at the commencement is likely to prove injurious to the crop. Ventilation should be given at 50°, just a little at the apex to insure a change of atmosphere, ventilating freely at 55°, allowing an advance to 65° or 70° with sun, and closing at 55°. The atmospheric condition should be moderately moist, which will be attained by syringing occasionally, but an over-moist atmosphere should be avoided, and in all cases allow the trees to become dry before night. It is highly important that the borders be thoroughly moist, as when the trees are excited into growth fresh roots will speedily be formed, and to encourage them moisture is absolutely essential.

VINES.—*Late Grapes.*—Examine these at least twice a week for decayed berries, and keep the house as dry and cool as may be consistent with the safety and preservation of the fruit. When thoroughly ripe and the Vines are leafless a mean temperature of 50° is suitable until the time arrives for bottling. Anything much below this is liable to foster mould and decay; and fire heat to maintain a light temperature, especially at night, will undoubtedly cause the berries to shrivel immediately after the fall of the foliage. No further time should be lost in getting the Grape room ready for the reception of the stock of keeping Grapes, which should be cleared off the Vines not later than the first week in January, and a week's steady firing and ventilation is necessary to draw out damp and expel it. The certainty with which Grapes keep bottled for four or five months in better condition and at less expense has given confidence in a system which gives relief to the Vines, insuring that perfect rest so essential to their after well-doing. Gros Colman requires the longest time of any on the Vines, as it lays on colour after the foliage is ripe, and owing to the soft fleshy nature of the footstalks, which are liable to decay, it is best kept in the driest and warmest part of the Grape room, by which means it parts with its earthy flavour and improves in quality. To do it well it requires to be started at the beginning of February—not later—as it needs a long season of growth, and the fruit ought to be finished by the end of September.

Midseason Houses.—Pruning the Vines in these should be pushed forward, as the Vines break and show better when they have a good season of rest. The Vines should be dressed, and the house thoroughly cleansed ready for a fresh start when the proper time arrives. The loose inert surface soil also should be removed down to the roots, and a layer given 3 inches thick of fresh turfy loam, to which has been added a sprinkling of bonemeal and charred refuse. The houses should be kept cool and dry until the time arrives for closing. If they must be used for plants keep them cool, or 40° to 45° by artificial means, and as dry as practicable.

Young Pot Vines.—Those intended to be grown into fruiting canes may be cut down to a couple of eyes or close to the pots, and dressed with styptic, and placed in a succession house, which will be started early in January. Single eyes may also be placed in small pots, or in pieces of turf, and kept cool for two or three weeks before they are placed in bottom heat.

Making Vine Borders.—Where young Vines have to be planted in spring, advantage should be taken of suitable weather for mixing the

compost, and the borders made up ready for their reception. Drainage being the first essential, this part of the work must be well done. Three-inch tiles should be placed with proper fall and outlet to carry off the water passing the drainage, and if the bottom of the border be wet or the strata unfavourable it ought to be concreted, than which nothing answers better than two parts gravel and one part lime formed into a mortar-like mass. The gravel should be fine as for garden paths, or passing through an inch-mesh sieve, and should be 4 to 6 inches thick. The drainage should be clean, and not less than 9 inches thick, better a foot, coarsest at bottom and finest at the top, covering it with a layer of turves grass side downwards. Thirty inches depth of border is sufficient—i.e., of soil, which may consist of the top spit of a pasture where the soil is a medium-textured loam, light in preference to heavy, and chopped up roughly. To this add a tenth of old mortar rubbish, a twentieth of charcoal, and a fortieth part of half-inch or crushed bones, the whole thoroughly incorporated. It is advisable to keep the border well above the surrounding ground level, especially in low damp situations, and give the surface a good slope to the front, so that when covered rain and snow is thrown off. A 6-feet width will be sufficient to start with, and should be inside, the roots being confined to it by closing the apertures in the front wall, as it is advisable to have the inside border well filled with roots before admitting them to the outside one.

STRAWBERRIES IN POTS.—Forcing operations have been delayed by the severe weather, and it is useless striving to push vegetation under conditions that can only end in failure. Therefore, proceed cautiously (and there is not greater need for it than in Strawberry forcing) in frosty dull weather, allowing the temperature inside to fall corresponding to that of the outside, seeking only progress when there is sunshine or at least gleams of it, when the heat may be turned on early in the day so as to rise and maintain a temperature of 50° to 55° through the day, and the walls and paths may be damped, but only when there is a prospect of sun, so that the moisture by its action and that of a little air will have dried up before night, and the temperature should fall to its minimum of 40° to 45°. This should be continued under adverse circumstances until the new year, after which it is surprising how the plants progress with comparatively little aid. The system of starting Strawberries on beds of leaves and dung in a fermenting state is a bad practice, as it starts the roots into activity for no purpose, Nature itself being the best prompter in this respect, and unless the plants have already a sufficient quantity of roots they are unfit for forcing. It is a good plan to start an equal quantity of two kinds, so that one variety will come in after the other in successional order. Be careful to allow the plants sufficient water at the roots, examining the plants daily.

PLANT HOUSES.

Fuchsias.—A few of the plants that rested early in the season may now be started into growth for early flowering. If the plants are well formed and as large as required when grown, they should be pruned closely hack, leaving only one eye or two at the most of the last season's wood. If larger plants are required the ripened wood need not be pruned so closely. The soil should be soaked with tepid water, and the plants syringed twice daily until they break into growth. If this is done the one watering will prove sufficient until they have started and are ready for potting. A good place to start these plants is an early vinery or Peach house. The remaining plants at rest in sheds and other similar positions should be protected from frost by covering them with dry straw, fern, or other material. Young autumn-struck plants now in small pots must be kept moving slowly, which they will do on a shelf close to the glass in a temperature of 45° to 50°. If this is done they will be ready early in the new year for placing into 5-inch pots.

Zonal Pelargoniums.—Plants that have become tall and ceased to flower may be placed on a shelf and kept dry at their roots for a few weeks, when they may safely be pruned and started again into growth. Others of a hushy nature, that may have discontinued flowering through use in the conservatory where the temperature is rather too low to keep them growing and flowering, should be given a light place close to the glass, and if carefully watered they will flower again freely in early spring, proving very useful for various purposes of decoration. These should occupy a moderately dry airy structure, where the night temperature can be maintained at about 45°. In order to keep conservatories gay with these plants the whole of the winter months, it is necessary to devote a house to these plants, where a moderately dry atmosphere can be maintained with a night temperature of 55°. As plants are removed from this house to the conservatory it should be refilled with others that have been reserved for the purpose in cool houses. If these plants have been carefully watered since they were housed they will be in good condition and quickly unfold their flowers in the temperature named. After these are introduced they may be watered with weak stimulants, or given an application of artificial manure on the surface of the soil. Plants to follow these as well as young stock for spring flowering should be watered with great care and kept in the temperature indicated above for those intended for flowering at that period. All plants in flower must be kept in a moderately dry atmosphere, or the flowers are liable to damp.

Heliotropes.—These plants will continue flowering more or less the whole winter if they can be given a temperature of about 50°, with a circulation of air daily whenever the weather will allow of this being done. Young stock in small pots for flowering early in the season will remain in good condition in a temperature of 40° to 45°, according to the temperature. The points of the shoots may be pinched if the plants are not sufficiently bushy, and when they have started again into growth

they will be ready for 5-inch pots and a little higher temperature if they are wanted in flower as early as possible.

Double Petunias.—These are very useful for conservatory decoration as early as they can be brought into flower, and the young plants rooted in August should now be bushy little plants in small pots. It is necessary to sort the plants prepared for this purpose, for all will not have made the same progress. The bushiest plants, if in any way backward in growth, should be placed on a shelf close to the glass, where the night temperature will not fall below 45°. They will advance slowly in this temperature, and the growth made will be sturdy and compact; they must not be at this period of the year unduly excited, or they will make weak puny growth and be ruined. The remainder can be pinched if they show signs of becoming too tall, and allow them to grow for the present under cool conditions. If these plants are sufficiently advanced until they can be placed into larger pots keep them moving and as cool as possible consistent with attaining this end.

Callas.—If wanted in flower as early as possible these may be introduced into a temperature of 55° to 60°, and they will not be long before they unfold their pure white spathes. Where these plants are well grown many spathes will be already well advanced under the cool treatment the plants are now receiving. These are highly prized for church and other forms of decoration in a cut state at Christmas. For decoration in pots for the conservatory they are really not needed until the following month if due provision is made for a late batch of *Chrysanthemums*. *Princess of Teck* is probably the best variety for this purpose in cultivation, for we shall have it this year until February has well advanced.

Solanums.—Those past their best by being employed in rooms and other not very favourable positions should now be pruned and placed in a cool house to commence growth, so that they will have a good chance to set and ripen their berries for early use another autumn. If necessary to increase the stock of these plants place them in heat, and they will soon start into growth, producing shoots suitable for cuttings. To produce good-sized well-berried plants in one season cuttings must be rooted early and grown on quickly for a time afterwards.

THE BEE-KEEPER.

SWARMING AND NON-SWARMING.

THE wisdom of coming to an early decision as to whether increase of stocks is desirable is very evident, and it is for this reason that the subject seems to be one suitable for the present time, when each one has in the dark evenings time to spare to make use of in any way which is likely to be useful. To the bee-keeper it has always been a source of constant doubt whether in the following year the apiary shall be managed on the one or the other of these very opposite systems, the principles of which are so diametrically opposed. The one allows some scope to the natural instinct of the bee, the other thwarting instinct and substituting in its place an artificial desire to gather more honey than would, if the bees were in a natural state, be gathered without throwing off a swarm, and so giving scope to the laying powers of the queen, and also providing for the perpetuation of the species. Mr. Pettigrew gave several reasons why the swarming system was the preferable mode of management, and these are so often quoted that I cannot do better than state them very briefly:—

1, The stimulus of an empty hive makes the bees work harder.

2, The combs of swarms are sweet and free from a superabundance of bee bread.

3, By swarming the number of hives is annually doubled and often trebled.

4, By the adoption of the swarming method the stocks' hives are changed every year.

5, On the non-swarming mode of management the queens grow old and die.

For these five reasons, after adding that in the swarming system there is a certainty of success, he maintains that moderate increase is desirable. I am not able altogether to agree with this great bee-master, for although great results may be obtained from either mode of management, it seems to me that if comb honey in supers or sections is desired, the absolute prevention of increase is the surest way to gain a large quantity of the best quality with the least trouble.

It may not be out of place to consider the five reasons which seemed to Mr. Pettigrew to prove the soundness of his conclusions, and so I will very briefly do so. There can be no doubt that the stimulus of an empty hive makes bees work harder than they do in the old hives, unless sufficient super room is given to the old stock at the proper time, when it is quite an open question whether a stock which has thrown a swarm can—both old stock and swarm—together produce an amount of super honey as great as a stock which, supered with judgment, is continually working freely all through the season.

With the second reason—namely, that the combs of swarms are sweet, &c.—I have no concern, for it seems to be the wiser plan at the end of every season to break up all the stocks and form sugar-fed ones for another year. Then we come to an argument apparently of great force, in that by the swarming system the number of hives is doubled and often trebled. Now, the first thought that occurs to me is, Is there a market for stocks? Can the surplus be disposed of? If not there is no reason in producing an article which is unmarketable, unless, indeed, we desire to increase our stocks, which must generally be done at the expense of comb honey. If run honey is the object, then the question bears a different aspect, and to this reference shall be made again. Another saving is effected by this method, and that is that there is no necessity to buy bees in autumn to unite to the ones with which it is proposed to form the sugar-stock, or with which to strengthen the stocks selected to stand the winter.

By the adoption of the above method the stocks are changed each year, but here again this is no argument in the mind of the man who uses sugar-fed stocks, and never keeps stocks formed from swarms. And lastly, as to the queens growing old and dying, this is a point which needs attention, but if the bee-master does as I am convinced it is wise to do—that is, strengthen each stock in autumn by a numerous addition of bees—he can very easily, if necessary, substitute a young fertile queen in the stead of the one grown old and feeble. The conclusion, then, arrived at is that for comb honey swarming must not be allowed; that the best plan to make most profit is to prevent swarming by judicious supering; each year to break up all stocks and form sugar-fed ones for the following season. The honey taken from the stocks is generally a good deal more than sufficient to pay for the sugar and the extra bees required, and the remainder is left, together with the wax, to pay for the time and labour spent in driving, feeding, &c. A stock of new sweet comb, with good patches of brood, sufficient pollen and sealed store of the healthiest description, are insured, and the seed for a bounteous harvest in the coming season is sown. Disease, if any existed, is nipped in the bud. Moths and insects are all extirpated with the least possible trouble and no expense. Why, then, shall we trouble about having swarms to provide good sweet comb for the stocks another year? Now, for the man who wants run honey, his best plan is to allow a moderate increase, a swarm and a cast, thus trebling his stocks. The swarming will gain great weight; he will have three queens laying instead of one; he will have three hives to break up at the end of the year, three hives of wax, three of honey, but the quality of the latter will be a little inferior to that run from supers which have never contained brood or pollen.

There is only one more point to which I need allude, and that is the uncertainty with which in some apiaries the attempt to prevent swarming is successful. If to prevent increase it is necessary to excise queen cells, to cut out drone comb, to examine the hives at frequent intervals, the expense and labour attendant upon such a course would deter me from endeavouring to persuade others to follow it. If by the simple means of judicious supering swarming cannot be prevented, the advocates of the modern increase method must be considered to have gained their point. Anything and everything which tends in the slightest degree to increase

the cost of production must, in the face of the continued low and still falling prices of honey, be excluded from the apiary, unless a greater amount of honey can be gained from its adoption to compensate for the increased outlay. It is impossible to impress upon the minds of bee-keepers too clearly the absolute necessity of rigid economy in every department of the apiary. That system which at least expense produces the greatest nett profit is the one which must be adopted to the exclusion of all others. If honey in one apiary can be produced at 1d. a pound less than in another, such reduced expenditure in production will enable the bee-keeper to meet the lower prices, and to dispose of his honey so as to give a reasonable profit. A penny a pound saved in production gives 1d. a pound more profit. In my opinion honey produced from stocks managed in simple hives on the non-swarmer system will produce most cheaply, and will in the worst of years give some little super honey sufficient, if not to give an actual profit, at any rate to pay expenses; while in a good year a hive ready for supering at the end of April kept continuously at work until the honey season is over, without the hindrance of swarming, will produce a vastly great amount of high quality honey at less expense than a hive managed on the increase system will produce at a greater cost both of time and labour.—FELIX.

REVERSIBLE FRAMES—PERFORATED ZINC FLOORS.

I OBSERVE that you do not approve of reversible frames, but as I would like to try these for several reasons, will you kindly advise me what you consider the best frame for that purpose, and any other hint you can give for the making a suitable hive with reversible frames, so that my joiners will understand? Would you also kindly say whether perforated zinc floors are really necessary or not? As I observe the *British Bee Journal* says they do not see any necessity for them. I am desirous of studying economy as advised by "Felix" and yourself, therefore if they can be dispensed with the hives will be cheaper.—JOHN HALL.

[The hive best suited for reversible frames (the latter being of a very simple kind, which I advised some bee-keepers to try a number of years ago, when reversible frames were spoken about) differs very little from other frame hives. If a dividing board is used it must be of the sort which parts in the middle, and described in this *Journal* for Nov. 26th. The upper edges of both the front and back of the hive should be a quarter of an inch shallower than the sides; a loose piece of wood a quarter of an inch broader than the thickness of the hive makes up the space, which may be tongued into the sides, or held by two screws let into it through two cross mortices, whereby it will slide in and out so that it will come close to the ends of the frames which have no ears. A rabbet half an inch deep by one-eighth of an inch wide, so that drop slides may rest on the ends of these, may be checked or tongued so that the slide may pass freely over them. This is all the difference required from hives having ordinary frames, excepting a slide of iron let in right in the middle of both the front and back of the hive, which must not project further than a quarter of an inch. The frame, as stated, must have no ears, the top and bottom bars are the same breadth, which is a great fault. The ends of the frame will be better if slightly combed, so as to be easier of manipulation. Right in the centre of the ends of the frames nail a little cleat of wood, $1\frac{1}{2}$ long, which keeps the frames at the proper distance, and a quarter of an inch thick, serving as rests, which the frame hangs by, and five-eighths of an inch broad. This breadth secures the frames to one level on both top and bottom whichever side is uppermost, the former being level with the edge of the hive, and the latter five-eighths from the floor. This distance will be found better than anything less, as it secures a free circulation of air, and encourages the bees to build their combs down to the bottom bar. When frames are as close as a quarter of an inch to the floor, as advised by some, with the shrinkage of the hive bees are sure to be killed when the frames are being replaced after inspection. Then there is more risk of the space being blocked up with dead bees and debris of the hive than when a good depth is allowed. When bees are flying out and in, those inside form a ladder of themselves, so as to allow the active bees a free passage. The above is a hint worth taking. The foregoing plan for reversible frames, it will be observed, cannot be easily improved upon for simplicity and cheapness, the frame being a single rectangular frame easily made by anyone. In fact, I have often thought of having my ordinary frame hives made with the rests in the middle instead of the upper side, as is the case with all frame hives. Zinc floors are absolutely necessary in hives if the health and comfort of the bees are studied. Do you not observe the answerer of the query referred to in the *British Bee Journal* acknowledges he "has no knowledge" of what many bee-keepers know to be a very great desideratum in bee hives towards successful wintering and apiculture generally? and of course, being ignorant of its benefits, does not "see the necessity of its use," and so disparages a very useful invention. But turn to page 383 of the same journal, under "Useful Hints," and read the following extract:—"After a fortnight's absence of rain, again we have a deluge. Hives are dripping—moisture inside, and alighting boards covered with dead bees

and wax chips, which have been extruded by the bees, the weather being sufficiently warm to enable them to descend from their combs and to perform their duties as scavengers. Assist the bees by removing accumulations from entrance, and permitting a free current of air to enter the hives." Had perforated zinc been employed no such disaster could have taken place so early in the year, nor would the bee-keeper have required to clear away dead bees or debris. Nothing worse can befall a hive than dampness, especially a damp floor, which chills every bee that lingers on it, and soon calls into requisition the hooked wire, which is never required in an apiary properly managed. My hives have experienced the same weather, and several weeks advanced into midwinter with weather more severe, and there are no such signs of either dead bees on the floor or dampness inside hives, nor likely to be. What would you think of me as an adviser (in the pioneer of bee-keeping) if I had to record such direful results the first month of winter? By all means use perforated zinc as floors to hives of every sort, and place no confidence in the advice of those who do not know how to manage hives so that they will be free from damp before the winter is well begun.—LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

Hooper & Co., Covent Garden, W.—*Catalogue of New and Improved Seed Potatoes.*

Alexander E. Campbell, Cove Gardens, Gourrock, N.B.—*Catalogue of Hybrid Gladioli.*

William Fell & Co.—*Catalogue of Forest Trees.*

Carter & Co., 237 and 238, High Holborn, London.—*Vade Mecum for 1886 (illustrated).*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Vine Border (*Merchant*).—If frost threatens scatter some soil or manure on the border, as the young fibres may be injured. Your letter arrived too late to be fully answered this week.

Stove Plants (*A. G. F.*).—Your letter arrived too late to be answered in our "first issue" after the receipt of your request.

Seedling Grape (*Strebler*).—Your seedling white Grape is very handsome, but we cannot quite agree with you in considering it "identical with Gros Colman, except in colour," for Gros Colman is now firm and solid, and in some cases barely ripe, while this is really past its best. It is nevertheless a very handsome Grape, and if it does prove to be a white form of Gros Colman it will be invaluable. Could you send us a bunch, or a portion of one, in February or March? or could you another year so treat the Vine as to have the fruit at that season?

Fruit at Bath and Bristol (*J. E. B.*).—We are informed the competitors in the Pear classes were not the same as at Bath. As to the relative weights of different varieties of Pears, anyone can weigh specimens who has them, and determine that point. We suspect the supplementary prize at Bath was never intended to be regarded as a reflection on the Judges. The granting of additional prizes by committees is very unusual, and the example in question ought to have no weight as a precedent. We cannot insert your letter, with two others we have received, as they would only provoke rejoinders similar in nature to some other letters we have received, and the publication of which would do no good whatever.

Nidularium Meyendorffii (*Jackson*).—The young plants you have obtained from suckers are not sufficiently advanced to colour like the old plant, but if well grown they will produce the coloured leaves before and with the flowers. There are several plants related to this one which behave in a similar manner, the brightly coloured leaves appearing only in the centre and accompanying the flowers like the bracts in many other plants. There are some species—such as the Tillandsias—which produce leaves that are permanently variegated or tessellated. The *Nidularium* requires to be grown in a good compost of loam and peat in a warm moist house, an ordinary plant stove being quite suitable. If you read down page 500 of our issue of December 3rd you will find two books mentioned such as you appear to require.

Bleaching Pampas Grass (*P., Surrey*).—We adopt no other plan than that described in answer to a correspondent a few weeks ago—namely, to

cut the plumes with a good length of stalk when quite dry, and before the plumes are quite clear of the sheaths, placing them in a greenhouse or other place where they will be dry, in a similar position as grown, or upright. In ten days to a fortnight they should have the leaves or grass removed and given a gentle shake; they will then open out, and have the beautiful feathery appearance for which they are so much admired. Ours dried in this way retain their beauty for at least twelve months, indeed we have some two years old still very attractive. When the sheaths are removed as soon as they signs of splitting, the plumes are whiter than when left to force off their covering in a natural manner.

Pruning Vines (H. S.).—Assuming your Vine has cast its leaves, it should be pruned at once; but we cannot tell you exactly how many eyes to cut back to, as you do not say whether the cane is one year old or more, nor give any indication of its thickness. If it has side growths or laterals, cut these off to the lowest good bud, which may be about half an inch from the main stem, and shorten the leader to about 4 feet if it is as thick as your second finger, but only leave half that length if not stouter than your little finger. If the cane is of this year's growth entirely it may be shortened to about half its length if strong; about a quarter, or even less, if weak. A cucumber house is not the best position for a Black Hamper Vine, as Cucumbers require more heat and moisture than is good for Vines, especially when starting into growth. You may start the Vine in February at a temperature of 50°, raising to 55° when the growths push to half an inch, and to 60° when the leaves unfold, rising gradually to 65°, then plant your Cucumbers. If you wish these early, start the Vine a month sooner. The temperatures given are night temperatures; allow a rise of 5° by day from fire heat alone; 15° to 20° by sun heat.

Market Tomatoes (Cambridge).—Since the publication of Mr. Iggulden's Treatise on the Tomato several new varieties of Tomatoes have been introduced. Of these some of the best are Hackwood Park Prolific, Dedham Favourite, and Carter's Perfection, the last named being very handsome and superior in point of quality. At the same time, it is doubtful if either of the above sorts will supersede the good old Hathaway's Excelsior for market purposes, while the Old Red, or a good strain of it, is still extensively grown for sale. We advise you to rely principally upon Hathaway's Excelsior and Hackwood Park, giving a trial to a new sort each season in order to discover, if possible, a more profitable sort. As your house is by no means well heated it is not advisable to start very early, nothing being gained, to say the least, by it. If you sow the seed during the first week in February you ought to have strong plants ready for planting by the end of March, and these you may be able to keep growing strongly, and secure crops at a time when good prices are usually realised. They may be planted 18 inches apart, in rows not less than 3 feet asunder, in this case training them up hurdles or some kind of temporary trelliswork.

Ammoniacal Liquor (Vetis).—This liquor holds in solution sulphate of ammonia and carbonate of ammonia, and is therefore an excellent manure; but it varies considerably in strength, chiefly with the kind of coal employed in the manufacture of gas. It is also richer in ammonia in winter than in summer, because the ammonia does not escape so rapidly during the former period. It may be to a great extent fixed with gypsum, a pound being stirred in each gallon of the liquor, or with sulphuric or muriatic acid. As a rule it should be mixed with five times its quantity of water, and at this strength it is good for Vines that require assistance at the roots; but not having tried it for damping vineries after the Grapes have stoned, we are not a position to state its effects. If you contemplate using it in that way we advise you to proceed with great caution, for the liquor is more or less impregnated with tar, which is injurious in plant structures, possibly because of the coal naphtha it contains. Damage has been done to plants and Vines by coating hot-water pipes with tar. You must also remember that ammonia in excess is very injurious in vineries, and stable drainings are generally quite strong enough for that purpose. As you find sulphate of ammonia more satisfactory than the gas liquor, why not continue using it? It is one of the best of fertilisers, but even an excess of this is injurious. It is freed from impurities in the process of manufacture.

Euphorbia splendens (A. Paine).—We can understand the flowers of this plant being useless when they reach their destination if they expand in brisk heat and a close confined atmosphere. In order that the flowers may arrive perfectly fresh and last some time after they are cut from the plant they must be developed under comparatively cool conditions. If you can give the plant a temperature of 50° at night with a rise of 5° by day and a circulation of air daily when the weather will allow of this being done, we feel certain the flowers will remain fresh after they are cut. A lower temperature of 5° will do no harm; in fact, prove an advantage if maintained for a few days previous to cutting the flowers. E. aquiniflora will not remain fresh for many hours if cut from plants subject to stove heat and treatment; but when cut from plants in a temperature of 45° or 50° they will last for a very long time. We advise you when packing the flowers to place a little clean damp moss round the stems, or if you cannot obtain this any soft leaves that have been dipped in water will do very well.

Grapes Shanking (Bolton).—No doubt the shanking of your Grapes has been due mainly to a lack of support and deficient supplies of water to the Vines. Your own statement confirms this. The oystershells would do no harm, but on the contrary are good for Vines. Many break up these shells and incorporate them with the soil when making Vine borders. We scarcely understand your letter referring to the Grapes shanking after being cut. If you place the stems in bottles of water they should have kept perfectly fresh, in fact as fresh as if they had remained on the Vines. We presume you did not do this after cutting them from the Vines, and therefore they have shrivelled, for you say they were quite good when cut. We advise you when top-dressing your border to give it a good application of fresh lime—that is, if you think the soil deficient in this important ingredient. We have known Vines that have shanked badly greatly improve by a good dressing of lime. If you do not know how much lime to use, and will state the size of your border, we shall be pleased to advise you. Give your Vines more water another year, and be careful that the soil never becomes really dry, for if this is allowed the Vines are certain to suffer. You had better not pot your Pelargoniums until they show flower stems, and not then unless you wish to grow the plants into a larger size, for they will

flower for a very long time in the size pots named if you give them weak stimulants after they commence flowering. If you pot the plants they will not come into flower so early by a month or six weeks as they would in the pots in which they are now growing in. If you decide to grow them into a larger size you may pot them, provided the pots they are now in are full of roots, towards the end of next month, or early the following one, pressing the new soil firmly into the pots, so that firm sturdy growth will be the result. If you wish a flowering plant to cover the trunk of your dead tree, Clematis flammula would be very suitable. Wistaria sinensis would also do. Honeysuckle would also be very effective when once established. Ampelopsis Veitchii, a deciduous ornamental foliaged plant, clings naturally to almost anything; it would give no trouble in training after it once started to climb the tree.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (James Pound).—No. 6, Dr. Trousseau; 12, Amadotte; 13, Reinette de Canada; 18, Cox's Orange Pippin; 24, Winter Nelis.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A. Reading).—Oncidium concolor. (T. B. L.).—Passiflora quadrangularis. (J. Cameron).—You tied the names so tightly round the sprays that this, with the damp material in the box, obliterated the writing, and we can scarcely decipher the numbers. What we take to be No. 1 is Juniperus excelsa; 2, perhaps Thuopsis borealis; 4, Juniperus chinensis. We cannot name the others. The habits of Conifers should be stated and numbers affixed, so that they can be seen without untying the ligatures, as when damp soft paper is tightly bound round the stems it is almost impossible to remove the strips without tearing them. The fleshy-leaved plant is Portulacaria afra, the African Purslane. The Egyptian seed is Urquinea undulata, a bulbous plant allied to the Scillas. Sow in a cool frame in spring. Your Apple trees are infested with the American blight, Aphis lanigera. Dress them with petroleum, rubbing it well into the fissures with a brush.

COVENT GARDEN MARKET.—DECEMBER 16TH.

BUSINESS remains the same. Some good sample of late Grapes, Gros Colman and Alicante, reaching us, making fair values. Heavy supplies of Nova Scotia Apples to hand. Kent Cobs better.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0	to 3 6	Oranges	100 4	0 to 6 0
" Canadian ..	10 0	15 0	Peaches	per doz.	0 0 0 0
" Nova Scotia ..	10 0	12 6	Pears, kitchen ..	dozen	0 6 1 0
Cobs, Kent	per 100 lbs.	22 0 25 0	" dessert	dozen	0 4 1 6
Figs	dozen	0 0 0 0	Pine Apples English ..	lb.	1 0 1 6
Grapes	lb.	0 6 3 0	Plums	1/2 sieve	0 0 0 0
Lemons	case	15 0 21 0	St. Michael Pines ..	each	1 6 5 0
Melons	each	0 0 0 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 0 0 0	Mustard and Cress	punnet	0 0 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	1/2 sieve	2 6 3 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 0 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 0 0 0
Cauliflowers	dozen	2 0 3 0	Salsafy	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	2 0 2 6
Cucumbers	each	0 0 0 0	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 6
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0



AGRICULTURAL PROGRESS.

ANNUAL Clover layers are among the things which it is highly important should be put to the test of practical utility as speedily as possible. With Wheat at 50s. or 60s. per imperial quarter, a four-course shift and annual Clover layers answered very well, but now that Wheat has apparently fallen permanently in value there will be a proportionate reduction in the area of land devoted to its culture, simply because it is unprofitable. Stern necessity presses more and more upon us the importance of rigid economy, and we are bound to inquire if we cannot do better than sow Clover

alone. On many a farm we find a practical answer to this query in the pleasant guise of the mixed herbage of alternate husbandry. There we do not find the Clovers altogether discarded. The best of them are retained—Perennial Red Clover, Alsike, Trefoil, Cow Grass, and White Clover are now mixed with such Grasses as Cocksfoot, Meadow Foxtail, Timothy, Meadow Fescue, and Perennial Rye Grass for two, three, or four years' layers, and with good culture we obtain a crop of greater bulk, nutriment, and value, and we effect a considerable saving in both men and horses. Upon farms where the husbandry has always been of a mixed character such layers found a place even before Wheat became so cheap, but in the corn-growing districts of the eastern counties Clover pure and simple is still to the fore. No doubt a few acres of Red or White Clover seed often prove very profitable; but that is a matter somewhat wide of the question, and a general recognition of the importance of mixed layers is inevitable sooner or later. We have reason to fear that the majority of farmers are slow to realise the important bearing which such changes have upon results, for so many appear content to struggle on without a thought of change or an attempt at improvement. Reductions of rent are certainly asked for and granted, but in common fairness farmers are bound to see if their system of cropping and cultivation of the soil is the best. It is not right to regard with contempt every attempt at improvement. Be very sure we all have still much to learn. This is an age of progress, and agriculture must not lag behind; only let us be careful to put each new thing to a severe test before venturing upon the application of it to practice on a large scale, and we cannot go far wrong. If we can, by means of a two or three years' layer, obtain an annual supply of nutritious fodder of even greater bulk than an ordinary Clover layer affords, and at the same time avoid fully two-thirds of the expense of cultivation over a series of years, it is obvious that the plan will make its way in spite of whatever opposition may be raised against it. Opposition? Yes, undoubtedly; for there has never been any attempt yet made for the promotion of real progress that has not been opposed in some way or other. Such opposition may not be active, it may be only passive inertia; but it exists nevertheless, and the best way to overcome it is to show results which cannot be ignored. Tangible facts are what farmers understand, yet the value of alternate husbandry, even in theory, is so palpable as to arrest the attention of every intelligent thoughtful man.

The careful selection of pure seed is another indication of progress, and we should all gladly use such seed exclusively if only our great seed merchants would be somewhat more reasonable in their charges. Surely from 80s. to 90s. per quarter for seed Wheat and Barley is altogether beside the mark in these hard times. No doubt, a certain extra outlay is involved in the cultivation and cleaning of such seed, but we confidently venture to assert that a reduction in price would lead to a much larger sale. There is no such thing possible as a monopoly of pure seeds, and the high prices at which they are now sold must tend to tempt other seedsmen to enter the field; but we certainly question the wisdom of a policy leading to such a result. By all means let us strive to procure pure seed from the best source, if only it can be had at a reasonable rate, for no matter how well we may cultivate the land, if we do not use good seed we cannot obtain really good crops. Grass seed from the hay loft and the screenings of corn have been used again and again upon the same farm, where it was by no means uncommon to hear it said that the land was not good for this or that sort of corn, or that it was unsuitable for pastures. Can we wonder that such careless slovenly practice leads to failure? There must be thoroughness in every detail of our work—drainage, ploughing, the destruction of perennial weeds, a fine seed bed, fertile soil, the best seed sown in good time, due care in harvesting the crop, in building and thatching of ricks—aye, and even in threshing and dressing the corn; everything is worthy of and must have our best attention. Care, watch-

fulness, and sound judgment are indispensable in the management of such work, the important points where error is apt to creep in and spoil our work being only learnt by experience. Corn seed, foul with the seed of Charlock and other weeds, or containing Cockles, should never be sown. Mixtures of Grass seed, whether for permanent pasture or for alternate husbandry, should always be purchased subject to analysis, for adulteration is still very prevalent.

(To be continued.)

WORK ON THE HOME FARM.

The whole of the cows and store cattle have been withdrawn from the pastures since October, and they are permanently settled in the yards for the winter. Close attention is given to the condition of both yards and lodges. The drainage of the yards is kept open so as to prevent any serious accumulation of water among the litter. Damp and sodden litter and dung is cleared out of the lodges regularly every morning, and due care taken to have plenty of dry clean litter put down for bedding. Shelter, warmth, cleanliness, with gentle kindly treatment, are of equal importance with good wholesome food and pure water. Now that the value of straw for cattle food is more clearly understood than it ever has been, it is much used without hay; straw, chaffing, root-pulping, and a mixture of the two articles of diet being the ordinary fare of store cattle. Dairy cows must not have Turnips, but a mixed diet of Carrots or Mangolds with chaff and bran. Repeatedly have we called attention to the value of bran for dairy cows in winter. We regard it as indispensable, for it is sweet, wholesome, nutritious food, and when given regularly night and morning it insures a full yield of milk. We recently tasted some butter quite unfit for use either at table or for cooking; it was bitter to the palate, and had an offensive odour, all of which was owing to an unsuitable diet. Cows often give evidence of a morbid appetite by eating foul litter saturated with filth; or if let out upon pasture late in autumn they will always eat fallen Walnut leaves if they can get at them, and then both milk and butter is spoilt. Turnips, Swedes, oil-cake, and an excessive allowance of Cabbage all spoil the milk. We cannot be too careful about this matter, and we may add that care and painstaking both in the management of the cows and in the dairy are well repaid by the excellence of all the dairy produce. There need be no uncertainty about this, for dairy management is a very simple affair, provided it is done in the right way.

The killing and curing of bacon pigs is now being done as fast as possible, a fresh batch of bacon and hams being put in pickle every month as that which is already pickled is taken to the smoking house. Pigs not required for home consumption are being sent into the market as fast as they become ready, those of compact growth being sold as porkers for the London market at from 35s. to 40s. apiece, and bacon pigs at from £4 to £5 apiece. We have purchased a considerable number of pigs at about 16s. apiece to consume inferior corn, of which we have so much just now, and they soon reach the porker size, and are then sold. We shall turn over several hundred pounds in this way before spring, and so turn all our tail or discoloured corn to profitable account.

CHICKWEED.—I think that the Chickweed seed spoken of at page 530 was probably carried by the wind. At the garden at Wisley we have a large heap of burnt rubbish ashes entirely green with Chickweed. In this case any seed in the soil must have been destroyed by fire.—GEORGE F. WILSON.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.


Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
		Barome- ter at 32s and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
Dry.	Wet.		Max.	Min			In sun.	On grass.				
1885. December.		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday	6	29.506	36.2	35.4	N.E.	42.0	41.4	35.0	43.8	28.6	—	
Monday	7	29.846	37.2	34.0	E.	41.4	40.7	34.9	48.6	31.9	—	
Tuesday	8	30.076	28.2	25.5	N.	40.3	37.2	27.6	56.3	22.3	—	
Wednesday	9	30.494	27.2	24.9	N.W.	59.2	36.4	24.7	60.8	18.6	0.012	
Thursday	10	30.352	27.8	26.8	N.	38.2	36.2	26.4	55.4	21.8	—	
Friday	11	30.57	24.2	23.6	N.W.	37.5	33.8	22.3	51.7	15.4	—	
Saturday	12	31.379	32.7	31.6	E.	36.7	39.4	23.1	40.0	18.7	—	
		30.153	30.5	28.8		39.3	37.9	27.7	51.6	22.5	0.012	

REMARKS.

6th.—Morning bright; dull after, with spots of rain.
 7th.—Generally cloudy, but bright about noon.
 8th.—Fine, bright, and cold; freezing nearly all day.
 9th.—Bright and cold; snow late in evening, about 6.1 inch deep.
 10th.—Sharp frost; fine.
 11th.—Very cold, but bright; slight fog at night.
 12th.—Fair, but a little fog; frost gone by the evening.

A week of fine dry winter weather, with skating in and round London on Friday and Saturday. Temperature about 14° below that of the preceding week, and nearly 10° below the average.—G. J. SYMONS.



COMING EVENTS

24	TH	CHRISTMAS DAY.
25	F	Bank Holiday.
26	S	
27	SUN	1ST SUNDAY AFTER CHRISTMAS.
28	M	
29	TU	
30	W	

CHRISTMAS COGITATIONS.

CHIRSTMASTIDE is here, and is being anticipated with mingled feelings—the pleasurable, it is hoped, largely predominating. Among the incidents of the season are Christmas meetings, Christmas greetings, and—Christmas bills, these latter sometimes having a sobering tendency during a period when joyousness is supposed to prevail. Those bills for garden supplies may possibly show some diminution this year in more than one or two instances, and it is conceivable that more or less of disappointment may be experienced accordingly; yet it may be safely predicted that some of the accounts will be large enough for individuals immediately interested.

It is not to be expected that the depreciation in the value of land, which unfortunately must be admitted, will, whether it be temporary or the reverse, have no effect on the expenditure that it has been customary to devote to the maintenance of gardens. The exigencies of the times must have an impression in the direction indicated. However great the desire to indulge in what may be termed the luxuries of horticulture, other matters of importance demand attention. It were worse than useless to ignore the actualities of the present and the prospects and probable eventualities of the future. By whatever cause, or combination of causes, induced, it must be conceded that we are passing through a social revolution. As is inevitable under the circumstances, the future of gardening is contemplated with somewhat gloomy forebodings by not a few persons: others, and possibly a minority, being more sanguine in their forecasts. While they may admit a present check to progress, they have no fear of any permanent retrogression in horticultural pursuits. On the contrary, they are convinced that as year succeeds year a greater number of persons engage in gardening both as a healthy and enjoyable form of recreation and as an important factor in contributing to the comforts and necessities of life.

There can be no question that gardens have a large, and probably a larger share than at any former period, in ministering to the wants of the inhabitants of this country in the adornment of their homes and, it may be added, of themselves; and it is equally beyond dispute that garden produce in its varied forms figures very prominently among the requisites of families at all times, and more markedly and especially during such festivities as the one immediately approaching. This all gardeners know. The demands on their resources may be constantly great, but they are as a rule unusually pressing at this particular season of the year, and the thoughtful and far-seeing make the necessary preparations for affording a plentiful supply of whatever may be needed, as far as their means permit, for the requirements of the time. Without vegetables of the best quality, fruit of meritorious character, plants and flowers choice and beautiful, it is impossible the family table or festive board can be completely furnished.

And it is not in the homes of the affluent alone that

garden produce, ornamental as well as useful, is appreciated. The extraordinary market supplies show conclusively how great the general demand must be, and it is certain that the number of purchasers is greater than ever it was before. It is true the supply is equal to the requirements, and occasionally more than equal, and when that occurs the returns to the cultivators are necessarily diminished. This is to the advantage of consumers, and the only way in which producers can realise even a fair profit under those circumstances is by obtaining a greater abundance of produce from a given extent of ground or space, placing this in the markets in the best possible condition, and at a time when it is most in demand, then disposing of it quickly. Small profits and large sales will in the future have to be relied on, small sales and large profits having practically become obsolete. Some enterprising individuals recognise this, and are preparing accordingly, in full confidence that they will not be disappointed. Just as the nimble shilling is more potent than the slow half-crown in enhancing the proceeds in the form of admissions to exhibitions, and on the principle that third-class passengers are the chief contributors to railway dividends, so in the matter of commercial horticulture—the great number of small purchasers cannot be overlooked, for though their individual disbursements may be small the aggregate amount is considerable, not to say surprising, in its magnitude. There appears to be a great “levelling downwards” in the taste for flowers, fruit, and vegetables; and in the future, instead of few and heavy Christmas bills incurred in furnishing gardens, it is not unlikely that the amount devoted to that purpose will be greatly subdivided.

Gardens, there can be little doubt, will increase in numbers in the future, as will the cultivators of land generally, and this impending change, wisely arranged and prudently established, can hardly fail to result in an increased demand for seeds, roots, and plants. The present condition of things cannot be sustained. There must be an end to the sliding down of rents for land, that in some instances appear to have become as much a fashion as necessity. No man can cultivate profitably if the land is master of his capital; the capital must be master of the land, whether the extent of it be large or small, or a collapse is inevitable sooner or later.

The chief hope of horticultural prosperity rests more on the greater number of individuals that will be induced to engage in it than in any sudden return to the past order of things. The mercantile community will prove effective supporters of horticulture in the future, and the greatest expenditure will be in the form of proceeds from trade and industrial enterprise. The popular taste for gardens, plants, and flowers is, as above intimated, increasing. Orchids, Roses, and Chrysanthemums have found their way to the business centres, where their merits are discussed, and a wholesome rivalry exists among the wealthy frequenters of the great marts of industry in surpassing each other in the excellence of the produce of their gardens. The mayors and corporations of cities and towns are giving their official countenance and support to societies established for promoting high culture, and are doing their best to popularise horticulture as a pursuit fraught with benefit to rich and poor alike. This is a hopeful sign, and all who engage in promoting better cultivation in their districts are engaged in a most commendable undertaking. There is a greater thirst than ever for information on gardening matters, and at no period were there so many attentive readers of horticultural literature as at the present time. Instruction is sought for and eagerly awaited on the cultivation of plants, as well as on the management of what is regarded as more useful and profitable crops, though so great has the demand become for flowers in towns that these, regarded from a commercial point of view, are, when well grown, both “useful and profitable.”

There is little doubt that in the future gardens will not be regarded so much as ornamental appendages to homes as

for yielding something of which the value can be represented in debtor and creditor accounts. Of whatever nature the produce raised it has a commercial value, and the greater the judgment that is exercised in raising it in the best condition and at the least outlay the greater will it be to the advantage of the manager. It is from that point of view that the capacities of gardeners are being judged, and will be more closely judged in the future. Many excellent cultivators are undoubtedly heavily handicapped in the discharge of their duties. They are simply overweighted with pleasure grounds, from which no adequate compensation can be shown in figures for the labour and consequent outlay that has to be incurred in their maintenance. They may economise in fuel by forcing less early and briskly; but if lawns, flower beds, and walks must be maintained in extent and condition the life of many an excellent gardener will not be so pleasant as to the outside world it seems. This is one of the difficulties of the situation, and those gardeners will act prudently who strive to minimise them, and work as contentedly as they can till a better opportunity is afforded them for the display of their abilities.

Many first-rate cultivators are hardly pressed, and we bespeak for all earnest striving men of good character such consideration as can be fairly accorded them under the circumstances. This is not the time for changes to be lightly made. A good man, even if not perfect in all things, is not always succeeded by a better, and the imperfections of the new may prove greater than those of the old. Then, on the other hand, there is an uncertainty, and it may prove serious—namely, that of a gardener relinquishing his position because everything is not in accordance with his wishes, or because some members of his calling, and it may be less competent, are more fortunate than himself. Bitter are the regrets of many who would now rejoice in the opportunity of returning to the field of their former labour. Hard as it was to till, they have found it harder since, and their well-wishers are powerless to assist them out of difficulties that perhaps might have been avoided. Faithful work and patient waiting is a golden rule for gardeners who are longing to excel yet struggling with adverse conditions.

For young men, too, there is only one safe line of conduct—the most positive sobriety, strict attentiveness to duty, great industry, a becoming demeanour, and improving perseveringly in whatever they perceive themselves to be behind their fellows. Every student of gardening should make himself at least equal to the best in all the details of his calling. Then, and then alone, he is in a position to turn an opportunity to account, and win for himself the good position he covets and deserves; but, on the other hand, similar opportunities that come within the reach of the negligent and incompetent are only means for bringing out their shortcomings, and the result is failure—perhaps failure for life.

Glad shall we be if such failures in the future are few, and if a general improvement shall commence from the present time, when such a happy disposition exists to reconcile differences and promote feelings of goodwill in the relations of individuals of varying grades; then will there be hope that young and old, masters and men, readers and writers, will experience the pleasure embodied in the time-honoured wish that, it is hoped, may never become obsolete—

A MERRY CHRISTMAS.

HOTBEDS—HOW TO MAKE AND USE THEM.

THERE are few gardens at this time of year in which hotbeds are not being made to force early supplies of Asparagus, Potatoes, Carrots, Radishes, &c., therefore a few remarks upon the subject may be acceptable. The first thing to be done is to mix sufficient manure (as it comes from the stable yard) with an equal quantity of leaves; to make the necessary number of beds, with turning the material two or three times within ten or twelve days from the time of mixing to allow the rank heat to escape. In order to allow of the hotbeds subsiding a couple of feet they should be made 6 feet high and 2 feet

wider and longer than the frame which is to be placed thereon, but in case of a hotbed being made large enough to take two or more frames longitudinally a space of 18 inches between each will be ample. In forming the hotbeds the fermenting material should be well trodden as the work proceeds, especially so 3 feet wide along the centre, which, moreover, should be rather higher than the other parts, inasmuch as it is the hottest part of the bed, and consequently the first to decompose and subside. The ground on which the hotbed is to be made should be higher than that surrounding it, so as to prevent the accumulation of water. Having placed the frame or frames, as the case may be, on the hotbed, sufficient fermenting material to make the depth of the back part of the frame correspond with that of the front should be placed therein, following this with a couple of inches depth of decayed manure. For Potatoes and Carrots add a layer about 9 inches thick of light garden soil and leaf mould in the proportion of three parts of the former to one of the latter, mixing thoroughly therewith a few shovelfuls of fresh soot, more with a view to rendering the soil distasteful to worms and insects than fertilising it. This will result in the production of clean roots.

In making hotbeds for Melons and Cucumbers a different line of procedure must be followed, as higher bottom and top heat is necessary to promote healthy growth than is required to produce first-rate crops of Asparagus, Potatoes, Carrots, and Radishes. This being so, the hotbeds intended specially for Melons and Cucumbers should be made just large enough to hold the frame, and in making them a few layers of old Pea sticks should be placed across the beds, and with the same object in view—viz., that of communicating heat from the freshly made up linings to the interior of the bed and frame. It will be advisable to introduce a few small drain pipes in the sides and ends of the bed as it is being finished, say 6 inches from the top. When the box is placed on the bed put a shell inside it, which should be 6 inches shallower than the box. The shell can be easily made by measuring the interior of the box or frame and making it 1 inch less all round, and, as I have already stated, 6 inches shallower, nailing the battens on the outer side of the shell, so that when it is fixed in the frame there will be a space of 1 inch between that and the frame, thus supplying a means of top heat from the linings and bed. Hotbeds should be made in a southern aspect, or in front of a wall or Laurel hedge planted for the purpose of breaking the north winds. I will now show how frames on hotbeds may be profitably used by planting and sowing in them the following crops.

Potatoes now pushing into growth should be planted two days after the soil has been placed in the frame, in rows 1 foot asunder and at 7 or 8 inches apart in the rows. The frames should from that date until the Potatoes have completed their growth have sufficient air admitted to insure a sturdy growth in the haulms, without which satisfactory results will not be achieved, and as soon as they have made a few inches growth above ground a like thickness of soil should be placed between the rows. Potatoes thus planted will yield a supply of young ones fit for table about the end of April, when it should be continued from produce obtained by successional planting. They will require little, if any, water at the roots during the interval from December to April. If the soil be not considered sufficiently rich for the production of moderately good-sized tubers a sprinkling of Beeson's manure may be advantageously incorporated with it.

Similar advice is applicable to Carrots. Early Nantes Horn is the best for early use, and of this sow the soil thinly in drills about 1 inch deep and 1 foot asunder, and between these may be similarly sown rows of Wood's Frame Radish. The soil should then be closed over the seed and be made moderately firm with a board or the back of the spade. These frames, like those containing Potatoes, must have sufficient air given from the beginning to prevent their occupants making a weakly growth. A pinch of Cauliflower, Cabbage, and Lettuce seed may be sown thinly in these frames at the same time as the Carrots without in any way interfering with the welfare of the latter crop, inasmuch as the seedling plants could be pricked out in a pit containing a gentle bottom heat or under a few old lights in a sunny border as soon as they are large enough. The Radishes also will have been removed for salading before the Carrots require more room. As soon as the plants are large enough to handle they should be thinned out at 2 inches in the row, and afterwards be thinned out as required for use.

When the surface of bed becomes dry give tepid water sufficient to reach the roots. If a surfacing of soil is put over the short dung Asparagus roots can be placed closely together thereon, covered with a few inches of light soil or sifted leaf mould, then supplying tepid water to settle the soil among the roots. When the "grass" has pushed a couple of inches through the soil it should be cut and stood on the ends in a 6-inch pot resting in a saucer of water placed in a house where the temperature does not fall below 50° or 45° until required for use. When the condition of soil indicates dryness give sufficient tepid water to thoroughly moisten both soil and roots, and ventilate sufficiently from the time the Asparagus appears through

the soil until it is cut to prevent its making spindly growth. My experience of covering with a few inches thick of sifted leaf mould is that the "grass" is thereby improved in quality, being cleaner, better blanched, and crisper.

Beds which are specially made for Melons and Cucumbers should have a layer 5 or 6 inches deep of leaf mould or sawdust placed over the short dung in which to plunge 3-inch pots three parts filled with light rich mould and containing one seed each of Rollisson's Telegraph Cucumber and Highcross Hybrid Melon (which is well suited for frame cultivation) or any other approved variety. Cover the seed with a little soil and the pots with a square of glass, which, however, should be removed as soon as the plants appear, and the latter when they have made a couple of inches of growth should be top-dressed with soil of the same temperature and description as that in which they are growing, taking care in doing so not to injure the stem of the plants, which is easily done at that stage of growth by a slight pressure of the hand. Various bedding and other plants can at the same time be raised from cuttings and seed; these, however, must be removed as the Melon and Cucumber plants extend their growth. Both Melon and Cucumber plants should be planted on mounds 7 or 8 inches deep and 15 inches through in the centre of each light as soon as they have made three rough leaves and before they become root-bound in the pots. The Melon delights in a calcareous loamy soil, and the Cucumber in a light rich compost, consisting of three parts light sandy loam and one of short dung and leaf mould well mixed. In planting press the soil firmly about the roots and afterwards supply tepid water to settle the soil. Put a mixture of fresh soot and lime around each plant about 3 inches from the stems as a protection from the attacks of slugs and woodlice. This, moreover, will prevent a superabundance of moisture from settling on or about the stems of the plants, which should on being planted be kept well above the mound, especially with Melons. As the roots push through the sides of the mounds some more soil of a like temperature should be added thereto to the thickness of 3 or 4 inches, and which additions continue to make until the intervening space is filled to within a couple of inches of the summit of the miniature mounds on which the plants have been set. Take three or four leading shoots from each plant and train them regularly over the allotted space, cutting or pinching out all superfluous shoots. Stop those left when they have attained a length of 18 or 20 inches to induce them to send out fruit-bearing laterals, which may be stopped a couple of joints beyond the fruit. However, this part of the subject I must leave to be treated later on. I need hardly point out that Melons, Cucumbers, and Vegetable Marrows can be grown in frames on hotbeds previously occupied with Asparagus, Potatoes, Carrots, and Radishes during the summer and autumn months.

I may remark that the linings of Melon and Cucumber frames should be made up regularly every week or fortnight, according to the weather and the state of the fermenting material to within a couple of inches of the top of the frame, and for this purpose a good heap of fermenting dung and leaves should be kept in readiness. In making up the linings the old can either be freshened by adding thereto some fresh warm manure and leaves, or removing them and supplying fresh material over the frames at night with mats and dry fern sufficient to exclude cold as well as to prevent the internal heat escaping. Frames containing Asparagus, Potatoes, &c., will only require to have the linings made up from the top of the hotbed (where a space of 2 feet at the sides and ends is reserved as a foundation for the purpose) to the top of the frame, more with a view to keeping out the cold than to impart heat to the interior of the frame.—W. W. L.

THE FUTURE OF GARDENING AND GARDENERS.

THERE is a question which keeps pressing itself nearer and nearer to us every season, and which is probably destined soon to come on with a much greater speed, and that is—What is to become of our great private gardens and our army of professional gardeners? It says much for the class of men engaged in this work that hitherto they have against great odds been almost able to keep up appearances as of old, and to make ends, if not to meet, at least to come within a "measurable distance" of doing so. But does anyone suppose that this state of things can continue?

A dozen years or more ago when the country was in great prosperity a large amount of money was spent in gardening, and what was called gardening. Some of it certainly deserved another name, but I suppose it pleased those who found the money, and we had no right to grumble, although our taste often rebelled. Well, in those prosperous times even the head of a large gardening establishment had to work very hard, and it was no easy task to keep abreast of his duties. He never found he had more men than he knew what to do with if they were good ones, and he was fortunate indeed if he could not during the spring months at least see a fortnight's work waiting to be done.

The times changed, bad seasons came. But bad seasons had come before, and good ones had followed, bringing prosperity in their wake. There was, however, a succession of bad seasons, and agriculturists who, by-the-by, had grown somewhat luxurious in their prosperity, could not pay their way, and the great landowners speedily found the consequences. One of the luxuries of this class is their gardens, and many of them quickly decided to curtail their expenditure in this direction, and they were perfectly justified in doing so. But how do we find they set about it? A case within my own knowledge will, I am afraid, answer for many more. "Brown," says the Squire, "I see my garden expenses for the last year were over £1000!" "Yes sir, what are called garden expenses did reach that amount, but at least one-third of it ought to be debited to other parts of your establishment. For the *bona fide* garden expenses you have certainly had the worth of your money in the keeping of the flower gardens, pleasure grounds, the kitchen garden kept as a pleasurable promenade, and in supply of flowers, fruits and vegetables."

"Well," says the Squire, "it is an enormous sum of money to spend on a garden, and remember I could not always depend on getting things when I wanted them. Last season in London I had to buy Mushrooms, Peas, and other things. I cannot be expected to spend this large sum of money on my garden and then have to purchase common vegetables."

In vain Brown protested that he could not grow Mushrooms without the aid of the Squire's horses which he took away with him when he went to town, and that Green Peas were neither profitable nor easy to produce in the middle of May. His argument was not acknowledged, at any rate as convincing, and he did not find the Squire very reasonable on the other part of the question. After a considerable amount of what that gentleman would call reasoning and which many of my readers are only too familiar with, he winds up by saying, "You must reduce the expenditure unless you wish to see me in the workhouse."

"Certainly I will, sir; I will reduce it to any reasonable sum you can name, but I cannot do it all myself, I must have your assistance. I cannot do as much with 15s. as I could with 20s. Reducing the labourers' wages, discharging some men, and selling some of the produce as you suggest will not do it unless you consent to give up something which at present costs a large sum to produce or keep in order. Shall it be a portion of the flower beds, which at present take some 30,000 plants annually, and half a dozen men to keep in trim? The place would be improved by sweeping away the greater portion of these gaudy patches, and replacing them with what I should call more of an English flower garden. Shall it be a partial substitution of foliage for flowering plants in the mansion or less trimly kept pleasure grounds?" But the Squire would have none of these things. He went away saying, he "could not reduce the expenditure 6d. without having his garden spoiled," and poor Brown was left to struggle on with a less number of men, more limited materials, and act as a sort of market gardener who sells his wares in the nearest towns for less money than they cost to produce.

Good seasons, as good as fine weather could make them, have returned, but unfortunately they were not accompanied by the expected good times, and consequently the screw has been put on again and again.

Poor Brown is still alive and plodding away, but he is getting terribly shaky. His nerves appear to be unstrung; and although he has been a good honest fellow all his life, never injuring anyone but himself, there is a sort of timidity in all his actions, such as an honest man never ought to exhibit, and which betoken a gradual breakdown of the nervous system. He still works wonders with the means at his disposal; making bricks without straw or even without elay would be child's play compared to the miracles he is expected to perform. But he is, and is likely to remain, in this predicament—he can neither satisfy himself nor anybody else.

QUERY.—Has anyone gained anything by the line of action I have indicated? And what is to happen after the next move or two in the same direction?—WM. TAYLOR.

GRAPES AT CULZEAN CASTLE, Ayrshire.

So much has lately appeared in the horticultural press regarding the Grapes that have been exhibited from this fine fruit-growing establishment, that perhaps a few particulars of their appearance at home, especially the wonderful weight of fruit annually produced, may interest many readers of the Journal. At the outset I may remark that Culzean Castle is the principal Ayrshire seat of the Marquis of Ailsa, and is distant some fifteen miles from the town of Ayr, and five from that of Maybole; the former celebrated as the birthplace of the poet Burns, and the latter famous for its boot and shoe manufactures. The castle—a most imposing pile of modern buildings—is built upon the edge of a precipitous rock overhanging the sea nearly 200 feet high, and considered one of the most picturesquely situated

mansions in the country. The gardens are situate about a quarter of a mile from the Castle, and contain within the walls some six acres of highly cultivated and productive fruit and kitchen gardens. A wall runs through the middle from east to west, upon the southern aspect of which the principal fruit and forcing houses are built, consequently all lean-to's. But to the Grapes.

ALNWICK SEEDLING.—Culzean has been called the home of this fine Grape, and I think it justly deserves the title, as it is here grown to a very high state of perfection. The photograph I send you may enable you to form a better idea of its grandeur than any description I could give. It is grown in a late vinery in company with Lady Downe's and Alicante. Its bad setting qualities of which we sometimes hear are here unknown, being found in this respect as free as a Hamburgh. As to its keeping qualities its behaviour is rather singular. The Vines in this house are at present carrying their third crop. The first season they began to shrivel about the end of

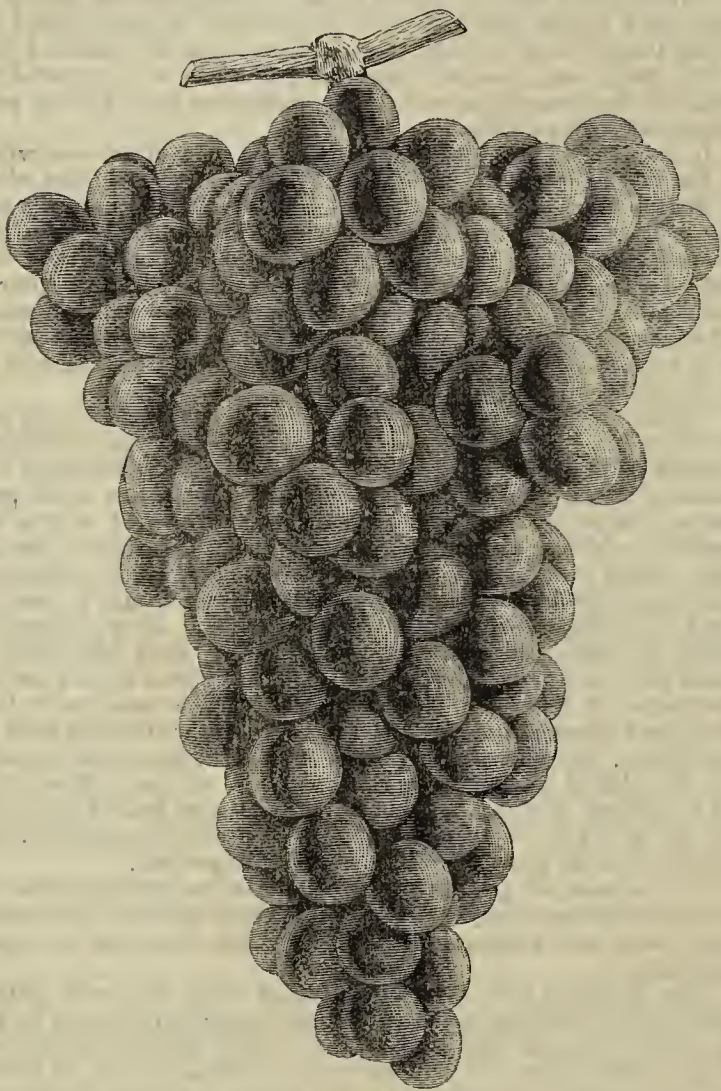


Fig. 82.—Alnwick Seedling.

September. The next season they kept fresh fully a month or six weeks longer, while this season they are at the present time (Dec. 1st) quite plump and fresh, so with increased age this variety may yet turn out a late Grape, which in the early spring months would be a great acquisition. I may state that the crop was a very heavy one, averaging from $2\frac{1}{2}$ to 3 lbs. per foot of rod, some bunches being over 5 lbs. in weight, and the finish simply superb.

MADRESFIELD COURT.—Here this grand Grape is also exceptionally well done. It occupies an adjoining house to the Alnwick Seedling one. To give an idea of the enormous weight of fruit carried by this variety I may state that this season, just when beginning to colour, from three rods 12 feet long that were thought rather severely taxed five bunches were cut which weighed 20 lbs., three of which form part of the rather imperfect photograph I send.

FOSTER'S SEEDLING.—In the same house this is equally fine, having grand bunches 5 and 6 lbs. in weight. This is a great favourite here, keeping in good condition from July to November, its rich yellow colour, coupled with the peculiar bloom, characteristic of this variety when well grown, giving it a fine appearance. It is found a heavy cropper, and was here finishing 3 lbs. to the foot of rod in grand style. As is well known, Foster's Seedling and Madresfield Court are two

varieties much given to splitting. Here this evil is almost unknown, judicious ventilation, with a constant circulation of dry warm air during the ripening process, being found a sufficient preventive without resorting to the "gimlet" or restricting the supply of water to the roots. A seedling raised a few years ago by Mr. Murray was on its trial in this house. It is a late black Grape and appears a good cropper, forming nice compact bunches of good-sized berries covered with a very dense bloom. It is quite distinct from any existing kind, and if its trial proves satisfactory will no doubt speak for itself when brought before the public. The next house was filled with a fine even crop of highly finished Lady Downe's. At one end of this house were two rods of Alicante, which carried some of the finest bunches of this variety we ever saw. Many would run 6 and 7 lbs., and perfect models in shape.

Next in order is a Muscat house which, although largely planted with this variety, also contains Gros Colman, Black Hamburgh, Buckland Sweetwater, and Gros Guillaume, the two latter proving their liking for warm treatment by their superior finish, the Bucklands displaying a very high golden colour, while the dense bloom of the Barbarossa gave its large handsome bunches a magnificent appearance. A Black Hamburgh rod was carrying a remarkably heavy crop. The length of rod is but 12 feet, and it would have over 40 lbs. of fruit, many bunches being 4 and 5 lbs. in weight. The next house contains a mixed collection, embracing Foster's Seedling, Black Hamburgh, Madresfield Court, Raisin de Calabre, Mrs. Pince, Golden Queen, and Gros Colman, all displaying superior examples of their respective kinds. The much-derided Golden Queen is here seen in grand style, large bunches with a rich golden colour. It is a noble-looking Grape when well grown, and should be in every collection, being a robust grower, free bearer and setter, and of excellent flavour, and hangs a long time in good condition. Mrs. Pince was also very fine, having very large symmetrical bunches and highly coloured. A rod of Raisin de Calabre set off the middle of this house with five magnificent bunches ranging from 10 to 12 lbs. each. Their great size did not seem to affect their finish in the least, as they were large in berry and of a rich golden colour. Another Muscat house finishes this fine range of vineries with remarkable examples of this high-class variety, bunches 14 to 16 inches in length, and from 10 to 12 inches across the shoulders being quite common in this house, and the finish all that could be desired, being of a rich golden hue. The crop was also quite as heavy as any in the other houses, averaging quite 3 lbs. per foot.

Such is a brief description of a few of the most striking varieties of Grapes grown at Culzean. Other fruits are equally well grown, of which I may have something to say at some future date. If I have not trespassed too far upon your space I will conclude with a few cultural remarks which may not be out of place. As already mentioned, the vineries are lean-to's, and are all of equal build, $13\frac{1}{2}$ feet high at back and front sashes 2 feet, length of rafter 18 feet, but is not cropped to the top, 3 or 4 feet being left clear of foliage for the admittance of light and air, width of border, including outside, 23 feet, and is well elevated, the bottom being on a level with the surrounding ground, the advantages of this plan being higher temperature and thorough drainage. The soil is a very light sandy loam, and could not produce such wonderful heavy crops without liberal feeding, which it undoubtedly receives, Mr. Murray being a firm believer in plenty of water and plenty of feeding. At all seasons the borders are perfectly hard and firm and matted to the surface with small fibry roots. Hung upon the back wall of each vinery are neatly framed tabulated cards containing an accurate account of the progress and general management of each house, such as quantity of water given and when applied, different kinds of manure and quantities given, number of bunches and average weight carried by each variety, &c. As to the quantity of water vigorous Vines in well-drained borders require the following may show. From the 1st of February to the 1st of September of this year the inside borders of six vineries received over 30,000 gallons, which does not include the water received from having the borders covered with bedding plants in spring and heavy dampings two and three times a day throughout the summer, besides many drenchings to the outside borders, and this quantity was deemed insufficient, but owing to the past dry summer curtailing the supply more could not be given. Of manures, many kinds have been used both natural and artificial. Of the latter prominence is given to that wonderful root-producing manure manufactured by Messrs. Thomson of Clovenfords. It is here largely used for many things besides Vines with the most satisfactory results. The Vines are planted 3 to 4 feet apart, according to variety, overcrowding being strictly guarded against, the aim being to allow each leaf as much light and air possible. Everything thoroughly clean, the most scrupulous attention to every detail in connection with their management, with plenty of hard work, are a few of the particulars accredited for the above-mentioned results.—B.

[The engravings are from photographs taken by our correspondent

and we have never seen any to surpass them, with some others before us, as the work of a gardener.]

ICE HEAPS.

I SEE at page 513, December 10th, of the Journal, mention made of an ice heap. When I went to Kilkerran House, Maybole, Ayrshire, on the 30th September, 1860, there was a heap of ice that had been made in December, 1859. Very little was used out of it in 1860, and it served us all 1861, and I never saw a finer lot of ice. The place selected for the stack was close to the stable yard, an open space amongst some large trees, gently sloping towards the north. The first thing done was to put a fence about 5 feet high, made of strong posts, and covered with slabs from the sawmills, all round. As far as I can remember the one under notice would be about 25 feet. We then paved the centre to within 2 feet of the fence, keeping the pavement a little higher than the surrounding ground. On this pavement we built the ice, making the edges with large pieces, and breaking what is put into the centre into small pieces. It was built straight up till as high as the fence, then the head was formed the same as a haystack, then filling the 2 feet between the fence and ice with wood sawdust, till the top of fence was reached; we then covered the head of the stack with Spruce branches, and over these about 2 feet of sawdust was placed, taking care always to keep it as white as possible on the top, so that the sun's rays will not penetrate it.—W. WILSON, *Kingsknowes, Galashiels.*

I THOUGHT the following note might be of use to some of your readers who have to do with the storing of ice. I have not had any experience in this branch of the gardener's duty myself, but my late father had in his time a fair amount. Some years ago he told me that he had just made an ice stack, but instead of breaking the ice in the usual way, he had it marked out in convenient sized slabs. Some men were then put to work with handsaws, sawing along the lines. The slabs were then got off the water, put into carts, and taken to the place of stacking, and piled one upon another. He said there was a saving of time and labour, and the ice kept well, also that it was not difficult to cut with a saw. The ice was a good thickness.—T. S.

SANDRINGHAM WHITE CELERY.

MR. MCINDOE at page 514 of your Journal describes the above Celery as his "Alpha and Omega." I can fully endorse what he has said in its favour, and will add that it is the best frost and wet-proof Celery I have ever tried. This being a moist and mild climate a few degrees of frost destroy most other kinds, so we depend upon Sandringham White for our general supply.

I think that White Plume will have but a short life. The thought of having good white crisp Celery without earthing was too good to be true.—W. O., *Fota, Cork.*

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 545.)

BEST TIME FOR STRIKING THE CUTTINGS.

OPINIONS differ considerably as to when the cuttings ought to be struck. Some growers find one time the best, and some another. My experience is that there is no hard-and-fast line to follow in this matter, because it occasionally happens that cuttings of some varieties cannot be had when desired, so stubborn are the plants in producing them. As Chrysanthemums are grown for various purposes, and as all cultivators do not grow the plants for the same end, it will be better to state the best time to propagate for each system of cultivation. This I will endeavour to explain. Having made this phase in the cultivation of Chrysanthemums a special study, I am certain the times named are the best for the various purposes indicated; but, as above suggested, it is not absolutely necessary to carry out the work at the exact time mentioned in all cases.

In growing the plants for the production of cut blooms for exhibition, any time after about the 10th of December till, say, the same date in January is the best period for propagation; but when the cuttings can be had the former date is preferable, as more time is then allowed for steady growth in a cool temperature, and growths thus produced have the best possible chance of becoming solid through the proper maturation of the tissues of the plants. Some growers prefer to strike the cuttings in bottom heat in February and March, but plants treated in this manner are never so good for the production of such high-class blooms as are afforded by plants raised earlier, for the reason that time will not allow of their proper development during the various stages of growth. The wood of late-struck plants never ripens thoroughly, which is a decided disadvantage much felt by growers in the extreme north of England. Another objection to late propagation is the space required to preserve the old plants for the production of cuttings for two months longer than is necessary when early propagation is adopted, as the space required for the cuttings is obviously much less than is needed for accommodating the old plants, and at that

time of the year space is valuable. Nor can the cuttings be preserved in such a good state as they are two months earlier, as they are sure to become drawn and weakened, and in this condition they sustain a greater check in being severed from the parent plants; and checks in any form and at any time are certainly detrimental to the welfare of the plants.

Some growers strike Chrysanthemum cuttings in November. This I consider too soon, as plants raised so early are liable to give trouble in April and May by insisting on the production of bloom buds instead of growth shoots. This is a source of great annoyance—particularly to growers in the south of England. When the plants do this nothing short of cutting them down to near the soil will check their premature blooming, and often the growths made after this cutting down are useless through the same cause—a production of flowering instead of growth shoots. Some varieties are more liable to this than others, but the evil is mainly induced by the too early propagation of the plants. Growers in the north are not troubled nearly so much with this precocity as those in the south, because the seasons being earlier the plants grow so much faster during March and April than they do in the north; therefore it is wise for growers resident in the north to propagate as near the first-named date (December 10th) as possible, always commencing with the weakest-growing varieties (of which Lady



Fig. 83.—Foster's Seedling.

Hardinge and Criterion are examples), as these require a longer season of growth than the more robust kinds, of which Prince Alfred is an instance.

Some growers say that late propagation reduces the height of the plants. This is correct in some instances, but it is generally at the expense of the blooms. To insure these in the highest possible condition height is essential. I have not yet seen—save in quite an exceptional case or two, through some unaccountable reason—blooms of the same quality produced on dwarf plants as upon those grown in what I will term a more natural manner in regard to the relative heights attained under the two systems. Let it be clearly understood I am speaking in a general sense of those varieties which are naturally tall, and not those which are habitually dwarfer under any system of treatment; therefore I contend that to produce blooms of the highest class the plants must be treated somewhat in a natural way of growth.

For trained specimen plants of all shapes to attain a large size the early part of December is the best for propagation, as it is quite necessary that the plants have a long season of growth, which cannot be had by striking cuttings late. The production of prena-

pure buds above mentioned is somewhat prevented by the frequent pinching out of the points of the shoots, this being necessary to get them of the size and number required before they have grown sufficiently long to form flower buds.

Chrysanthemums intended for what is termed decorative or bush plants do not require to be struck so soon as those intended for large specimens or for exhibition blooms, medium or smaller plants being more useful for decoration, and for this purpose quantity of bloom is of more consequence than quality of the individual flowers; therefore any time during the end of January or early in February will be soon enough. Pompons being so well suited for the decorative system are also better struck at the same time, but where they are grown for the production of exhibition blooms or specimens the cuttings ought to be inserted at the end of December or very early in January.—E. MOLYNEUX.

(To be continued.)

HOT WATER v. SCALE.

I HAVE never had occasion to use hot water for destroying scale on my fruit trees in the open, but, with reference to "Inquirer's" letter in your last number, I may give the result of my experience with it as applied to Peach trees in unheated houses.

Some three years ago, on entering my present situation, I found the Peach trees very badly affected with brown scale. The means taken to rouse the enemy was syringing the trees several times with water heated to 140°, making sure that the water reached every portion of the trees. Immediately afterwards the scale was observed to have a shrivelled appearance, and gradually vanished. Judging from the exceptionally heavy crops of fruit the trees carried the following season it was evident they were not injured by the hot water. To make sure of keeping the trees clear I am repeating the hot-water treatment every winter. Besides syringing the trees as indicated shortly before the buds move in spring, they are syringed with cold water (soft if possible), to which petroleum is added in the proportion of half a wineglassful to each gallon of water. Petroleum and water of this strength need not be washed off the trees again, but the inexperienced should remember that the mixture must be kept well stirred during the whole time the syringing is going on. I do not claim having originated the hot-water cure, it being well known to many gardeners; but I may mention that my information with regard to the temperature of the water—140°—was derived from the *Gardener* ten or twelve years ago.—D. M.

NATIONAL ROSE SOCIETY.

THE National Rose Society held their annual general meeting on Thursday, the 17th inst., in the rooms of the Horticultural Club, Covent Garden Hotel, 1, Henrietta Street, W.C. There was a comparatively small attendance of members, partly owing to the circulars calling the meeting having been issued somewhat late, and partly also to the near approach to Christmas rendering it inconvenient for many to visit London. Letters were received from sixteen members regretting their inability to attend, but twenty-one members arrived before the proceedings were commenced, the following being the names of those present:—Rev. Alan Cheales, Reigate; Capt. Christy, Sidmouth; Frank Cant, Colchester; T. W. Girdlestone, Sunningdale; Wm. Rumsey, Waltham Cross; G. W. Piper, Uckfield; J. Bunrell, Cambridge; Thos. Gravely, Horsham; John Sargent, Reigate; Alfred Slaughter, Steyning; H. Wallis, Brentwood; A. Turner, Slough; W. J. Jefferies, Cirencester; W. H. Williams, Salisbury; B. R. Cant, Colchester; George Paul, Cheshunt; E. B. Lindsell, Hitchin; Richard Bloxam, Eltham; George Bunyard, Maidstone; H. Appleby, Dorking; T. B. Haywood, Hon. Treasurer; and the Hon. Secs., the Rev. H. H. D'Ombraim, Ashford; and Mr. Edward Mawley, Great Berkhamstead.

The proceedings commenced shortly after 3 P.M., and in the absence of the President and Vice-Presidents Mr. Richard Bloxam was elected Chairman. The usual preliminary business was then executed. Mr. Mawley read the circular calling the meeting, the minutes of the last annual meeting were taken as read, and Messrs. G. Bunyard and A. Slaughter were appointed scrutineers of the ballot for the election of officers and Committee.

The Hon. Sec., Rev. H. H. D'Ombraim, then read the annual report, which follows:—

REPORT OF THE COMMITTEE FOR THE YEAR 1885.

The Committee of the National Rose Society have again the pleasure of congratulating their members upon a very successful year. Although this was in many localities by no means a favourable season for Roses, yet the Exhibition at South Kensington proved the largest the Society has yet held. Indeed, but for the hot weather which prevailed at the time, it is very doubtful whether the conservatory could have held all the exhibits which would have been sent in. The Exhibition at Manchester also, bearing in mind the continued drought, must be considered a very good one. It is encouraging to find how rapidly the culture of Roses is on the increase throughout the country, and how many new members are year by year being added to the list of exhibitors.

HYBRID TEAS.

Upon the recommendation of the Sub-committee it has been decided

that "so-called Hybrid Teas be in future classed and exhibited as Hybrid Perpetuals."

FINANCIAL STATEMENT.

This the Committee cannot but regard as very satisfactory, for notwithstanding that £67 12s. has been this year paid in defraying the remaining cost of the publication of the new illustrated Catalogue, there still remains a balance to the credit of the Society of £40 19s. 1d.

ARRANGEMENTS FOR 1886.

The Committee have made arrangements for the metropolitan Show being again held at South Kensington on Tuesday, July the 6th, and for their provincial Exhibition to be held at Birmingham on Thursday the 15th of the same month. The latter Exhibition will take place under the auspices of the Birmingham Botanical Society.

MEMBERS' PRIVILEGES.

Members subscribing £1 are entitled to two private view tickets, and also to four transferable tickets, admitting at the same time as the general public. Members subscribing 10s. are entitled to one private view ticket, and also two transferable tickets. Each one of these tickets will be available at either of the Society's Exhibitions. Those members who are subscribing for the first time in 1886 will each receive a copy of the Society's new illustrated Catalogue of exhibition and garden Roses.

While tendering their best thanks to those kind friends who have in various ways assisted to help forward the work of the Society, the Committee feel that they cannot pass over in silence the great loss which this Society has sustained through the death of its late Vice-President, Mr. George Baker of Reigate, who had always taken the warmest interest in the Society's welfare. In losing him, not only has the National Rose Society lost a valued officer, but many of its members will miss a kind and genial friend. To the local secretaries the thanks of the Committee are especially due, for it is mainly through their exertions that the Committee are able to announce that the number of members on the Society's books now, for the first time, exceeds 400. They also feel much indebted to the Committee of the Horticultural Club for allowing the meetings of the Society to take place in their rooms.

A few remarks followed as to the satisfactory character of the report, and upon the proposal of Mr. G. Paul, seconded by Mr. T. W. Girdlestone, it was resolved that the decision of the Committee, to the effect that "The So-called Hybrid Teas be in future classed and exhibited as Hybrid Perpetuals," be added to the report. The Hon. Treasurer, Mr. T. B. Haywood, then read the following financial statement for the year:—

NATIONAL ROSE SOCIETY BALANCE SHEET, YEAR ENDING 30TH NOVEMBER, 1885.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
December 1st, 1884.					
Balance at Bankers	17	8 2	Printing Catalogue	80	4 0
Subscriptions Received	198	4 3	Less Paid on Account		
Donations to Society	5	0 0	1884	12	12 0
Affiliation Fees and Medals ..	51	1 6	Printing, Stationery, and Advertising		32 5 0
From Royal Horticultural Society	80	0 0	Postage, Telegrams, Messengers, and Sundry Expenses		22 3 9
" Manchester Botanical and Horticultural Soc. ..	105	0 0	Secretary's Travelling Expenses to arrange Shows ..		5 7 6
For Prizes—Veitch Memorial Trustees	5	0 0	Expenses—S. Kensington Show ..		8 10 0
" Rev. J. H. Pemberton	2	0 0	" Manchester Show ..		7 0 0
" Messrs. Bunyard and Co.	2	5 0	Medals		4 10 0
" For 1886, Mr. H. Bennett	7	7 0	" for Provincial Societies		36 8 5
Catalogues Sold	27	2 10	Assistant Secretary and Accountant		18 8
	£599	8 9	Prizes—S. Kensington Show ..		213 5 0
Nov. 30th, 1885, Balance at Bankers	£40	19 1	" Manchester Show ..		143 0 0
			Balance		40 19 1
				£599	8 1

December 14th, 1885.

Audited and found correct.
F. TULLIE WOLLASTON } Auditors.
J. D. PAWLE }
Chairman, RICHARD BLOXAM.

(Signed)
T. BURT HAYWOOD, Hon. Treasurer.

Some formal business was next transacted, the adoption of the report and financial statement being proposed by the Chairman, seconded by Mr. T. W. Girdlestone, and carried unanimously, as was also a hearty vote of thanks to the Horticultural Club for the use of their rooms, the proposer and seconder being respectively Mr. Sargent and Mr. B. R. Cant. A similar recognition was accorded to the officers and members of the Committee for their services during the past year. It was then announced that the officers and members of the Committee proposed for 1886 had been duly elected, the following being the names of those selected.

List of Committee and officers for the year 1886:—President, the Rev. Canon Hole; Vice-Presidents, the Hon. and Rev. J. T. Boscawen, Rev. J. M. Fuller, Robert Hogg, LL.D., James McIntosh; Hon. Treasurer, Thomas Burt Haywood; Hon. Secretaries, Rev. H. Honeywood D'Ombraim, Edward Mawley; General Committee, H. Appleby, Rev. H. A. Berners, Rev. H. B. Biron, R. Bloxam, G. Bunyard, Rev. J. B. M. Camm, B. R. Cant, F. Cant, Rev. A. Cheales, Captain Christy, E. Claxton, J. Cranston, C. E. Cuthell, H. H. French, Rev. F. H. Gall, T. W. Girdlestone, W. J. Grant, T. B. Hall, J. Shirley Hibberd, The Rev. Canon Hodgson, C. F. Hore, J. House, W. J. Jefferies, E. B. Lindsell, Dr. M. T. Masters, F.R.S., Rev. F. Page-Roberts, G. Paul, F. C. Pawle, J. D. Pawle, Rev. J. H. Pemberton, G. W. Piper, G. Prince, W. Rumsey, J. Sargent, A. Slaughter,

A. Turner, E. R. Whitwell, E. Wilkins, Rev. W. Wilks, W. H. Williams; Hon. Auditors, J. D. Pawle and F. T. Wollaston.

A discussion took place respecting the locality of the provincial show in 1887, as it has been found necessary to make the requisite arrangements a considerable time in advance. Numerous towns were mentioned as suitable, several members naming towns in the west of England, such as Worcester, Gloucester, Cheltenham, and Bath, but it was generally decided that for various reasons these are undesirable, one of the principal reasons being that the districts named are rather too early, and another being that the western counties are well supplied by the annual Rose Show at Bath. Shrewsbury, Chester, Hull, and others were also named, but though no decision was arrived at, the majority appeared to be in favour of Nottingham if satisfactory terms could be arranged.

Another matter of much interest came under consideration—namely, the improvement of the medals offered by the Society, which it was said had given dissatisfaction to some recipients. It had been previously determined that some alteration was desirable, and Mr. T. W. Girdlestone was entrusted with the task of communicating with Mr. Pinches with a view to obtain a more artistic design, and at the same time increasing the value of the silver medals. Designs for both the gold and silver medals were now submitted, and gained general approval, being most artistically executed, and such as cannot fail to give satisfaction to all. It was proposed by Mr. G. Bunyard, and seconded by Mr. T. W. Girdlestone, that the new designs be adopted, and that the dies be prepared.

The lists of varieties admissible in the classes provided for new Roses were placed before the Committee, and it was decided that a clause should be inserted in the schedule to the effect that "new varieties first announced in English catalogues in 1884 or subsequently should be admitted."

The meeting concluded with a hearty vote of thanks to the Chairman, proposed by Mr. G. Paul, and seconded by Mr. Appleby. With a few exceptions the members present at the meeting remained to the dinner, which took place at 6 P.M.

FRUIT AND PLANT HOUSES.

(Continued from page 515.)

In the cultivation of fruit trees and plants of warmer climes artificial heat is important. It is essential that our climate be made equal by artificial means to that the plants enjoy in their native habitats. Upon the different modes of heating I shall not make any lengthened observations; suffice it to state that heating by flues or hot air is obsolete. It answered and still answers where parsimonious considerations are permitted to override those of efficiency and economy. Cheap first costs almost invariably bring dear after costs. The investment of a pound sterling should bring in a per-centage of interest, and will if a profit can be made of its employment; but if it be only half of what is needed to insure profit it must prove a loss in proportion to its inefficiency to insure the purpose intended. Nothing is so dear as poor fuel or an obsolete boiler. It is no use trying to get as much heat out of breeze as coke, or out of coke as coal. Breeze is the refuse of coke, and coke is the refuse of coal. Breeze is not much used, indeed it need not be taken into account as fuel, and wood is so little used that it may be left out. Cinders, the result of the ashpit after the smaller particles have been removed by sifting with a sieve having half-inch mesh, I find pay, especially as I use the sifted material for earth closets. The ashpit ought to be distinct from the dust or rubbish bin. I have two compartments—that for the ashes under cover, so that the work of shifting can be done in unfavourable weather for outdoor work, and the dusthole is exposed, and emptied weekly. The cinders from the house, containing as they do much small coal, are, I consider, quite equal to coke from the gasworks in heating power, and burn in any ordinary boiler furnace.

Gas coke, or the coke resulting from the manufacture of gas, is that mostly used in boiler furnaces, and it answers very well, especially in those that have considerable capacity for fuel, and are constructed upon the slow-combustion or self-feeding principle, so as to need attention at several hours' interval. The principle itself necessitates a large furnace, and a large furnace needs a large quantity of fuel of no very great heating power, or rather of slow ignition or combustion. If we take an ordinary boiler furnace we find it will only need one-fourth the coke to charge it as it would of coal, it being so much lighter and more open, so that whilst we use a quarter cwt. of coal we have only a quarter the bulk of coke of the like weight. We get out of the 28 lbs. of coal not much less heat than we do out of the 28 lbs. coke, with the difference that the coal does not act on nearly the same extent of surface through our system of stoking at distant intervals as the coke does, and in result we do not obtain anything like as much heat from the quarter cwt. of coal as from the quarter cwt. of coke. We get the same heat, but with the coal, owing to the large space in the furnace, it does not act on the surface wanted heated, and it passes off with the air entering to insure combustion by the smoke flue or chimney being cooled by the air entering the furnace but not passing through the fire, therefore not consumed, and if not con-

sumed it is only so much cold air mingling with the heated in the furnace and diminishing its heating power proportionately. Now this is the principle of all heating—viz., the heat concentration on the surface required to be heated, and the way to secure it is to proportion the size of the furnace to the fuel used rather than the surface wanted heated. If we use coal we want a smaller furnace than if we use coke, and we also must have the surface to be heated brought as near to it as possible—in fact into direct contact with it, or directly in the fire. This would point to the coil or pipes passing directly through the furnace or fire as the best system of abstracting heat, and I am not certain that it is not the difficulty being in its application. Direct contact I hold to be of primary importance, or if not that the full force of the products of combustion concentrated on the abstracting surface, for the greater the heat acting on a given surface the more heat we obtain, as the force is in proportion to the circulation, and *vice versa*. For instance, if we concentrate the heat of the furnace on 3 feet of surface instead of 6 feet we more than double the force of the heat and the circulation, consequently obtain more heat off the lesser surface than the larger. This gives a large boiler more power proportionately than a small one, inasmuch as we obtain a larger action of the fire, not really much greater in size in the large than small boiler, on a larger surface, and obtain more direct heat.

Of the forms of boiler that answer these conditions best we have first of all the saddle. It fits directly over—in fact, encompasses the fire—forming the three sides of the furnace, and is brought as near to the fire as is consistent with holding or affording space for sufficient fuel to last under slow combustion not less than eight hours. We have direct contact at the sides, and what heat escapes action there is concentrated on the crown of the boiler, and with a check end we still further obstruct the heat, and all obstructing surface means heat extraction. If we have hollow grate bars we have the fire resting on, surrounded by and obstructed in its passage outward by a surface containing water required to be heated. The saddle, therefore, is a heat-extracting useful boiler, which from its simplicity is not likely to get out of order, and suffers little depreciation through wear and tear.

The upright or conical form of boiler is also useful. The furnace is surrounded by heating surface, the fire must pass over a large surface even in the slow-combustion boiler, and be concentrated upon the crown before the heat makes its exit by the smoke-flue or chimney.

There are modifications of these forms of boiler, the chief object of which is to make the fire or heat pass through alongside and over the outer surface of the boiler, and I pass one verdict upon them—viz., the futility of seeking to utilise what has been wasted in the furnace. In the side flues we heat the bricks more than the boiler, and these passages are so often clogged with soot as to be practically useless.

We come to the blacksmith's mode of heating—thrust the boiler right into the fire or furnace. Instead of the boiler forming the outside of the furnace it is placed directly in it, so that the fire or heat acts upon all its surfaces, the surfaces forming the furnace having great heat-absorbing power, being formed of firebrick and fireclay, and as this is prevented striking laterally or vertically, being isolated from external influences by a cavity filled with sand, we get the greatest heating power. This we have in the tubular boilers, which differ only in having the tubes upright or horizontal. The upright was originated by Messrs. Weeks and the horizontal by Messrs. Messenger, and upon these there have been various innovations and improvements. For heating a large extent of piping the tubular boiler is pre-eminent, but for less than 1000 feet of 4-inch piping I do not consider them suitable; suffice it to state that by diminishing the size of boiler we do not get a surface at all equal to the size of furnace as we do in the larger boilers, and they are not economical, but for heating extents of piping over 1500 feet I consider the tubular unrivalled.

As to form, I have a decided preference for the upright boiler, as this form has more heating power, but it labours under the disadvantage of not being suitable for any or every kind of fuel, as to work it satisfactorily it requires coke. Horizontal tubulars having for the most part check-end waterways are very powerful, and have two advantages over the upright, in that they will burn any kind of fuel, and do not require a deep stokehole, which are very great advantages in places where coke is not readily procurable, and where the water naturally is near the surface and drainage difficult.

For heating 1500 feet of 4-inch piping or less I consider the saddle form of boiler most suitable; whether we have the Cornish Trentham boiler with waterway terminal end, the Terminal End Saddle and Flue, or even Cruciform Saddle or Gold Medal, the principle is the same—viz., bringing the heating surface as near to the heat as possible, and so that it will be concentrated upon it with the greatest force.

The heating power of a boiler is contingent upon the surface exposed to the direct action of the fire and upon the water it contains. If we take a tube an inch in diameter we get four times the heat surface for the same quantity of water as if we employ a 2-inch tube; therefore heat four times the quantity of water, for as is the heat so is the circulation, or it will circulate very much more quickly in the small tubes than in the large. I make no account of indirect heat, only in that the heat is utilised in maintaining or preventing the loss of the direct. It is best utilised in heating, as in the Cornish Trentham, by passing under the boiler, and so warming the cold water before it is acted upon by the direct heat of the furnace. In the hollow grate bars of the Terminal Saddle as well as in the Tubular boilers the water is heated before it is acted upon by the full force of the furnace heat, but the heat in this case is direct, and it must be said greatly auxiliary. Except, therefore, in utilising indirect heat, preventing the loss of direct heat, or in warming surfaces wanted heated which are colder than those exposed to the greatest heat, its benefit is purely chimerical.

Boilers are economical not only in construction but in the way the heat is utilised after it is obtained. The water should have free access in entering the boiler and an equally free passage out, but it must be understood that as soon as it leaves the boiler it is losing heat, and continues to do so throughout the whole extent of the pipes. Some have an idea that a main of large diameter is necessary. Now, just get a 2-inch pipe and give it a sharp incline, and it will carry off as much water as a pipe of double the diameter on nearly a dead level. This of course is due to gravity, and in heating by hot water we have not only gravity but the ascending force of heat. What reason is there to take a 6-inch or 4-inch main from the boiler to the house required heated when the water will travel much more quickly through a 2-inch, and we have only an eighth of the water, with half the extent of radiating or heat-losing surface? These mains, whatever their size, are taken in flues and are bare, therefore losing heat the whole of their length, whereas were they covered with hard felt they would radiate or lose very little; and when we take into consideration the loss occasioned by the needless large flow and return pipes, their exposure throughout the distance between the source of heat and the structure required heating to cooling influence, we have to face a waste of power of a most extravagant kind, which is added to by an oversight in valves to shut off the heat alike from the house and boiler. How often do we see the valves on the pipes just inside the house, leaving it may be half as much piping between the house and boiler without means of disconnection? The water will not rise up the flow, still less the return pipe—i.e., it cannot circulate. Why, it circulates in a kettle, and it circulates in pipes, even in the return pipes after disconnection at the house up to the points of disconnection from the boiler, and this is all waste heat. If the mains pass through houses required heated, then of course these remarks lose their point, but in the case of detached houses they are worthy of consideration from an economical point of view, and the point of disconnection ought to be at or near the boiler. I once had under my charge half a dozen detached houses heated from one boiler, and to have taken the heated water to them in full-sized or 4-inch mains would have required as much surface in connection as the houses required heating surface. More money is wasted in "cobbling" by unskilled hands than is necessary to execute anything in the best manner of the best material. I had a box made, and from this all the flows were taken, and all were 1½ inch, and the valve upon each close to the box. Similar means were taken with the return pipes just before entering the boiler. It answered perfectly. The cold water had free access and the hot free passage out of the boiler. All the pipes ought to have valves—screw valves on the flows and throttle valves on return. If they are worth anything at all the screws will shut off to a drop, and the throttle will effectually check or close the circulation. Hot water will back up the return pipes, hence the need of valves on them.

The next chief point is to have plenty of piping, and as a rule small houses require more piping proportionately than large ones do, and lean-to's require less piping than span-roofs. Then houses required to be kept at a high temperature will bear the water or heating surface hotter than those which need only a temperate heat, as the latter are more susceptible of heat than the former. About half as much heating surface is required for a greenhouse as for a stove, and as a rule for calculating the heating surface needed I think there is none better than allowing a 4-inch flow and return for every 6 feet of width for securing a stove temperature for forced Grapes, Figs, Cucumbers, Melons, &c., whilst half that will suffice for a greenhouse. Height, of course, has much to do with it, but taking the height to be not more than the width squared, I find it answer very well, and is better than making no end of calculation about feet of heating surface required to heat so many cubic feet of air the chief thing being to have too much rather than too

little. Any extra first cost will be more than counterbalanced by the saving in fuel and the results obtained.

As to the best position for the pipes I do not think we can improve upon having them at the front of lean-to's or at the side of spans, being careful only to have them isolated, clear of the walls above the soil, and so that the atmosphere will not be so dried as to seriously affect the plants. If the pipes can be placed so as to diffuse the heat equally all the better, but I have tried it and find that the best results are obtained when they are at the lowest part of the house, and only in the case of wide houses are back pipes in the case of lean-to's, or centre pipes in the case of spans, needed; but in large houses they are wanted, so as to keep up a circulation of air throughout with an equality of moisture, but then the centre or back piping should not be more than one-half that of the front or side.—G. ABBEY.

(To be continued.)



WE understand that a HORTICULTURAL CONGRESS AT PARIS will be held in conjunction with the French National Horticultural Society's Show on May 4th to 9th, 1886.

— IT is announced that THE ROSARIAN'S YEAR BOOK FOR 1886 will be issued shortly, and will contain a photograph of Mr. B. R. Cant, together with the following articles:—"A Symposium of Mildew" (illustrated), "Winning Roses," "The Fortunate Isles and their Roses," "The Rose, and National Rose Society in 1885," "Some Single Roses as Decorative Plants," "Dew of the Ever-living Rose" (a review), "Climbing Roses," and "The Rose Weather of 1885."

— THE ROYAL BOTANICAL SOCIETY OF MANCHESTER have fixed the following dates for their Shows in 1886—Spring Show, 16th and 17th March, and 27th April; National Horticultural Exhibition, 11th June and following days; Rose Show, 17th July; Chrysanthemum Show, 23rd and 24th November.

— "T. S." writes:—"On reading the remarks of our friend "Thinker" on GAS TAR I was reminded of a case which was related to me some time since, and which goes to show that it will spoil the flavour of less delicate productions than Peaches. Gas tar was used in the Potato store to drive away rats, and all the tubers placed in the vicinity of the tar were strongly flavoured with it."

— WE regret to announce the death of MR. ALEXANDER PROTHEROE OF LEYTONSTONE, which took place on the 19th inst., in the eighty-second year of his age. Mr. Protheroe was one of the founders, as he was the head, of the firm of Protheroe & Morris, the well-known auctioneers and nurserymen of Leytonstone.

— WE understand that the post of ASSISTANT DIRECTOR OF THE ROYAL GARDENS, KEW, has been offered to Mr. D. Morris, M.A., F.G.S., the Director of Public Gardens and Plantations, Jamaica. The appointment is in the gift of the First Lord of the Treasury.

— THE annual general meeting of the KINGSTON CHRYSANTHEMUM SOCIETY was held on the 16th inst. in the Wood Street Schools, Mr. Lyne of Wimbledon taking the chair. The balance-sheet was read by the Hon. Secretary, Mr. T. Jackson, and from this it appeared that the total balance at the beginning of the year was £105 2s. 9d. The subscriptions amounted to £110 6s. 6d., and the takings at the Show to £92 10s. 6d.; these with other minor items and the balance brought forward gave a total fund of £323 5s. 3d. The disbursements, including prizes, came to £212 5s. 9d., thus leaving a balance of £110 19s. 6d. The receipts for the year exceeded the expenditure by £5 16s. 9d., which, considering they had two bad days for the Show, Mr. Jackson considered was exceedingly satisfactory. The other business transacted by the re-election of Mr. F. A. Davis as President, Mr. Drewett as Hon. Treasurer, Mr. T. Jackson as Hon. Secretary, and the Committee as follows:—Messrs. Attrill, Bates, Child, Hardy, King, Lyne, Moorman, Orchard, Puttock, Rolt, Shepherd, Slade, and Woodgate, the new members being Dr. Walker and Mr. Glover.

— IN his article on BOUVARDIAS on page 537 last week Mr. A. Pettigrew meant to say that some of the plants produced corymbs almost as large as "Lilacs," not as "Lilies."

— THE CRYSTAL PALACE HORTICULTURAL SHOWS to be held in 1886 are fixed for the following dates:—Spring Exhibition of Plants and Flowers, March 26th and 27th; Great Summer Exhibition, May 21st and 22nd; Grand Exhibition of Roses, July 3rd; Fruit Exhibition and National Dahlia Show, September 3rd and 4th; Great Autumn Fruit Show and Grand Chrysanthemum Exhibition, November 5th and 6th. Schedules will be ready early in January on application. The date of the Potato Show is not yet fixed.

— MESSRS. THOS. CHRISTY & Co. request us to mention that the fire on the premises they occupy at No. 6, George Yard, Aldgate, on the night of the 12th, has not caused any interruption to their business, as all orders are being supplied from their warehouse at No. 2, George Yard.

— MESSRS. J. LAING & Co., Forest Hill, send us a coloured plate of "ROYAL TUBEROUS BEGONIAS," which represent some of the latest improvements amongst these useful plants. All the flowers are of great size, the centre one (Queen Victoria) being $7\frac{1}{4}$ inches by $6\frac{1}{2}$ inches. They are also distinguished by the broad rounded petals and their brilliant colours. The varieties portrayed are as follows:—Queen Victoria, rich scarlet; Prince of Wales, dark scarlet; Princess Victoria, white edged with deep rose, very pretty; Prince Albert Victor, orange scarlet with a white centre; Duke of Edinburgh, maroon striped, one of the darkest yet obtained; Princess Louise, pure white; and Duchess of Edinburgh, orange tinged with red on the edge.

— IN Mr. Major's collection of curios at Cromwell House, Croydon, STAPELIA GIGANTEA has been flowering during the last fortnight. The flowers are of great size, measuring 5 inches across from the points of the segments. These, however, recurve much the same as in *Lilium lancifolium*. The flowers of the Stapelia are deep purplish brown, are covered with silvery hairs half an inch long. The appearance is very remarkable, and this species is so rarely seen as to render it noteworthy.

— WE have received a letter addressed to Mr. F. C. BARKER, who contributed a note on Chrysanthemums a fortnight ago. This letter shall be forwarded if our correspondent sends us his full postal address.

— WE are informed that Mr. R. P. PERCIVAL of SOUTHPORT died on the 14th inst. of congestion of the lungs at fifty years of age. Mr. Percival has become well known in the horticultural world as an experienced amateur cultivator of Orchids, and at his residence, The Cleavelands, Birkdale, Southport, he had one of the best collections in the north of England. Cattleyas form an especial feature, and when describing the garden on page 52 of our issue for July 17th, 1884, we gave an illustration of a handsome specimen of *C. Sanderiana*, which had eighteen flowers, each 9 inches in diameter. Mr. Percival's name is commemorated in *Cattleya Percivaliana*, now included in most large collections of Orchids.

— PARTICULARS of a SALE of VALUABLE ORCHIDS in NEW YORK are given by the December number of "Vick's Monthly Magazine" as follows:—The Orchids were the property of the late Mrs. M. J. Morgan, Madison Square, and the collection originally cost about £40,000. In addition to the American nurserymen present there were agents representing the principal English firms, the following being the largest prices realised. A plant of *Vanda Sanderiana* was bought for £180, one of *Cypripedium Morganianum* for £150; *C. Stonei platytenium* brought £90, and other *Cypripediums* realised various sums from £20 upwards. A specimen of *Vanda Lowi* was sold for £80, and *V. Batemani* for £20. *Cattleya exoniensis* sold for £50, £48, and £26, *C. labiata* for £20, and *C. Skinneri* for £40. This is one of the most important sales that has been held in America.

— A DINNER to commemorate the first PORTSMOUTH CHRYSANTHEMUM SHOW was held last week in the Royal Albany Hotel, Portsmouth. The chair was occupied by Mr. F. Power, T.C., the popular Secretary, the vice-chair by Mr. G. Ellis; and amongst those present were the Mayor (A. S. Blake, Esq.), Alderman W. D. King, J.P., J. Moody, Esq. (ex-Mayor), including most of the Town Council of the Borough and principal tradesmen of Portsmouth and Southsea. The usual loyal toasts were proposed, and in the course of several speeches which followed, Mr. F. Power stated that it was intended to offer a Challenge Cup value £25 next year for thirty-five cut blooms. Mr. E.

Molyneux, in proposing "The Exhibitors," remarked that he would like to see amateurs and cottagers compete more freely than at present, and he thought with suitable encouragement they would do so.

— WE have received the following books, which we shall notice in due course:—"Animal Life on the Farm," by Professor Brown; "The Golden Gate and Silver Steps," by Shirley Hibberd; "The Praise of Gardens," by Albert F. Sieveking; "The Practical Poultry Keeper," by L. Wright.

— GARDENING APPOINTMENTS.—The following have been made through Messrs. John Laing & Co., Forest Hill Nurseries, S.E.:—Mr. John Lawrie, as head gardener to Colonel Haworth Booth, J.P., D.L., Hull Bank House, near Hull; and Mr. A. McLeod, as head gardener to C. Stead, Esq., Nottingham Hall, Kent.

— WE have received from the "South" Publishing Company Fleet Street, specimens of ORANGES GROWN IN FLORIDA, which have just been received from Jacksonville *via* New York. The great impetus that has of late years been given to the cultivation of the Orange in Florida makes this importation specially interesting, as showing what we may expect from this new field. It is not that the cultivation of the Orange in Florida is at all new that the interest attaches to it, but that the development of it has of late years been taken up with so much energy, and as an investment of capital it has proved highly remunerative. The condition of the fruit showed that it had been gathered before it was ripe, and that the circuitous route by New York did not add to the ripening of it. If, however, the fruit was allowed to ripen in the same degree as that grown in St. Michael's or Valencia, and shipped direct from Jacksonville or some other port in the South, so that it would arrive in the same condition as fruit from these parts, there can be no doubt that a large trade might be done.

— MR. W. BARDNEY observes, "The bright scarlet ZONAL PELARGONIUM JOHN GIBBONS is superior to any we have for flowering during the winter in a temperature of 50°. We grow about 1000 plants for winter flowering, and this is without doubt the most showy and profuse of all. It makes trusses of a large size, which for brilliancy of colour are unsurpassed; and all who do not grow this variety should obtain it. For a long time we thought *Vesuvius* superior to any other as a profuse and continuous-flowering variety in the temperature named, but even this valuable variety is insignificant by the side of John Gibbons. It may be stated that cut-back plants, or those two or more years old, flower more profusely than young plants raised from cuttings in spring. Young plants might, if the season was not good, prove disappointing. I have grown all the new white-flowered varieties that have been sent out since *White Vesuvius*, but none of them can be compared with that variety for profuse flowering. The flowers are neither so well shaped nor pure in colour as *Eureka* and others, but it produces a mass of flowers in the temperature named, which the others will not do, in fact we are discarding all other white varieties for winter flowering."

— THE Liverpool Horticultural Association this year offered their certificate and first prize for an essay on THE CULTIVATION OF THE CHRYSANTHEMUM, the conditions being, that all competitors must be under-gardeners and members of the Society, and that the essay should take about twenty minutes to read. The winner of this prize is Mr. John Breen, Spital Hall Gardens, Cheshire, who on Saturday evening last, at the Association's usual meeting place, Free Library, William Brown Street, Liverpool, read before a large attendance of members his paper, which was a clear, intelligent, and detailed account of how to proceed with the culture, the wants, the enemies, of "Liverpool's favourite flower." The essayist briefly described its management from the cutting, the various potting operations, and the suitable times and composts for each, staking, feeding, housing, and other important items for the production of exhibition blooms and plants. An animated discussion followed, in which Messrs. T. White, A. R. Cox, W. Tunnington, R. G. Waterman, and others took part. The various opinions given by noted prizewinners as to temperature for striking, suitable soils and manures, and selecting the buds, proved that the Chrysanthemum can be grown under circumstances and modes of treatment differing to a great extent, but yet with satisfactory results. The arrangement of exhibition cut blooms, and the judging of the same, were also criticised in a friendly spirit, and added to the instruction of those present. Mr. A. R. Cox exhibited a box of cut blooms, which were exceedingly good for so late in the season. The varieties were—Boule d'Or, very fine; Meg Merrilees, F. A. Davis, Fabian de Mediana, Mabel Ward, and Princess Teck.

MR. W. T. THISELTON DYER, C.M.G., F.R.S.

A FEW weeks ago we published a portrait and sketch of the life of Sir Joseph Dalton Hooker, the retiring Director of the Royal Gardens, Kew, and we now introduce to our readers Sir Joseph's successor, Mr. W. T. Thiselton Dyer, whose name is well known in the annals of botany and horticulture. It was generally expected that Mr. Dyer would have been called to occupy this important position. His devotion to science, and especially natural science, his notable antecedents, and his ten years' probationary work as Assistant Director of the gardens, eminently fitted and recommended him for the appointment. The directorship of Kew is a post that requires of the holder a special training. It is one which no mere botanist, any more than no mere gardener, is capable of filling satisfactorily, but it requires a judicious combination of the two. These qualities are well met in Mr. Dyer, who, though eminently a man of science, has also a broad practical side which can be turned at any time in the direction where it is required. He knows that science without practice is dead, and that it is only when applied that it is really living.

Mr. Dyer was born on the 28th of July, 1843, in Westminster, with which his family formerly held some official connection, but his early life was spent in Mayfair, where his father practised as a physician. In his youth he suffered from indifferent health, and in consequence made long visits to the house at Edmonton (then a rural village) of his maternal grandfather, Thomas Firminger, LL.D., a man of considerable scientific attainments, who had been for fourteen years Principal Assistant at the Greenwich Observatory when Dr. Maskelyne was Astronomer Royal, and he was an intimate friend of Sir James South and other scientific men of that time. His mother was an ardent collector of British plants, and it is to her that he owes the formation of his botanical tastes, and we have heard Mr. Dyer say that one of his earliest recollections is trying to identify with her from Sir William Hooker's admirable "British Flora" the species of *Chenopodium* and *Atriplex*, which abound in Middlesex. His uncle, the Rev. T. A. Firminger, long resident in India, was the author of a well-known manual of gardening for India, which has run into three editions. All the associations of his youth were therefore with mathematics and botany; and his father being a member and for some years Chairman of the Apothecaries' Society, it was his habit to carry home for him specimens of medicinal plants which were sent for the weekly examinations from the Chelsea Botanic Garden. This circumstance no doubt laid the foundation of the peculiar interest which Mr. Dyer has for pharmaceutical botany.

Mr. Dyer's early education was acquired at King's College School, and it was at that time that the beginning was made of introducing science teaching into the school course. Lectures on Chemistry and Physics were given by Mr. Charles Tomlinson, F.R.S., and he has still a keen recollection of the pleasure and interest he derived from them.

During the latter part of his school life he bestowed most attention on mathematical studies, and left with the first-class mathematical scholarship in 1861, the present Astronomer Royal being at the time somewhat his junior in the school. Here, too, he contracted a friendship with Dr. Trimen, now the worthy successor of Dr. Thwaites as director of the Royal Botanic Garden, Peradeniza, Ceylon, through the discovery in those school days of their common interest in botanical tastes.

On leaving school Mr. Dyer was undecided whether to go to Cambridge or commence medical studies. Ultimately choosing the latter, he entered the medical department of King's College in 1861 as Warneford scholar, and attended with great enthusiasm the lectures of Lionel Beale, who then stood in the front rank of the revived school of minute anatomy in England. He, we believe, was one of the first teachers who attempted to demonstrate, with an ingenious form of travelling microscope, the actual facts of histology to his class. All this is done now with admirable effect in the laboratory, but Lionel Beale's attempts were, in their way, a revolution in teaching. William Allen Miller was then fully occupied with the new spectrum analysis, and freely introduced the new subject into his course; and to the clear and systematic teaching of his old friend Professor Bentley he owes his first accurate technical knowledge of botany.

In 1863, his health having given way, by his father's advice he abandoned any farther attempt at studying for the medical profession. In the autumn of this year a Junior Studentship at Christ Church, Oxford, was offered for open competition, which he had the good fortune to obtain, a success he owed in great measure to his medical scientific instruction, and also to the diligent study of the late Dr. Carpenter's "Comparative Physiology," which is now generally recognised as having led the way for the modern methods of biological teaching.

At Oxford Mr. Dyer resumed mathematical study, but he had lost ground too much to be able to accomplish the whole course of University reading, and he was quite content to take a second class in moderations in 1865, and a second class in the final Mathematical School in 1867. The teaching of Professor Henry Smith in modern geometry, and of Sir Benjamin Brodie in modern chemistry, are features in his university life which he can always look back to with the keenest pleasure. After taking his B.A. degree in 1867, he obtained a First Class in the School of Physical Science, and then left the university.

Shortly afterwards his father died rather suddenly, and he was thrown very much on his own resources. His first appointment was that of Professor of Natural History in the Agricultural College of Cirencester, and here his residence for two years among the Cotswold Hills was in every way of great benefit to him. Elected a member of the Cotswold Club he joined in excursions over a country which displays every geological formation from the Lower Tertiary to the Upper Silurian, and this enabled him to see an epitome of the world's history which is perhaps not to be found elsewhere. To his friend Mr. Church, who was then

Professor of Chemistry at the College, and is now occupying a similar position in the Royal Academy, Mr. Dyer owes in no small degree an insight into the chemistry of vegetable nutrition. With the help of an old Kew man he had charge of a small hotanic garden with an excellent collection of British plants. During his stay at Cirencester in 1869, Sir Joseph (then Dr.) Hooker, though knowing little of him personally at that time, offered him the Directorship of the Royal Botanic Garden of the Mauritius, on the death of Dr. Mellor, in Australia; but on account of the delicate state of his health he regretfully declined it. In this year he edited, with his friend Professor Church, the English edition of "How Crops Grow," and published with Dr. Trimen the "Flora of Middlesex," for which they had been steadily collecting material since their school days.

In 1870 Mr. Dyer became Professor of Botany in the Royal College of Science for Ireland in succession to Dr. Wyville Thomson. Mr. Dyer says, "I owe a great deal to my residence in Dublin, especially to my friend Mr. William Archer, F.R.S., Secretary of the Dublin Microscopical Club, and now Librarian of the National Library of Ireland. He introduced me to the fascinating microscopical Fauna and Flora of the Irish bogs. But, above all, I must ever commemorate the memory of Dr. David Moore, of the Royal Botanic Garden, Glasnevin, near which I took up my abode. He allowed me free access to all its treasures, and a larger experience only makes me to more fully appreciate the skill to which difficulties of cultivation seemed to have no meaning."

Part of his official duties in Dublin was to deliver a short course of popular lectures. Reports of these appeared in some of the Irish papers, and were reprinted in the columns of the *Gardeners' Chronicle*. This circumstance brought him to the notice of the Council of the Royal Horticultural Society, from whom he received an invitation to join the staff as Professor of Botany, with a seat on the Chiswick Board of Direction. This offer was accepted, and he returned to London in 1871. At the same time he was asked by Dr. Hooker to assist him in the "Flora of British India," and he worked up the *Dipterocarpeæ* and a few minor orders contained in the first volume. Soon after this the affairs of the Royal Horticultural Society became involved by the partisanship of rival interests in the Society. The purely horticultural element of which it was composed found that a strong party existed, consisting chiefly of the residents in the neighbourhood of South Kensington Garden, who were desirous of converting the Society to their own uses, and instead of maintaining it as a society for the advancement of horticulture, they endeavoured to alter its character, and succeeded for a time in expelling the old Council and appropriating it as a place of amusement and recreation. In consequence of this the Society became disorganised, and changes were made which for a time reduced the administration to the level of a committee of management of a London square; in this catastrophe Mr. Dyer was, of course, unable to fulfil all the hopes with which he entered on his work at South Kensington. "But," says Mr. Dyer, "I certainly owe much to my periodical visits to Chiswick, and I saw under the skilful management of Mr. Barron the side of horticulture which supplemented what I had seen at Glasnevin. The meetings of the Chiswick Board brought me into intimate relationship with the Rev. M. J. Berkeley, Dr. Hogg, and Mr. Moore, and in such company it was an advantage to be inexperienced."

In 1873 Mr. Dyer was invited by the Science and Art Department under which he had worked at Dublin to conduct a course of instruction to teachers in what is now the Normal School of Science at South Kensington. In this he was assisted by his friend Mr. Lawson, the late Professor of Botany at Oxford, and now director of the Cinchona plantations of the Madras Government. They had the use of Professor Huxley's convenient and well-appointed laboratory, and here they entered upon a course of instruction which embraced the leading morphological facts of every important type in the vegetable kingdom; in fact, they resolved to adopt exactly the same plan of work as Professor Huxley in his own teaching had found convenient for the animal side of morphology. This we believe was the first time that any attempt had been made in this country to give an extended course of botanical instruction of this kind. This was an experiment which was repeated at regular intervals during the next few years. It gradually took a more systematic shape, and first at the hands of Mr. Bower, now Regius Professor of Botany in the University of Glasgow, and then by Dr. Scott, it is likely to settle down to a permanent system of instruction.

In 1875 the Government revived the office of Assistant Director of the Royal Gardens, and Mr. Dyer was offered the appointment. Having taken up his residence at Kew two years previously, he had opportunities of becoming acquainted with the work of the establishment, and he accepted the offer, though with some misgiving, as it seemed to close the door finally to a teaching career, which he then had most at heart. What the schools may have lost in this resolution of Mr. Dyer the public service has gained, for we know of no one who could have more efficiently administered the department during the time he held the post of Assistant Director than he has done. We now look forward with confident expectation to the future, feeling assured that Her Majesty's Government have made an appointment which will tend to sustain the reputation of the Gardens justly acquired under the masterly direction of the two Hookers—father and son—and now confided to the son-in-law of the latter.

Mr. Dyer is a Fellow of the Royal Society, and in consideration of his admirable management of the Colonial Department of the Kew establishment, Her Majesty conferred upon him the distinction of Companion of the Most Distinguished Order of St. Michael and St. George.

SOME account of the great establishment placed under Mr. Dyer's

direction will be appropriate now, and we therefore give a review of its history as published in the Official Guide-book.

"About the middle of the seventeenth century the spot that now forms the Royal Gardens of Kew, together with a residence called Kew House, belonged to R. Bennett, Esq., whose daughter and heiress married Lord Capel. Kew House and Grounds then passed into the hands of Mr. Molyneux, who was secretary to King George II. when Prince of Wales, and who married Lady Elizabeth Capel. The Prince of Wales, who was son to George II. and father to George III., admiring the situation of Kew House, took a long lease of it from the Capel family about the year 1730, and began to form the pleasure grounds, then containing about

and of Mr. Allan Cunningham to Australia; the expeditions of Bowie and Masson respectively to Brazil and the Cape of Good Hope—all these enriched the gardens of Kew with the vegetable productions of the southern hemisphere to an extent unparalleled before; besides which, other collectors were employed during a long period in various countries, and the produce of their researches was deposited at Kew. On various occasions, especially during the life of King George III., many houses, stoves, and pits were erected; but on the demise of that monarch and of Sir Joseph Banks, who died shortly after the King, the establishment suffered from want of Royal and scientific encouragement. During the reigns of George IV. and William IV. the botanic gardens retrograded,



Fig. 84.—MR. W. T. THISELTON DYER, C.M.G., F.R.S.

270 acres. They were completed by his widow, Augusta, Princess Dowager of Wales, who delighted in superintending the improvements, then conducted upon a most extensive scale. The exotic department of this garden was commenced by the same Princess and much favoured by the Earl of Bute, about the middle of the eighteenth century. Many of the finest foreign trees were contributed by Archibald, Duke of Argyll (styled by Horace Walpole the Tree-monger), who sent them from his once richly stored garden at Whitton, near Hounslow.

"About the year 1789 His Majesty George III. purchased Kew House, and Queen Charlotte evinced much interest in the increase of the collection of plants. Under such auspices, and aided by the enlightened patronage of Sir Joseph Banks, it was only to be expected that the gardens of Kew should become celebrated all over the world.

"The voyage of Capt. Cook and Sir Joseph Banks round the world; those of Capt. Flinders and Mr. Robert Brown (Botanicorum Princeps),

and matters must have been much worse but for the able exertions of Mr. Aiton, and of his foreman (the late Curator), Mr. John Smith, A.L.S. Throughout the country an opinion existed, which soon began to be loudly expressed, that either the gardens should be entirely abolished or placed upon a very different footing, and rendered available as a great popular yet scientific establishment for the advantage of the public.

"Government was, happily, ready to respond to this latter feeling, and in 1838 the Lords of Her Majesty's Treasury appointed a committee to inquire into the management, condition, &c., of the Royal Botanic Gardens. The result was in May, 1840, a return was made to the House of Commons in the shape of a report by Dr. Lindley, who, at the desire of the Committee, had surveyed the gardens in conjunction with two well-known practical gardeners.

"Many useful suggestions offered by Dr. Lindley were acted upon, especially the following:—A national garden ought to be the centre

round which all minor establishments of the same nature should be arranged; they should be all under the control of the chief of that garden, acting in concert with him, and through him with one another, reporting constantly their proceedings, explaining their wants, receiving their supplies, and aiding the mother country in everything that is useful in the vegetable kingdom. Medicine, commerce, agriculture, horticulture, and many valuable branches of manufacture would derive much benefit from the adoption of such a system. From a garden of this kind Government would be able to obtain authentic and official information on points connected with the founding of new colonies. It would afford the plants there required without its being necessary as now to apply to the officers of private establishments for advice and assistance.

"The limit of the garden not being exactly defined where it met the precincts of the residence of the King of Hanover, permission was obtained to include within the botanic garden all the ground immediately about the conservatory and orangery, which greatly enhanced the beauty of the view and added between three and four acres. Soon after application was made to the Queen for a grant of land from the contiguous pleasure ground, which might afford the means of forming a pinetum (or a collection of plants of the Pine tribe) and of erecting a Palm stove or tropical house worthy of the place and the nation. Her Majesty was graciously pleased to permit a portion of the pleasure ground, comprising about forty-seven acres and including a piece of water, to be devoted to these purposes, and enclosed within a light wire fence, which now separates the botanic gardens from the pleasure ground.

"Again, in the winter of 1846-7 orders were received for abolishing the Royal kitchen and forcing gardens of Kew as such, and incorporating them with the botanic garden, thus adding fifteen more acres to the scientific portion of the grounds (seventy-five acres in all)."

The gardens themselves are now so well known that it is unnecessary to refer to them in detail, for during the last ten years they have been visited by some millions of people, the total on some holidays rising to 50,000 and 60,000 in one day. This popularity, considered in conjunction with the scientific and what may be termed the commercial work performed in the establishment, is evident proof that the efforts of those in charge to render it of national interest and importance are fully appreciated. There has for some time been a broadening of the system upon which the gardens are managed, and in regard to the culture of the large collections the advance has been great. In an establishment open to the public there are necessarily many difficulties to contend with, especially in the cultivation of the indoor plants; but it has long been reasonably thought that there was no substantial reason why, with the appliances and labour at command, the plants should not be as well grown as in private gardens. In recent years considerable efforts have been made to effect this, in which the Director and Assistant Director have been ably assisted by the Curator, Mr. John Smith, and a competent staff. The result is seen now in the generally satisfactory condition of the collections, and certainly never in the history of the gardens have the plants been more healthy.

The extension of the collection has also received careful attention, and by exchange or purchase, large numbers have been added in the past few years. A well-judged liberality in sending the foremen of the principal departments on tours to the leading botanic gardens and nurseries, both at home and on the Continent, has similarly resulted in important additions, which have increased the scientific interest of the gardens. Not the least of the matters that have received the earnest consideration of the authorities has been the improvement of the young student gardeners, and every facility has been afforded them of gaining knowledge by means of numerous courses of lectures and an excellent library.

FERNS—THEIR HISTORY AND HABITATS.

[A Paper read before the Paxton Society by Mr. J. G. Newsham of Sheffield.]

POSSESSING myself a strong desire to become fully acquainted with the habits, peculiarities, and the natural abode of Ferns, it has also always been a source of pleasure to reveal to others that which I have gleaned. I propose to give in a brief form the result of my observations bearing upon the various strata and soils which are most productive of Ferns. At the same time, I shall endeavour to convey the observations made by others, who, from their more extended travels and perhaps closer investigation, have a higher claim to authority upon the subject.

It may not be generally known that Ferns claim precedence in the history of this earth over other plants which adorn our greenhouses and stoves, except the Pines and Palms. They are the oldest inhabitants of the earth, the first productions of the rocks upon which we live. To man we are not indebted for their history, but to the rocks themselves. They give us indisputable proof of the existence of Ferns long before man existed to cultivate or even to admire them. I may be pardoned, I think, if I digress a little by referring to their geological history.

I shall therefore carry you back to that period in the pre-adamite ages, which most geologists term the fourth day's work of the Mosaic account of the creation. This period has undoubtedly been the great Fern era. Writers tell us that the earth at that time was thickly mantled with Ferns, Pines, and Palms, and from the present existing evidences there can be no doubt that it was a period of luxuriance in foliage, which all

lovers of Ferns might well wish to have beheld. It was a period of a warm moist atmosphere, a period upon which only a very moderated light was shed upon the earth. The soil, if soil it could be called, was simply composed of sandy gritty substances, which through the action of the waters had been lodged in crevices and fissures of rocks, or washed into the valleys. No wonder, then, that with all these advantages Ferns flourished. And that they did flourish, and for a long period too, is abundantly proved by the productions of the various strata which have been from time to time revealed.

Those who have given their attention, casually or otherwise, to this pleasant study of the time when the earth was undergoing the many various changes to which it has been subjected in order to complete it for man's abode must have been struck with amazement at the rapid and continual growth of vegetation which is supposed to have eventually formed our present coal measures. Immediately above the coal seams we find innumerable specimens of Fern fossils. Many of them are very conspicuously imprinted upon the hard-pressed gritty substances, which through lapse of time have been converted into a kind of slaty coal. To Fern lovers this is a notable page in the great book of Nature. Dr. Buckland beheld in the coal mines of Prague "festoons of graceful foliage flung in wild profusion over every part of the walls of the mines; scaly stems and bending branches, with their delicate foliage were spread out in coal black hues on the light ground of the hardened lime muds. The vegetable forms of extinct trees, thus preserved in beauteous profusion, have become the faithful historians of times long gone by, their delicate leaves and fine fronds laid out as distinctly as a botanist could spread out his treasured plants on a sheet of paper." Although we consider our present Ferns beautiful and delicate in form, yet they will not bear comparison with the Ferns of the pre-adamite ages. The Tree Ferns of New Zealand, Brazil, Norfolk Island, and other parts are the only representatives of the gorgeous fronds and tall trunks of the ancient Fern period. There is little doubt that myriads of Ferns grew then the like of which we do not now possess. It may be, perhaps, of some interest to you to observe what rocks were then most productive of Ferns, and the comparison they bear with the rocks of our present time. In the primary rocks not a vestige of vegetable life can be traced, owing no doubt to the want of moisture at that time. Neither do we find at the present time that granite and mica slate produce any speciality. Upon these formations we find but few plants which appear to be natives of these strata, and upon which I shall remark shortly. We find in the recesses of earth various Ferns of the common order growing profusely in these districts, but they are mainly those Ferns which owe their existence to the accumulations of rich vegetable soil.

In the transition rocks we do find traces of extinct Ferns. The yellow sandstone, and red sandstone, and grey fossil sandstone all contain evidences of vegetable life. Visit our sandstone districts at the present time and you will find luxurious growth, especially upon the old red sandstone. It is upon this formation that our stoutest *Polystichums* and most robust *Athyriums* are found. Take, for example, Heath's Fern Paradise, Devonshire. Perhaps in no other county do we find its equal. Admitting the fact that the climate may have a great influence upon this southern extremity of the British Isles over other sandstone districts, still it testifies to the rich production of the strata under favourable circumstances. In fact, I may almost affirm that by far the greater portion of our Ferns of tall and vigorous growth at the present time are the inhabitants of those districts which abound in sandstone.

In the mountain limestone we have three layers or beds. It is the topmost layer in the coal measures that we find such a large variety of fossil Ferns. These are mainly Ferns of less vigorous growth, but although unassuming in their dimensions and of humbler habit, they were infinitely superior in texture, design, and variety. The Ferns we find upon our calcareous districts take very much after those found buried in the mountain limestone, except in variety. Small, yet neat and finely designed, they are more ornamental than their brethren of the sandstone ranges.

The secondary rocks, those known as the Wealden group, furnish us with the remains of Ferns of gigantic dimensions, Ferns which inhabited the then marshy lands and swamps, Ferns which must have assumed the proportions of trees of great height; a very large number of Palms, which for size would not be credited at the present time were it not for the remains which have been discovered and which speak for themselves. Our *Osmunda* is but a mite compared with its forefathers. Our present male and female Marsh Ferns are very poor representatives of these early inhabitants of boggy lands. A very consider-

able amount of decayed vegetable matter (no doubt the remains of ages of Ferns which grew and died away in quick succession) must have existed to support the massive roots of these primeval giants. Still, if we compare our present productions of bogs and marshes with our existing varieties of higher birth or elevation, the comparison is certainly in striking contrast with those of their progenitors.

I will now refer to the modern history of Ferns—that is, such as we are able to relate, for I can assure you that until very recently, say the last century, the information to be obtained has been very limited. The ancient Greeks make reference to Ferns, and, I believe, are the first writers who notice them, and then only as medicinal herbs. The only distinction which was then noticed, or which was believed by them really to exist, was the “Male and Female” Fern. Whether the *Filix-mas* and *Filix-fœmina* of our authors were the two referred to by these ancient writers I cannot positively say, but I have no doubt that we owe our present popular names to those worthies.

It was not until the latter part of the sixteenth century that Ferns began to attract special notice. At all events, some attempt at classification was made, and although the discovery of their organs of production was not made manifest until the end of the eighteenth century (which discovery has since then given rise to a correct adjustment of their various classes), yet to these early authors, Ray, Gerard, Parker, Lyte, and others we owe the first not unsuccessful attempt to remove the confusion which surrounded them.

The first seedlings of which we have any record were raised in the year 1789 by Lindsay of Jamaica and by Fox of Norwich. This is rather a singular coincidence, that about the same period though in countries so far distant two persons should have succeeded in making the discovery, and of inaugurating the ultimate success in the art of propagation. I should occupy too much time by entering into a detailed statement of the history of each of our separate species. It will be quite sufficient to remark that the popularity to which graceful plants has reached during the present century is ample evidence of their deserving merits. You find them everywhere—in every conservatory, in every aquarium, in refreshment rooms, in workshops, adorning the halls and entrances to public buildings, places of amusement, and, last but not least, lending a charm to tasteful designs and casements of the cottager’s window.

(To be continued.)

JUDGING FRUIT.

THERE are, as has been already observed, two or three points in connection with this subject which are fairly open to discussion. 1st, Should all Apples or Pears be ripe when exhibited? When ripeness is not specified it is desirable that judges in Pear and Apple classes should make it a prominent point in giving their decisions? Grapes, Peaches, Melons, and all fruits which attain their highest state of perfection only when allowed to remain on the tree or plant till ripe should, for obvious reasons, be perfectly ripe when placed on the exhibition table; but in respect to Pears, Apples, and all similar fruits which do not, as a rule, ripen on the tree, “ripeness” should not, unless specified in the schedule, be made an element in judging them, otherwise our autumn exhibitions of these special fruits would soon become poor indeed from the exclusion of the later and most valuable varieties, while probably the inferior kinds would gain all the prizes, because exhibitions cannot be conveniently held at a later period of the year, and shows would thus lose considerable interest, because many valuable varieties would scarcely ever appear on the exhibition table at all.

In respect to uniformity in collections of Pears and Apples I would approve and by all means obtain as much uniformity as possible in the fruits which compose each separate dish, but I would carry the rule no further, lest by so doing collections should be injured by excluding the choicest because possibly the smallest varieties. I would rather judge each dish on its own merits, having special regard for fine examples of the choicest varieties, whether small or large kinds, instead of looking for uniformity over the whole collection.

Some objections have been raised as to the propriety of committees granting extra, or, it may be, consolation prizes when, in their opinion, the judges have not given correct decisions. It would assuredly prove injurious and probably destructive to horticultural shows if such a course was frequently or erroneously adopted; but granted a mistake has been made, and judges, like other men, are but fallible, hence the mistakes which do sometimes, though happily not often, occur, not only by judges in horticulture, but also in agriculture and also by judges of men. This being so, would it be right or even wise to allow the error to remain unrectified, and so permit the worthy to go unrewarded or the innocent to suffer? or would it be just and more wise to endeavour to make amends to the meritorious or the innocent? If so, by whom? Which is the proper court of appeal? and who the fittest arbitrators? The judges themselves cannot with propriety reverse their own decisions, nor would it conduce to the generally good and kindly feeling which happily exists amongst gardeners if others were engaged then and there to condemn or

confirm the awards, and to postpone or refer the decisions to a future tribunal as in Courts of law, would, for obvious reasons, be unfair and impracticable. Under these circumstances I cannot help thinking that the fittest arbitrators are those gentlemen who form the committee. They can at once, without allowing time to change the circumstances, adopt such means as will in their opinion best rectify the error.

Moreover, are not the judges paid for their services by the committee, and so, for the time being, are they not virtually the servants of the committee? He, being master, is not the committee morally and legally justified in correcting any mistakes which, in its opinion, have been committed by its servants? and what is equally certain and most desirable is that the committee can best do this with the least possible degree of irritation to all parties concerned. Discretion and discrimination are most essential qualities in such cases, and fortunately the gentlemen who form horticultural committees may fairly claim their proportionate share of them.—T. CHALLIS.

NEW ORCHIDS OF 1885.

SOME reference was made last week to the number of Orchids certificated this year, and it might be reasonably expected that amongst so many there would be a good proportion of beautiful novelties. This is the case, but, at the same time, owing to the number of improved varieties of older types shown, there are not many of what might be termed startling distinctness. We cannot expect such surprises as *Vanda Sanderiana* every year, for the native haunts of Orchids both in temperate and tropical regions have been so thoroughly explored that it is only by a lucky chance collectors now discover a species exceptionally distinct from those in cultivation. No doubt Professor Reichenbach could tell us of many grand Orchids that have yet to be introduced, but the principal efforts of importers now seem to be to obtain shiploads of particular species that are in much demand. This process has been carried on for several years, and will have the effect of exterminating some forms in their home countries, and when the supply becomes exhausted the prices here will rise proportionately, as has already been experienced in several cases. There is, however, another matter to be considered, and that is the awakening of some of the native Governments to the value of the enormous quantities of plants annually taken from their shores, and the result is that some have imposed a heavy tax on all Orchids shipped from their ports. This will, if generally practised, undoubtedly have a greater deterring effect upon the wholesale importers than anything else. Of course we must fully recognise the enterprise of firms who employ so many collectors and invest such large sums in the speculation; but the question is whether they do not gain a temporary benefit at the cost of a permanent injury to themselves and the trade generally.

There is one mode of increasing the diversity of Orchids which does not appear likely to be carried to an undue extent, and that is the raising of hybrids and fine varieties of well-known species. It is therefore satisfactory to notice the increased attention being paid to the subject. Nearly all the largest and most beautiful genera have yielded crosses, though a few, as the *Odontoglossums*, still prove too much for the skill of hybridists, and others, as the *Masdevallias*, have as yet given but poor returns in that respect. The genus *Cypripedium* has been the most prolific. The *Dendrobium*, *Cattleya*, *Lælia*, *Aerides*, *Calanthe*, *Phaius*, and *Zygopetalum* have all afforded some examples of artificial crossing; while of the *Phalenopsis* and *Odontoglossum* forms have been introduced that may be safely regarded as probable natural hybrids. It is strange that in such a large and varied genus as the *Oncidium* no crosses should have been obtained, though it might be supposed that there is a good field for experiment. Several handsome hybrids have been brought into public notice this year, and to these a few words may now be devoted.

Hybrid Calanthes.—Three charming *Calanthes* have been honoured with certificates this year, and all are hybrids, an important addition to the six previously obtained. Two of these novelties—*C. Alexanderi* and *C. Cooksoni*—were shown by their raiser, Norman C. Cookson, Esq., Wylam-on-Tyne, who has also secured several other crosses in the same genus. *C. Alexanderi* is the result of a cross between *C. Veitchi* and *C. vestita ruhro-oculata*, and is chiefly remarkable for the pleasing contrast presented by the two lower white sepals with rich crimson colour of the other portion of the flower, the plant resembling *C. Veitchi* in its vigorous habit of growth and flowering. *C. Cooksoni* is of similar parentage, but *C. vestita luteo-oculata* was employed instead of *ruhro-oculata*, with the result that a hybrid was secured with large pure white flowers, having a slight yellow centre and resembling *C. Veitchi* in the characters previously mentioned. Both are beautiful Orchids, and growers would gladly welcome more of the same type.

In the Burford Lodge collection Sir Trevor Lawrence has tried several experiments with *Calanthes*, and has succeeded in raising several improved forms, but much the best of these that have yet been shown is *C. porphyrea*, which resulted from a cross between *Limatodes labrosa* and *Calanthe vestita ruhro-oculata*, a similar origin to that of *C. Sandhurstiana*, except that *L. rosea* was employed in this case. *C. porphyrea* is, however, quite distinct from the latter, the flowers more resembling the *Limatodes* in form, of a fine rosy crimson hue, the lip slightly cupped and spurred, lighter in the centre, and dotted with dark crimson. It is a beautiful Orchid, and though the flowers are not large, the brilliant colour amply compensates for any deficiency in that respect. It may be worth mentioning that the other hybrid *Calanthes* previously raised are as follows—*C. Dominii*, from *C. Masuca* and *C. furcata*; *C. Veitchi*, from *C. vestita* and *Limatodes rosea*; *C. bella*, from *C. Turneri* and *C. Veitchi*; *C. lentiginosa*, from *Limatodes labrosa* and *C. Veitchi*; *C. Sandhurstiana*,

from *Limatodes rosea* and *C. vestita rubro-oculata*; and *C. Sedeni*, from *C. Veitchi* and *C. vestita*.

Miscellaneous Hybrids.—Only two hybrid *Cypripediums* have been added to the list, and both are from Messrs. Veitch's establishment. *C. macropterum* is from *C. Lowi* and *C. superbians*, and is evidently quite intermediate in character. It is pretty, but cannot rank amongst the best of hybrid *Lady's Slippers*. *C. Sedeni candidibulum* is a beautiful form obtained by crossing *C. longifolium* and *C. Schlimi album*. It has been not inappropriately termed a "White *Sedeni*," and with the exception of the pale rosy lip the flower is pure white. Since it partakes of the free-growing and profuse-flowering habit of *C. Sedeni* it will take a place amongst the most useful members of the genus.

Dendrobium endocharis has been referred to before, but it deserves a further note, as it is unquestionably an Orchid that will find much favour with cultivators. It was raised from seed obtained by crossing *D. japonicum* and *D. heterocarpum*, and bears dense clusters of creamy white fragrant flowers, the lip being relieved by a blotch of crimson in the centre. In habit it resembles *D. heterocarpum*, and like that is a profuse flowerer. These easily grown *Dendrobies* are thoroughly useful plants, and the flowers of most of them are very durable, no mean recommendation in these days of large floral demands.

One of the most remarkable and handsome Orchids of the year is *Lælia bella*, for a plant of which Baron Schröder was awarded a certificate at one of the meetings of the Royal Horticultural Society. This superb hybrid is one of Messrs. Veitch's productions, having been raised from a cross between *Cattleya labiata* and *Lælia purpurata*, and partakes of both parents' characters in a remarkable manner. The flowers on the plants shown were over 7 inches in diameter across the petals, which, with the sepals, are pale rosy purple; the lip is 4 inches long, over 2 broad, and unequalled in the intense richness of its crimson hue. It is a magnificent Orchid, and is considered one of the most valuable at present in cultivation.

An interesting addition has been made to the comparatively small number of *Thunias* in the hybrid *T. Veitchiana*, which has been shown and certificated both at Kensington and Regent's Park this season. At the former exhibition it was shown by Messrs. Veitch and Mr. B. S. Williams, who had it under the name of *T. Wrigleyana*. As it is evident there has been some confusion in the naming, it will be well to give Mr. Williams's explanation of the matter. He says, "This plant, which has for some time been known to us under the name of *T. Wrigleyana*, was, we believe, first raised and flowered by the late Mr. G. Toll of Manchester, who named it after E. G. Wrigley, Esq., and subsequently sold us the stock. Since then it has been exhibited by Messrs. Veitch and Sons under the name of *T. Veitchiana* at the same time as exhibited by us under the name of *T. Wrigleyana* at the Royal Botanical Society's Show in 1885." Upon the label accompanying the plant shown by Messrs. Veitch it was stated that the seeds obtained from a cross between *T. Marshalli* and *T. Bensoniæ* were sown in April, 1881. It appears that flowers were subsequently submitted to Reichenbach, who gave it the name now accepted. We have therefore reliable evidence indicating that the same cross was effected with precisely the same results in two widely separate gardens. Apart from this interesting matter it is unquestionably a charming Orchid, the sepals and petals being white, the lip veined with purplish lilac or mauve and tinged with yellow, and is both free in growth and flowering.—L. CASTLE.

BERRY-PRODUCING PLANTS.

SUMMER and autumn are truly enjoyable times in the garden and there seems to be no reason whatever why a ramble should be not only pleasurable, but highly interesting also during the dull months of winter. In many gardens we see trees and shrubs grouped with great care and forethought for the beautiful autumnal effects of their foliage, which at the best lasts only a few weeks, and the same idea carried out with berry-producing shrubs, and evergreen or ornamental-foliaged plants, would last the entire winter and help to bridge over a season that in the majority of gardens is anything but pleasant. Considerable taste would no doubt be required to make the venture prove an attraction, but the plants at command seem to be so varied and at the same time so suitable to each other, that little difficulty will be experienced on that score. The number of plants that produce berries or brightly coloured fruits in this country is considerable were they all collected together. Fifty years ago an old writer said that "the hedgerows in winter are my gardens, loaded with the haws and haws, intertwined with the feathery tresses of the Traveller's Joy, here and there fresh bits of Ivy peeping out." What can be more beautiful in the open air just now than the common Spindle Tree, *Euonymus europæus*? Yet in 80 per cent of modern gardens it is a stranger. It is leafless truly, but the bare branches are covered with those curious brilliant-coloured fruits that catch the eye at long distances, giving a most pleasing effect, which is heightened by dull surroundings. A group of such plants, or in clumps of half a dozen judiciously mixed in shrubberies lighten it wonderfully. The common wild Rose, which during summer is so handsome studded with its pretty pink flowers, is none the less so now, the large richly coloured fruits being very desirable whether in clumps or other-

wise. *Hippophae rhamnoides* is also very useful at this season. Many of the varieties of Holly produce berries freely as well as the Hawthorns, a few of the American varieties being very handsome; *Cotoneaster Simonsii*, &c., many of which will occur to the reader, the above being merely an indication of the numbers that exist and fruit throughout mild winters. Among smaller plants may be mentioned *Vaccinium macrocarpum*, *Gaultheria procumbens*, *Hemiphragma heterophylla*, &c., unequalled for edging clumps and beds. Then there are many plants indoors that may be allowed to fruit for winter decoration; for instance, *Passiflora cœrulea* trained along the roof or in festoons from pillar to pillar, loaded with its pretty egg-shaped fruits, is a grand sight. It also does well in the open air, but flowers too late to mature fruit. *Skimmia japonica* and its varieties are old favourites often cultivated in pots for decorative plants for corridors, &c., *Myrtus myrsinoides* is also worth growing, and *Microcachrys tetragona*, a drooping Conifer-like plant, with branches like a Cassiope and smothered with small bright red Raspberry-like fruits.—M.

SUMMER BEDDING PLANTS.

IF we knew beforehand what sort of weather we were to experience during the following summer we should be in a position to place out such plants as would be certain to give satisfaction, but as it happens we have to prepare as much as possible for any contingency. What we have to determine, then, is which are most suitable for all weathers, and to plant these principally in preference to those that may be classed as doubtful. In spite of numerous and noteworthy additions to our lists of summer bedding plants, Zonal Pelargoniums are still in the ascendant, and are likely to remain so I suppose as long as the fashion of summer hedding-out lasts. For my part I am heartily sick of "scarlet Geraniums," and I am not the only one by a good many who have had enough of them. We are under orders to rely principally upon them; they must preponderate in every arrangement, and nearly every bed in fact, as many as five hundred plants frequently be worked into the majority of our largest beds. It is true they are the most effective, glaringly so unfortunately, more especially during a hot and dry season, but they look very miserable indeed during wet weather, especially in sheltered positions, where the flowers are more flimsy. However, my object in penning this paper is not the condemnation of the hedding-out system, as that, I suppose, would be of no avail, but rather with the motive of pointing out which kinds of plants have proved the most generally useful here for some time past, though I could not resist having another grumble.

The most useful scarlet Zonal Pelargonium for all weathers is *Triomphe de Stella*, an old sort belonging to the Nosegay section, and of which Mr. Taylor grew many thousands when at Longleat. It is one of the best "tempered" sorts in cultivation, striking freely, and quickly becoming established in the beds, no matter how roughly it may have been used. In hot weather it is literally a blaze of scarlet, and it quickly recovers from the damaging effects of rain. The old Indian Yellow is of somewhat similar neat-growing, profuse-flowering habit; and this again is one of the best summer bedders. *Master Christine* is a good light pink, and Mrs. Turner is another rather vigorous-growing deep pink. *Henry Jacoby* is a great favourite with all who have it, no other variety producing finer trusses, and freely too, of colour rich crimson. In our rather sheltered garden strange to say we could hardly distinguish it from *C. Smith* and *General Outram*, but in more exposed positions the trusses of *Henry Jacoby* are the larger of the two. *West Brighton Gem* is a failure, being of weakly constitution, but *Fire Ball* is a good scarlet, and will be grown in preference to *Vesuvius*. Of bronze Zonals I prefer *Marshall McMahon*, and *Black Douglas* is also very showy, and these are wonderfully effective in all weathers. The same may be said of the yellow-leaved *Crystal Palace Gem*; while of the silver variegated sorts we prefer *Flower of Spring*, *Mrs. Mappin*, and *Bijou*, the latter for the centres of beds and for mixing with *Violas*. *Robert Fish* with greenish yellow leaves is useful for outside lines. Several sorts newer than the foregoing have been tried and found wanting. Numbers of them have better trusses of well-formed flowers, but after all are not so reliable as we expect them to be. The double-flowering sorts are serviceable only for hot and rather dry positions.

Verbenas are now seldom seen in quantity, but they are very brilliant when well grown. *Purple King* is still the best, while *Crimson King* and *Snowflake*, also old sorts, are as reliable as any. It is useless to attempt their culture unless a start can be made with clean healthy cuttings, as these only make plants fit to put out. Seedling *Verbenas* are suitable for large mixed beds, and these will grow strongly without any extra preparations, whereas those raised from cuttings require well-prepared and manured ground, as well as a summer mulching. *Verbena venosa*, propagated either from seed, or better still by root cuttings, succeeds admirably in some gardens, and is most effective when mixed with either *Veronica Andersonii* variegata, *Abutilons Thompsoni*, and *Darwini tessellatum*, white and yellow *Marguerites*, and *Pelargonium Bijou*, these being surrounded with a broad band of *Iresine Herbstii*, or *Iresine Lindenii* edged with *Golden Pyrethrum*, *Robert Fish Pelargonium*, or some dwarf silver-foliaged plant. Such a bed proves effective in all weathers, lasting well into the autumn.

Marguerites ought to be generally popular, but have not made so much progress as was at one time thought probable. They are easily

wintered, a few strong old plants yielding abundance of cuttings, which strike freely in heat, or they may be struck in the autumn and wintered similarly to Zonal Pelargoniums. They ought not to be planted in very rich soil or they grow too strongly, small plants soon becoming tall and bushy. In a sunny or rather dry position in mixture with single Petunias they succeed admirably. They are also effective when planted either in lines, in mixed groups, or as a groundwork for thinly planted beds of Ricinuses. For window boxes they are invaluable, immense quantities being annually used in London. When required for this purpose they ought to be raised in the autumn and stopped once or twice, and every shoot resulting will flower well in the spring. Etoile d'Or is a good yellow sort, and of the whites I prefer coronarium frutescens. For hot dry banks, or flower beds and borders that are naturally poor and dry, there are no plants to equal seedling single Petunias. On rich soil they are apt to grow too strongly, and do not flower nearly so freely as they do on poor soil. A packet of seed sown early in February will yield a great number of plants, which soon attain a good size. I have no faith in the very dwarf sorts sent out of recent years.

Lobelias are also easily raised from seed, and several of the strains can be depended upon for neatness of growth, freedom of flowering, and colour. We prefer to raise our stock either from cuttings or by division of a number of old plants wintered in a cool house or pit. These soon make good plants and form close bright lines of colour. *L. pumila magnifica* and *Brighton* are our favourite blue varieties, and *pumila Ingrami* is a good white. Ageratums on the whole are much more serviceable than Lobelias, neither very dry nor very wet weather appearing to greatly injure them. They are easily reared from seed, but for edging purposes plants raised from cuttings are the best. Cannell's Dwarf is perhaps the most dwarf of all, and would be invaluable for carpet beds if it was fixed in character. Many of the plants are apt to grow much too strongly and do not flower well, while those that retain their character produce nothing but bloom, and the stock is easily lost. Swanley Blue is our favourite, and may be said to be one of the most easily increased and most effective dwarf bedding plants in cultivation.

Pyrethrum Golden Feather flowers too readily, and does not stand wet weather so well as we should like, and for the future the preference will be given to *Pyrethrum aureum selaginoides*. The latter, though not so bright in colour, does not run to seed, and is much the best for carpet beds, not requiring so much plucking. *Centaurea argentea plumosa*, *gymnocarpa*, and *ragusina compacta* can all be easily raised from seed, and if sown early in the year the plants will be of good size at bedding-out time. They stand all weathers, and are very effective white-foliaged plants. *Chamaepeuces diacantha* and *Casabona*, the former silvery white and the latter green-foliaged, are very attractive dwarf Thistle-like plants, and suitable for dotting among dwarf carpeting plants. These may be raised from seed either in the autumn or in the spring. Of hardy Grasses for bedding purposes the best dwarf kinds are *Festuca glauca* and *Dactylis glomerata elegantissima*, the former being the most generally useful. They divide readily, and a large stock can thus be easily raised without the aid of glass. *Arundo donax variegata* grows to about 3 feet in height, and in mixed beds or a strong clump in the centre of a bed is most effective.

Fuchsia Golden Fleece is useful for bedding purposes, while *Chrysanthemum Sensation* and another old silvery variegated plant, *Polemonium caeruleum variegatum*, are still deservedly popular in some districts. *Coprosma Baueriana variegata* is also very handsome, but it is not extensively grown, being rather slow of propagation. The same remarks apply to the beautifully variegated *Veronica Andersoni variegata*. *Stachys lanata*, being perfectly hardy and free-growing, is not much prized, but we find it very serviceable as well as effective, and use it freely for edging large beds, dividing the old plants at bedding-out time only. The Golden Thyme loses its colour, otherwise it would be largely grown. *Euonymus radicans variegatus* is a very useful edging plant, and quite hardy. It takes some time to get up a good stock, but when this is accomplished the plants can be kept neatly trimmed into any shape. Cuttings will strike in handlights during the summer, and in heat in the spring. *Mesemhranthemum cordifolium variegatum* ought to be renamed, as it is much too long. It is a pretty edging plant, is also suitable for carpet beds, and forms the best groundwork for beds thinly planted with tuberous-rooted Begonias. *Koniga maritima* grows freely in all weathers, a little too strongly in fact, but it is very easily increased by cuttings in the spring, and is a very effective silvery variegated edging plant. *Iresine Lindeni* does not always thrive on heavy soils, but *Iresine Herbsti* succeeds nearly everywhere. *Alternanthera magnifica*, *paronychoides major aurea*, *æronea spectabilis*, and *versicolor grandis* are all worthy of culture and are most effective in carpet beds.

I ought not, perhaps, to omit mentioning a few more flowering plants, and wish particularly to strongly recommend tuberous-rooted Begonias for summer bedding—not, however, the produce of any inferior strain, but rather the best sorts suitable for the purpose. Those that are most valued for pot culture we also find the best for the beds. Messrs. Laing and other well-known seedsmen supply seeds of capital strains of bedding Begonias, and if the plants are given fairly rich soil as well as mulched before hot weather arrives, they will flower grandly, almost rivaling the Zonal Pelargoniums for brilliance of colour, and certainly far surpassing them in wet sunless weather. Antirrhinums are very effective in beds, standing drought surprisingly, as also do Pentstemons. Heliotropes are general favourites, and a bed or beds of Miss Nightingale please everybody. The above list is by no means complete, but perhaps the omissions may be made good by some other correspondent.—W. I.

CANKER IN APPLE TREES.

I HAVE read Mr. Hiam's remarks on the canker in Apple trees. I quite agree with him in all he says. He forgets when he says I had not seen the insects, I said I had, and also my gardener, by the aid of a Coddington lens. I have no doubt in the matter, none. But I did not write on the question this time, for I deemed it useless. I suppose I am the "individual" that "Thinker" alludes to. He might in courtesy have mentioned my name as Mr. Hiam did. I do not like to be simply styled an "individual" in the controversy. I found that two Apple trees coated with Gishurst compound four times a year lost their canker and grew well, while that standing close by still continued to canker. All were in deep good yellow loam. I do not intend to go into the argument any further. I can but say, as regards canker, I discovered it was caused by insects, not from Mr. Hiam, but I most cordially agree with him in every way. I am perfectly satisfied myself, and shall not continue further, and should not have written now, only to correct what Mr. Hiam stated as to my not having seen the insects. Some Apple trees are more attacked by them than others. With regard to the trees being out of health, this was not the case, as they were in good soil, well drained, and were growing vigorously.—HARRISON WEIR, F.R.H.S., 34, Lansdowne Road, Tunbridge Wells.

NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.

THE third annual dinner of the members of the above Society was held in the large dining-room of the Nottingham Arboretum on Thursday last, December 17th, when a large company of members and their friends assembled. Various parts of the room were well furnished with a variety of choice flowering and ornamental foliage plants, whilst stands of choice cut flowers and fruits graced the tables, very noticeable being a nicely arranged stand of cut Orchid flowers, representing many varieties, sent by S. Thacker, Esq., one of the Vice-Presidents, and a noble Queen Pine from Chatsworth. The company consisted of many local magnates, in addition to a large number of gardeners, most of the gardens of the great houses of Notts being represented, as well as a number of local nursery firms. The Mayor (Alderman W. Lambert), President of the Society, occupied the chair, and was supported amongst others by the Town Clerk (S. G. Johnson, Esq.), F. W. Cooper, Esq., F. G. Baldwin, Esq., Alfred Page, Esq., J. P. Fearfield, Esq., H. M. Baines, Esq., A. J. Field, Esq., F. S. Granger, Esq., W. Sibley, Esq.; Messrs. A. H. Pearson and C. E. Pearson (Chilwell), Owen Thomas (Chatsworth), T. Macdonald (Messrs. Barron & Son), C. J. Mee (Wollaton Hall), J. Swanwick (Sherwood Lodge), J. H. Walker (Hardwicke House), T. Edgington (Woodthorpe Grange), J. S. Belliss (Newstead Abbey), &c.

The usual loyal and patriotic toast having been honoured, the Mayor rose, amidst applause, to propose "Success to the Society." He thanked the members for having elected him President for the ensuing year. He felt that every President of a Society like theirs ought to know a good deal about horticultural matters, but in that he was very deficient. He was, however, a great admirer of gardens, gardeners, and all their work. He was greatly indebted to his own gardener, who had endeavoured to teach him much. However, he was ashamed to say that he had so much on his mind with regard to business and town matters, that he frequently forgot the names of the numberless varieties of pretty flowers, which, while they charmed the eye, did not fix their names in his memory. He wished the Society a prosperous season, and hoped they might be successful in their new venture, and hoped it might be instituted at his grounds at Mapperley Park. To him it was a source of much pleasure that they should hold their Show there, and next year he hoped, if possible, to see them with a better Show than before.

Mr. Samuel Thacker, in responding, dwelt upon the history of the Society, and made some practical suggestions as to its working in the future.

Mr. C. E. Pearson gave the toast of "Horticulture," and commented upon his experience of horticultural shows and their successful management. The Society had already obtained success by holding one of the best shows in the Midlands, but the success which they had not obtained was success from a pecuniary point of view. If they could not get the public together to look at horticultural produce, they must adopt some other additional means of attraction.

Mr. F. W. Cooper submitted the toast of "The President, Vice-President, and other officers of the Society." He thought previous speakers took rather a gloomy view of the prospects of the Society. The Society had up to the present been connected with genteel horticulture. They had resorted to popular prices, but not to popular pleasures or amusements. The success of the Society very largely depended upon the efforts of its officers, and if they would each endeavour to obtain more subscribers the future success of the Society would be assured.

The toast having been responded to, Mr. H. M. Baines proposed "The Mayor, Magistrates, and Corporation," to which the Town Clerk (Mr. S. G. Johnson) responded in a very energetic address, containing some sound advice to the young men connected with the Society. Mr. Sankey, Bulwell Potteries, next proposed "The Visitors," for whom Mr. Owen Thomas, Chatsworth, responded in a few well-chosen observations.

The Chairman, on behalf of the members of the Society, presented the Secretary (Mr. Edward Steward) with a cheque for £10, in recognition of his services to the Society. The remaining toasts were "The Auditors," "The Ladies," and "The Press."—J. H. W.

NEW SINGLE CHRYSANTHEMUMS.

I AM reminded by a box of blooms of all the newer and best varieties just received of how much Mr. Cannell, of the well-known "Home for Flowers" at Swanley, has done, with his accustomed energy, to popularise

single Chrysanthemums. I have been closely observing what progress towards established popularity they are making. So far the evidence thereof is meagre. They will probably in the future hold the same relation to the doubles that single Dahlias do—both will have their patrons. I find from Mr. Castle's list of new Chrysanthemums of the present year, twenty-four have been certificated in England (*vide* page 464 of the Journal) and of this number not one is single or semi-double. At this time of the year they are, however, extremely useful for cutting or decorative purposes, and there are numbers of people with æsthetic and refined tastes that consider the doubles, as usually grown, "too large and lumpy" for personal decoration; or, as they say, "too like big mop-heads." For the convenience and information of that large class, permit me to try to skim the cream of the newest single and semi-double varieties with which I am acquainted. Of American introduction, we may fitly commence with "America." This, when well grown, can be had upwards of 8 inches across, but smaller-sized blooms are generally preferred. It has a double row of marginal petals, that open rosy blush, gradually changing to white. These are fluted half length. Mr. N. Davis describes it as "early," but the fact of having fine blooms before me as I write shows its variability. A companion variety to this would be "Peter Henderson," large, flat petals, double row, and much the best yellow I know, without excepting even that other fine American single variety, "Helianthus," which is a shade of brighter yellow. Those who require yellows in variety should include Mr. Cannell's Yellow Gem and Mr. Toole, though smaller flowers. Before I pass from the American varieties I must recommend "Harriett Thorpe," a semi-double incurved that opens blush, maturing pure white balls; "Mrs. Allen," deep rose and white ring; and, lastly, Dr. Hogg, distinct from those named, rather semi-double, velvety crimson, smooth, broad petals. Two of Mr. C. L. Teesdale's that should be in every collection are "Mrs. Deane" and "Mrs. J. Mills," the former distinctly Japanese, pure white; and the latter very large, of the same ground colour, chastely suffused with pink. To those may be added the following four that I have grown last year, sent out by the same firm, "Dr. Kellock," silver pink, white ring; "Magenta King," "Mrs. Langtry," silvery blush; and "Miss Cannell," white, yellow centre. I have seen also some seedlings very large and distinct that more will be heard of.—W. J. MURPHY, *Clonmel*.

CHRYSANTHEMUM SHOW AT FELLING-ON-TYNE.

THE above Show was held on Wednesday and Thursday, 16th and 17th of December, the Committee having organised the Show owing to the disappointment felt at the South Shields Exhibition not taking place this year through the present depression of trade. The Exhibition was small, but some good plants were staged. Mr. T. B. Morton, Howden Bridge, Mr. Fred. Bollam, Axwell Park, and Mr. Robert Charlton, Birtley, were the principal exhibitors with cut flowers.

For twelve incurved blooms Mr. Morton was first with Golden Empress, Queen of England, Empress of India, Lord Wolseley, Princess Imperial, Hero of Stoke. Mr. Bollam was second with excellent blooms of Empress of India, Golden Empress, and Jardin des Plantes. For twelve reflexed blooms these exhibitors were in the same position; also for twelve Japanese, Mr. Morton having fine blooms Fair Maid of Guernsey and Criterion. Mr. R. Charlton won the first prize for six Japanese with flowers 8 inches across of Fair Maid of Guernsey, Erectum Superbum, and Gloire de Toulouse. For six flowering plants Mr. Paul Blanchard, gardener to Dr. Gibb, Sandyford Park, Newcastle, was first with well-trained plants of Mrs. G. Rundle, G. Glenny, and Mrs. Dixon. The same exhibitors were also first for three Pompons, three Japanese, and two Anemone-flowered, followed in each class by Mr. Russell, a local amateur, who exhibited plants.

The Exhibition on the whole was very good for a commencement, considering that the Committee only thought of it three weeks ago. The Committee and Hon. Secretary, Mr. W. Simpson, jun., are to be congratulated on their success.

ROYAL METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on Wednesday evening, the 16th inst., at the Institution of Civil Engineers, Mr. R. H. Scott, F.R.S., President, in the Chair.

Mr. J. Hartnup, Mr. A. W. Preston, Mr. R. Sheward, and Mr. W. B. Worthington, B.Sc., M.Inst.C.E., were balloted for and duly elected Fellows of the Society.

The following papers were read:—(1) "On the Influence of Forests upon Climate," by Dr. A. Woeikof, Hon. Mem. R. Met. Soc. The first step towards a scientific investigation of the influence of forests upon climate was taken by the establishment of the Bavarian forest meteorological stations. The example was followed by Germany, France, Switzerland, Italy, and other countries. As a general result it was found that during the warmer season the air and earth temperatures were lower in the forest as compared with contiguous woodless places; that their variations were less, and that the relative humidity was greater. Dr. Woeikof's discussion of this question shows that in the western portions of the Old World extensive forests materially influence the temperature of neighbouring localities, and that the normal increase of temperature from the Atlantic Ocean towards the interior of the Continent is not only interrupted by their agency, but they cause the summer to be cooler in regions situated further in the interior than those nearer the sea. Hence forests exert an influence on climate which does not cease at their borders, but is felt over a greater or less district, according to the size, kind, and position of the forests. From this it naturally follows that man, by clearing forests in one place and planting others in another, may considerably affect the climate.

(2) "Report on the Phenological Observations for 1885," by the Rev. T. A. Preston, M.A., F.R. Met. Soc. The year has been a very dry one, and this has acted in such a manner on vegetation, that although the winter was mild, plants were very late in flowering and lasted only a short time. The bloom was often profuse, and as bees and other insects could visit them,

the crop of fruit was unusually great, the Apples, for instance, being often spoilt in quality from the enormous number on the trees, whilst in the case of wild fruits the brilliant colour of the bushes when in fruit was quite as beautiful as when in bloom. But at the same time the drought acted very prejudicially, especially to root crops and bush fruit, as well as Strawberries. In the case of the root crops the seed had great difficulty in germinating, and the weak plants were at once overpowered by insect pests, so that the crops of Turnips were generally complete failures. The insect pests also did much damage to bush fruit, while the drought prevented the Strawberries from swelling. The corn did not suffer to any great extent, the dry season allowing the land to be prepared, and although the straw was often short, the yield was not unsatisfactory. A general absence of butterflies was noticed in some places. In the south of England the white butterflies were most abundant at one time, but the autumn butterflies were not so plentiful as usual.

(3) "Etudes sur les Crépuscules Rosées," by Prof. A. Ricco of Palermo.

(4) "The Storm of October 15th, 1885, at Partenkirchen, Bavaria," by Col. M. F. Ward, F.R. Met. Soc. This was the most destructive storm which has occurred in this valley since the winter of 1821-22. The storm burst suddenly at 7 p.m., and lasted about half an hour, but in that short period nearly every house was unroofed, and it is computed that in one forest alone above 250,000 trees were laid prostrate.

CHRISTMAS BERRIES IN THE OPEN AIR.

BERRY-BEARING plants in pots which have partially grown and wholly matured under glass are very pretty and desirable at this time, but there is not one in a thousand of those who use evergreens and berries for Christmas decorations who have the means of growing them, but there are hundreds of those who cannot do so that might cultivate a few bushes which would supply them with berries at Christmas. Although all kinds of open-air berries are uncommonly plentiful this season we often hear of their being scarce; but that applies more particularly to the Holly, as when there is no fruit on this some appear to conclude that there are no berries, but by growing a small selection of berry-bearing bushes there will always be some of them in fruit at Christmas. It is a pity that those who plant a few scores or hundreds of shrubs in a small garden do not pay more attention to berries. The general desire is to plant those that will flower in spring or summer, when all kinds of blossoms are most common, and then the flowering bushes are looked on as being of no special value; but now when we are in the dead of winter, and open-air flowers have quite disappeared, those bunches which bear berries become very conspicuous and valuable. Winter effect in planting should always be more studied than summer display, and where this good rule is followed berry-bearing trees will be largely used, and their possession will be hailed with delight at this time and throughout the winter. They require no special soil situation over and above that given to any other trees, and they are no more expensive at first. Generally speaking, they will grow in all soils and situations. The winter months, from October until March, is the time to plant, and any nurseryman will supply them in quantity.

The Hollies are not very quick in growth, but they are remarkably hardy. They are sometimes just a little difficult to transplant, but this mainly applies to many large specimens, and little nursery plants from 2 feet to 4 feet in height may be planted as successfully as almost any other bush. The common green variety is as good as any to produce berries. *I. ferox* is the Hedgehog variety, but not a free-fruiter. *I. fructu-luteo* produces yellow berries, and should always be introduced for the sake of variety. *I. argentea variegata* is the silver-leaved variety; a great beauty and a free fruiter. This should never be omitted. *I. aurea maculata* and *I. aurea Regina* are the Golden Hollies, and although very pretty they are not specially fruitful. They are useful, however, for Christmas decorations apart from any consideration of berries.

The Aucubas are well-known evergreens. They are extremely hardy and useful, as they grow in towns as well as in the country. By planting a male variety amongst female sorts the latter will become covered with beautiful scarlet berries of great size and value at this time. In this respect they are unrivalled.

The Arbutus, especially *A. Unedo*, is a beautiful object now. The trees are surrounded with little clusters of creamy bell-shaped flowers and Strawberry-like fruit. They are the largest of all Christmas berries. They grow well near the sea, and succeed admirably amongst a general collection of bushes. The Sweet Bay produces berries very freely here. They are about the size of peas, oblong, dark purple in colour, and cluster round the points of the shoots. The Laurustinus also produces berries very like the preceding. They are a little smaller, and are clustered together in terminal bunches. Cotoneasters are pretty evergreens, which produce red berries in winter with absolute certainty. *C. microphylla* is the small-berried sort, very prolific, and good for the front of shrubberies, walls, or rockworks. *C. Simonsii* grows taller, is more of a bush, and bears larger berries of a very charming character. *Pyracanthas*, especially *Crataegus Lelandi* and *C. fructu-luteo* are exquisite winter-berried plants. They are quite hardy and well adapted for walls and trellises. Their large effective berries remain on the whole of the winter, and those who introduce one plant of each or more will never be without Christmas berries, as I never knew them to miss a crop.—J. M.

HOW TO FILL AN ICE HOUSE.

IN reply to "J. R.," who asks for information on this subject at page 539, I beg to say that some non-conductor, such as Wheat straw or sawdust, should be placed in the bottom of the ice house, and between the walls and the ice, as the work of filling proceeds. Assuming there is a brick or concrete surface outside the icehouse door for tipping the ice

from the carts on, it should be broken thereon with mallets before begin shovelled into the house, where it should be repounded and rammed together, and boiling water applied as advised in the making of ice ricks at page 534. In order to secure a good supply of boiling water for the purpose of consolidating the ice by its frequent application during the process of filling the house, it will be necessary to temporarily erect a boiler on a few loose bricks close by. When the house is filled a thick covering of the same material as that put between the walls and the ice should be put on top of it, and the passage leading to the house from the outer door should be rendered air-tight by placing closely together therein several bundles of clean straw.—H. W. WARD, *Longford*.

HYDRANGEAS.

CONTINUING as promised my remarks upon the culture of Hydrangeas, the following system of treatment will be found a good one.

At the commencement of the year, or even earlier, these plants can be started into growth. A vinery or Peach house just started is a capital place for them. As soon as they commence growing they are arranged on a shelf close to the glass to keep them as dwarf as possible, for if some distance from the glass they are liable to become drawn. As soon as the flower truss is just visible the plants may be transferred into 6-inch pots, the smallest size it is possible to shift them into. At one time I was under the impression that this treatment assisted them wonderfully in developing their gigantic heads of bloom. The practice is now abandoned and our plants are not potted, the trusses of bloom being equally as large as before. The treatment now is to top-dress with a little cow manure and sprinkle upon the surface of the soil two or three applications of Standen's manure during the time the heads are developing. This treatment insures dwarf plants from 1 foot to 15 inches high, with trusses 10 inches or more in diameter, provided they are not expanded in too much heat or grown in too confined an atmosphere. After the flowers are visible an intermediate temperature should be provided and air admitted freely whenever outside conditions will allow of this being done. The flowers are a long time in developing even after they are visible, and this batch of plants can be divided when they reach this stage for the purpose of forming a succession. The plants to be retarded should be gradually given cooler treatment until they can be placed in the greenhouse, and if allowed to expand their flowers under these conditions they will form a capital succession to those pushed forward in heat.

Those rooted at this season of the year are allowed to make a start under similar conditions to those already advised, and are then placed into 4-inch pots, using the above compost. These will produce equally as fine trusses as those that had been grown during the previous season. The plants may be divided and started into growth at intervals of a month, according to the demand. The last plants should be started in the cold frame, and may finally be divided and a portion placed outside. The amateur may start his first plants on a shelf in the greenhouse, leaving the remainder in the cold frame. A portion of those started in the greenhouse can be placed in the cold frame after the flowers show, so that they will come into flower after those in the greenhouse have faded. Those left in the frame may also be divided and a portion placed outside, which will insure a long succession of plants in bloom either for room-decoration or the greenhouse.

The varieties most suitable for this purpose are *H. hortensis*, *H. Otaksa*, and *H. Thomas Hogg*. The last-named is more slender in growth than the two former, and produces pure white flowers, which are admirably adapted for cutting and bouquet-making. This should be grown in all gardens, for it is the finest of the Hydrangeas. The second named is a magnificent rose-coloured variety, and produces very large trusses of bloom, and should certainly be largely grown where these plants are appreciated. The old *H. hortensis* cannot be despised, for it is decidedly one of the best for general purposes. Its flowers and trusses are both large when well grown. It is very changeable in the colour of its flowers, which naturally are of a rosy hue, but very frequently heavily shaded with blue. Sometimes the flowers come quite blue, and whether of this colour or shaded they are even more beautiful than when they come their natural shade. There are many speculations as to the cause of this blue colouring in the flowers, some believing it is due to the feeding they receive in the form of stimulants, others to the soil in which they are grown. There can, however, be no doubt that when iron exists in the soil the flowers are shaded more or less. Blue flowers, however, cannot be relied upon, for if cuttings are taken from one plant and the whole treated exactly the same as regards stimulants and soil some will be rose in colour, while others will be blue or shaded. The flowers of the variegated form of this variety very frequently come blue, and when they do they are charming; the contrast of the white variegation of the foliage and blue shaded flowers are very effective. This form is well worth growing for various purposes of decoration on account of its foliage, which when forced early in the season is very beautiful grouped with other plants.

H. paniculata grandiflora should also be grown in pots, for it is really charming with its large panicles of creamy white flowers, which are most freely produced under good cultivation. This requires slightly different treatment from *H. hortensis* and its varieties. For growing in pots strong plants should be obtained to commence with, imported plants generally being the best. These cannot be obtained for some time yet, but should be obtained as early as possible, and be placed into 6 or 7-inch pots in the same compost as recommended for other varieties. Partially prune the stems and plunge the plants in a cold frame. In spring, just before growth commences, prune the shoots closely back. If one eye is left on each shoot of the last season's wood it will be sufficient. Encourage them to

grow under cool frame treatment until the roots are active, when the plants can be removed to the greenhouse and allowed to come naturally into flower. No attempt must be made to force them the first season, or the growth will be weak, fail to flower, and the plants probably be ruined instead of being thoroughly established for the following season.

After flowering they may be placed outside, the principal object being to get the wood thoroughly ripened, for upon this entirely depends whether the plants flower well or the reverse. The shoots should be pruned closely back any time during the winter prior to starting the plants into growth again. This season the plants may be gently forced, but a warm close confined atmosphere must be avoided or the growths will grow weakly and fail to flower. Plenty of air must be admitted to insure sturdy compact growth, and then fine flowers will be the result. The plants should be top-dressed when introduced into heat, and freely supplied with stimulants after growth has once commenced.

This is a beautiful plant for decoration, and can by gently forcing be trained to flower months before its natural flowering time, which is from the end of August. It cannot be forced into flower so early as the varieties of *H. hortensis*, but by starting it into growth a little earlier each successive season no difficulty will be experienced in inducing it to flower moderately early in the summer, when it proves invaluable for the conservatory.—B.



KITCHEN GARDEN.

FORCING is the main consideration just now. Our produce grown in this way for Christmas consists of Asparagus, Seakale, and Rhubarb. We find roots force uncommonly freely this autumn, and the growths are both abundant and of high quality. Those who refuse to force anything early in the autumn under the impression that it cannot be done profitably then may begin now with safety. Rhubarb is forcing readily in the ground with a hotbed over it. One day some of our men covered three large crowns. They put the casks upside down over them, and then covered them all with hot manure. When we looked inside ten days afterwards we found the growths had sprouted about 2 inches and then perished. The cask being made air-tight by having the manure on the top the steam had no means of escaping, and failure was the result. Others with the top arranged so as to admit a very little fresh air and allow the steam to escape are going on well.

Seakale may now be covered, but remember to provide a little ventilation. Where there are old-fashioned Asparagus beds with deep pigeon-hole brick pits between for filling with fermenting material some of them may be started; but it is not wise to begin this system of forcing too early, as the growths, although covered, may become so tall before April that they will be severely checked. We certainly prefer lifting the roots to this plan. Kidney Beans should be put in largely, as those sown now will only come into fruit about the beginning of March, and that is a time when they fruit very freely. There is no better way of dealing with them at this time than by putting six or eight seeds into a 3-inch pot, and potting or boxing them on as they grow large and become ready. We have ceased to grow Kidney Beans for Christmas use, as they fruit so sparingly at this time that we could not grow them with any degree of profit, and we find it more satisfactory to devote our glass houses to the culture of other things.

MUSTARD AND CRESS.—We keep up a daily supply of this now. Those who sow it are perhaps not always so careful as they ought to be, the general impression being that the seed will germinate and the crop prove satisfactory in any kind of soil, and this leads to any old soil being used. Now and again we have found some of our shallow boxes which were filled with any old soil just manage to throw up the young plants, and then patches here and there would die. This, even with Mustard and Cress, was not satisfactory, and in looking for the cause we found that very old potting-shed soil had been used. Some of it had been pressed down very firmly, but in other parts it was loose, and it was these spots that had failed. Since then we have filled the boxes with pure leaf soil, ramming it down firmly, and now we have the finest crops of Mustard and Cress we ever possessed in winter. Both the leaf soil and the extra firmness of it seem to be beneficial.

POTATOES.—Those which have been stored for some time should be uncovered, turned over, and any bad ones picked out. Early Kidneys which have been lying spread out thinly in a bottom shelf in the fruit room have begun to sprout rather freely. Those we want for frame planting early in the year will be allowed to advance, but the others which will be kept for the first plantation in the open will have the longest of the shoots brushed off and be allowed to restart before planting. Were the shoots now on allowed to remain, they would be much too long by planting time. When it is frosty the desire is to cover the seed tubers as well as possible, and this is right; but when a thaw sets in and mild weather comes the thick covering is often allowed to remain. This causes the growths to spring up rapidly, and the result is much injury to the sets. Cover by all means in frosty weather, but be as particular to uncover when it is mild.

HOTBEDS.—These will very soon be required, and all the material for

their formation should be prepared. Collect leaves, old vegetables, and littery manure of any kind; mix them all together, throw them into one heap, turn this every three or four days, and by the beginning of January a hotbed may be made up, which will produce early Carrots, Potatoes, Radishes, or anything which may be desired. A hotbed is the most useful thing anyone can have in a garden in the spring months, as propagation and other things may be done in it, and the main point is to secure plenty of material to make it with. Where leaves and straw manure are short, Cabbage, Savoy, and other vegetable stumps and leaves are a great help.

JERUSALEM ARTICHOKEs.—Although these are not grown in every garden, we regard them as one of our very best winter vegetables, deserving more extensive cultivation. The roots can be used in many ways, and many persons enjoy them as a vegetable pure and simple cooked like Potatoes. When planted in rows in the spring they soon emit side shoots, which grow up and make it difficult to tell where the rows are, and for this reason it is necessary to dig up every winter and plant every spring. They ought to be all dug now, putting a quantity of the smaller ones to one side for replanting, and storing the others like Potatoes for use. They keep well for months, and those dug up now will be quite good until May or later.

WALKS.—This is a good time to see that walks are in proper order. A kitchen garden walk ought to be a thoroughly good one. When they are not well made the wheeling which has to be done on them very soon puts them out of shape, and makes them puddly in winter and uncomfortable at all times. Large stones should form the foundation, smaller ones should top these, and gravel or ashes should crown all. Altogether, these materials should be 1 foot in thickness at least. Where old walks are out of form, pick them up; pull the small material to one side, place some rough material in the centre, and throw the fine from the sides over the top again. All walks should be a little higher in the centre than at the sides, and although some may think any kind of path will do in the vegetable garden, good and well-kept pathways are both ornamental and useful.

TOOLS.—These are not used so much at present as they will be in a few months, and now is the time to have broken ones repaired and new ones got in where required. This applies to hoes, rakes, baskets, and, in short, everything. On some estates borrowing of tools goes on, and every new tool we bring in is at once branded "garden."

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest-forced House.*—Forcing operations having been impeded by the cold in the early part of the month, the buds are not so forward as usual; but where the roots are inside, as those of all early Peaches should be, the buds are swelling strongly, some showing colour, and the night temperature should not fall much below 45° on cold nights and 50° on mild nights, with a rise of 10° to 15° by day, but nothing is gained by being in a hurry until the length of day is considerably increased, when any apparently lost time will be more than made up by trees that have been carefully treated, and even kept back through the early stages when the weather was against them. Trees that are allowed to unfold strong blossoms in a low temperature, particularly at night, with free ventilation and in good condition at the roots, invariably set well and stone satisfactorily, as might be expected, through the energies having been husbanded, finishing good crops of fine fruit in a higher temperature than is usually given. A high temperature at the beginning is often fatal to the crop, and jeopardises the future by inducing weak wood, but by proceeding gently the trees make strong short-jointed wood, and due regard being had to thinning and other details of management, the trees are profitable and remain so during an ordinary lifetime. Great crops are had at the expense of size and quality, the occasional loss of a crop, and the premature destruction of the trees. Maintain a moderate degree of moisture in the house by damping available surfaces in the house occasionally, but avoid wetting the blossom after the anthers show clear of the petals.

Second House.—Where three or more houses are forced annually the second should be ready for starting on New Year's Day. Whatever is needed by the house, trees, &c., in cleaning or repairs, should be attended to at once, and the lights, if off the roof, replaced. Fire heat need only be used the first fortnight to exclude frost at night, but the heat should be turned on in the morning to raise and maintain through the day a temperature of 50°, and ventilation so as to insure a change of atmosphere, not allowing an advance above 55° without full ventilation. The trees should be syringed in the morning and again in the afternoon early, so as to allow of the trees becoming fairly dry before night. It is a very common practice and great error to allow the inside borders to become dry in the autumn and through the early winter months, which is generally followed by the casting of the buds, particularly the most prominent and promising. The borders being composed of good loam resting on efficient drainage, there is little danger of their receiving too much water, either by throwing the houses open to the autumnal rains—a most excellent practice—or by giving them liberal supplies artificially.

Succession Houses.—Proceed with dressing, pruning, and tying the trees, and cleansing the houses. Remove the inert surface soil, and supply fresh loam, to which has been added a sprinkling of bonemeal and some wood ashes. Ascertain that the borders are thoroughly moist. Keep the house as cool as possible, and if the weather prove very bright it is well to shade if possible so as to keep the blossom back, especially in the case of late houses. This is a very important matter, and though common with old gardeners is little practised now. The swelling of the buds through a spell of mild weather and afterwards kept stationary for weeks through severe weather, is very injurious to the crop, often fatal

as the buds fall, or they expand very puny blossoms which set badly, and the fruit setting swells very irregularly and a large per-centage is cast in stoning.

CUCUMBERS.—Let every opportunity be taken to husband the sun heat by early closing in the afternoon, damping at the same time with tepid water. In bright weather the plants may be slightly sprinkled through a fine rose, and the pathways must be sprinkled every morning, otherwise red spider will be troublesome. Liquid manure in a weak state should be given to plants growing freely, but the plants being at a standstill it will be advisable to withhold the liquid manure until they are showing free growth, it not being of any use to give liquid manure to plants that have few feeders or little activity at the roots.

Hotbeds for Raising Cucumbers and Melons.—Fermenting materials having been mixed as advised, and having been turned twice to generate a uniform heat and to allow of the rank heat escaping, it will be ready for making into a hotbed at the end of the month, which should be done in a southern aspect, and in front of a Privet or other hedge, so as to break the force of the north wind and prevent its driving into the back of the frames when air is admitted. The ground on which the hotbed is made should be higher than that surrounding it, so as to prevent water lodging under the bed, and if the site be low the bed should be made on a layer of faggots. The bed should only be made so large as to take the frame and allow of about 3 inches all round, so as to allow of linings telling effectively when applied. The dung and leaves should be well beaten down with a fork as the work proceeds, and make the bed sufficiently high to allow for settling, which will be about a third; therefore it will need to be about 6 feet high at the back and 5 feet in front to begin with. It is an old and capital plan to place a few layers of pea sticks across and along the bed for conducting the heat supplied by the linings to the interior of the bed. It is also a good plan to put a shell inside the frame of half-inch deal boards, so as to form a cavity of an inch between it and the side of the frame, and 6 inches shallower than the frame, which will afford a means of admitting top heat. Put on the frame, and when the heat has risen level the surface if unequal, replace the frame, and put in sufficient fermenting material to make the depth of the back part equal or corresponding with that of the front, and on this 2 or 3 inches of short material. About 4 inches of dry leaf soil or sawdust in which to plunge the pots containing seeds as soon as the heat is up to raise young plants. Such a hotbed is very useful, and properly made and attended to is perhaps the most useful in a garden during the spring months for propagating purposes.

PLANT HOUSES.

Cyclamens.—If these are not coming into flower fast enough under comparatively cool conditions, place them on a shelf close to the glass in a temperature ranging from 50° to 55°, where a circulation of air can be maintained when the weather is favourable. If this is done they will come quickly into bloom, and their flowers will be thrown well above the foliage. These plants must never suffer by an insufficient supply of water at their roots in any state of growth. Weak stimulants may now be given every time water is needed to all plants that have filled their pots with roots. Where young stock is grown on annually for decoration, those plants used in rooms and other similar positions may be thrown away directly they cease flowering, for they rarely do any good another year. Those that do retain them for flowering another year must keep the plants after flowering in a cool light position, and supply them regularly with water. Young stock now in small pots for another year must be kept slowly moving in a temperature of 45°. They must be arranged close to the glass, and ventilated whenever favourable to insure a slow but sturdy growth. Plants of the same size still in pans must have the same treatment, and directly after the new year they should be placed singly into small pots, so that they can afterwards be shifted into 3 and 4-inch pots. Seedlings just coming up must be kept moist and close to the glass, for these will make valuable flowering plants if looked after before the close of another season. Those that have not sown seed should sow it at once in light soil in pots or pans, the seed being lightly covered with fine leaf mould. After this the soil should be watered and covered with a square of glass, and then placed in a temperature of 60° to 65°.

Primula obconica.—The seed of this plant is a long time germinating, but it is such a free-flowering plant that where decorative plants are required in 5-inch pots a good number should be grown. Plants raised from seed as soon as it was ripe are still in pans, but ready for small pots, in which they may be placed without delay. These may be grown under glass until they are placed into 6 and 7-inch pots, and they will flower profusely through the whole of next winter. This plant does well in a cold frame during the summer, but if this cannot be given it the plants will do very well outside after they are once placed in their flowering pots. For the present the young plants should be grown on in an intermediate temperature. Another pan of seed should be sown at once for flowering plants in the smallest size pots named. Fill the pan with light soil and sow the seed on the surface and not covered with soil. Water with a fine-rose can, and then cover with a square of glass until germination takes place, which will take some weeks in a temperature of 60°.

Fern Spores.—Where quantities of Ferns are required for decoration in small pots it is necessary to raise suitable kinds by sowing spores. Small plants raised by this means are always much more handsome and shapely for these purposes than it is possible to have them by division of larger plants. Spores are easily saved by the removal of mature fronds from varieties that produce them freely, and, spread upon a sheet of paper to dry,

the spore cases soon burst and the spores are deposited on the paper. Pots 5 or 6 inches in diameter should be liberally drained and then filled with equal parts of loam and peat, with a liberal dash of sand added. The surface should be made fine and even, and the spores sown at once on the surface. If they are covered with soil failure will be certain. They must be watered with a fine-rose can, covered with a square of glass, and the pots plunged in some moist shady corner in a stove or intermediate temperature. Care must be taken that neither the soil or the surroundings of the pots become dry, and then a good number of seedlings will be certain to appear in due time. At first they appear in the form of a coating of green on the surface of the soil, which develops in size until a tiny frond is put forth. This must not be removed. When the sporelings are large enough they must be pricked out singly into other pans or boxes, and finally potted into small pots. Another good plan of raising sporelings is to place under large plants pieces of half-decayed turf, which can be kept moist without having to be constantly watered or syringed, and upon these the spores will fall, and in due time a good quantity of young Ferns will be produced without further trouble.

THE FLOWER GARDEN AND PLEASURE GROUND.

Protection from Frost.—We have already had some experience of winter, but the frost was not long-continued nor very penetrating, consequently it was easily kept out of the frames containing bedding plants. It is advisable, where not already done, to prepare for more severe and more lasting frosts, or many moderately hardy plants in frames may be seriously injured. The best protecting material we can procure is rough strawy stable litter, and this abundantly and freely used will usually keep out the most severe frosts. Mats being available, these may be thrown over the glass before the litter is put on, and the combination will certainly keep out the most severe frosts. Without litter, the mats must be used two or three thick, and even then, if at all wet, may not keep out the frosts. Some use portable straw mats and thatched hurdles, and these are effective, but we would still prefer plenty of dry litter. The sides of both brick pits and frames should also be surrounded with a good thickness of leaves or litter, not a chink of any sort being left open for the frost to penetrate. Any hardy pot plants, for which there is not house or frame room, should have the pots plunged, or heavily surrounded with either leaves, ashes, or rough litter, or otherwise the frosts will crack them, and maybe also injure the roots. Tea Roses in positions where they are much exposed to cold frosty winds ought to receive some sort of protection, or otherwise they may be killed down to the ground. Those planted at the foot of walls of any kind may be sufficiently sheltered with either a single mat, branches of evergreens, or, better still, branches of Spruce Fir. Failing these, the trees may be unloosened from the walls, bunched up, and protected with haybands or a heavy layer of rough strawy litter or dried Fern fronds. Those in the open ground, including any newly received, and laid in "by their heels," as previously advised, should, whenever a severe frost is imminent, be heavily surrounded with rough dry litter, a good quantity of the same material being thrown over the plants. It is the lower portion of the plants, however, that it is of the greatest importance to protect, as if the tops are damaged this may be pruned away to the sound portions, the plants, in some cases, being strengthened by this perhaps unusual shortening. Snow affords capital protection against severe frosts, thousands of dwarf Roses sometimes being killed down to the snow line only. Those who have lost the greater portion of their Roses do not mind how much trouble they take to guard against a recurrence of this disaster, and a good practice is to mound up the snow round their pots, and it must be a severe frost that penetrates through this. Standard Roses are not so easily protected. It is the Briar stocks or stems that are the soonest injured, and in districts where these cannot be relied upon we would advise that they be bound with haybands or neatly surrounded with straw. This practice may not suit the ideas of the majority of our readers; but if this is too laborious the least that can be done is to heavily mulch the ground with rough litter, this not unfrequently saving many trees from total destruction. Any choice bulbs not perfectly hardy that may be left in the ground—these including Lilliums, Gladioli, Dahlias, and even Begonias—may well be heavily covered with ashes, this effectually protecting them from severe frosts. Christmas Roses are very hardy, but the blooms, which this season are rather early, are soon disfigured by either frosts or rains. Where they are planted in beds a spare frame should be placed over them, while single plants may be covered either with bellglasses or handlights. A further covering of mats or litter will preserve them from severe frosts, and the result will be a long succession of nearly pure-white blooms. All newly planted trees or shrubs should receive a heavy ground mulching of rough manure or litter, otherwise many of the roots may be killed, and a second severe check be administered.

Treatment of Frozen Plants.—If by any chance the plants in frames or houses become frozen, much care must be exercised in recovering them or they will be lost. They must be thawed very gradually, and as much in the dark as possible. House-grown plants may be stood under the stages, freely syringed with cold water, after which they should be surrounded with mats or blinds, and, thus darkened, they may be allowed to gradually recover. The temperature of the house to be gradually raised, and if there is insufficient piping to keep out the frost during the next night, the plants ought to remain where they were put to thaw, and further protected if need be. When it is found that the frost has reached the plants in pits or frames it is not advisable to syringe these, especially when they happen to be Zonal Pelargoniums or other plants that are liable to damp off, but they should be kept quite dark during the first day after the frost has broken, and afterwards gradually exposed to the light.

Unless very badly damaged this treatment will recover them. Low temperatures, especially when the weather is damp and close, are frequently more destructive than frosts, so many of the plants being liable to damp. At this time of the year little or no water should be given to any of the plants in cold houses or frames, as when dry at the roots they are much less liable to be injured either by frosts or damp. Neither should those plants in slightly heated houses be encouraged to grow much, as in this case the growth is almost certain to be weakly and unsuitable for striking later on. The more hardy sorts should receive plenty of air whenever the outer atmosphere is fairly dry, and advantage should be taken of dry days to examine all the plants in pits and frames, from which any decaying leaves ought to be removed and any decaying portions of stems be cut away, this naturally preventing a further spread of the evil. Alternantheras, Coleuses, and Iresines wintered on shelves or spare stages of forcing or other well-heated houses, must also be carefully watered, especially if they are not well rooted, the first-named in particular frequently becoming much stunted in growth unless very carefully treated.

THE BEE-KEEPER.

FOUL BROOD.

WHILE the bee-keeping world have their attentions upon the cause and cure of the above malady (now designated *bacilli alvei*), it may be appropriate to refer to the subject. It appears foul brood was known to exist at a very early date, and was well known to the ancients; but probably the Scotch derived their information at first from their countryman, Bonner, and took his advice, using caution before purchasing any hive, so that foul brood might not be present; deriving their information from experience, too, that feeding bees with foreign honey, foul brood followed. Such information would have prevented any Scotch bee-keeper of note making so great a mistake as did the late Mr. T. W. Woodbury by both purchasing affected hives from cottars and feeding with foreign honey, which ruined his apiary. Those bee-keepers who assert that the introduction of foul brood is due to Ligurian bees should take a note of that. Much as we all regretted Mr. Woodbury's loss at the time, good sprung from it and the discussion thereon, although much of it was fruitless. Many were the causes assigned, and the cures were no less in our own country as well as on the continent. The Germans attributed the disease to pollen, and one great master amongst them assured us that the origin of foul brood would never be discovered by any but a man of science. At that time, though perfectly cognisant that stifling bees in a humid atmosphere and overheating was followed by foul brood, I did not altogether refrain from following the popular belief that chilled brood had something to do with it. So mysterious did the disease work that I was, like many others, driven to my wit's end. I was led from circumstances to suspect the queen of being the author of the disease. Being in correspondence with Mr. Woodbury at the time, I made the suggestion to him, and had a reply through this Journal that caused me to wish I had thought twice before I submitted the question. Shortly after that Mr. Woodbury experienced a new disease which he termed dropsy, and simultaneously I had several bad cases, which I communicated and commented on, our views being then similar. Since then I have experienced many cases of the same disease, and from its nature have termed it "chlorine dropsical fever." Bees affected with this disease soon die. At a time when it threatened my apiary with destruction I sent some of the bees to a professor of natural science, but unfortunately the answer was contrary to facts. The above disease never proved infectious, but is hereditary. Neither in any of the above cases, nor with those having diseased queens, have I ever found foul brood follow or accompany it.

During the height of the discussion I turned my attention to it, endeavouring to solve the problem, and having previously been experimenting with milk in the transmission of disease, I applied it to foul brood and had satisfactory results as to its origin. My next attempts were to propagate the disease by inoculation and testing under what temperature

it reproduced itself soonest, which proved that heat was more favourable towards its development than cold, especially when there was much moisture present in the hive. After these discoveries I made a radical alteration in all my hives by giving more ventilation and more room; and taking the hint given by "R. S.," a Dumfriesshire clergyman, about carbolic acid being a quieter and disinfectant, I am glad to say that ever since my apiary has had an almost entire immunity from the disease. That foul brood is not common and natural to a hive, but accidental, I firmly believe; if it were the former it would be contrary to all nature, and bees would consequently very soon become extinct, because they could not rid themselves of it. There is nothing in nature but has been provided with some means of self-preservation against common enemies.

Notwithstanding all that has been written on the subject the cause of the disease is still problematical. Some say it is in the honey, others the pollen, while others point directly to the germ theory, which I believe to be the effect rather than the cause. I am also of the opinion that its origin must be sought for in the two first-named ingredients, and take for proof that I am correct in that in the hundreds of hives that have been cured by the "purgatorial" process described by "A Renfrewshire Bee-keeper." Although it was my opinion at one time that foul brood might be communicated by a queen whose organs were infested by germs in a state of development suitable for rapid reproduction, I do not entertain that opinion now, because a queen whose organs are diseased cannot survive long, owing to the rapid waste of animal tissue brought about by the presence of bacilli. Eggs would cease to be laid, and the hive would either perish or a young queen would have either to be supplied by the bee master or bees, after which the disease would go on unabated.

What is, then, the cause of foul brood? It is a change that is undergone in the food of the larvæ, depriving it of the power of sustaining life. How these changes so destructive to life are brought about are best explained in the following example. A heap of fresh grass is laid before a cow in good health and in milk. She eats it, and in a few hours it is digested, and part of it secreted as milk and blood, which nourishes the body, sustaining life and giving heat to the animal. If the cow is allowed to suckle her calf it will not only live but grow rapidly on Nature's food when taken in a natural way; but if a portion of the same cow's milk be drawn from her and set aside for a time under certain states of the atmosphere, a change takes place, and if that milk be given to another calf, instead of it acting as food will act as a poison, and the calf will die. That is a fact, and we see the same occurring often amongst the human family when meat in an unwholesome state has been taken—wholesome to-day but poison to-morrow. A similar change in the food of the larvæ is, I believe, the cause of foul brood. The food of the larvæ is composed of honey, pollen, and water, which singly may be wholesome, but when mingled through some previous transition from overheating or other cause prejudicial to the contents of the hive, bacilli of some form become active, and the mischief is done.

There is one thing of importance in connection with the queen and economy of the hive which I think will help to solve the question of foul brood. In all my experience I never knew eggs prevented from hatching through the presence of disease, owing to so many eggs being deposited by a queen or queens, and which are never hatched. Some people may differ from me, but I have satisfied myself on that point. If eggs contained bacilli I think many of them would never hatch. In fact, it has been observed that queens in hives affected with foul brood are liable to deposit not only healthy-looking eggs, but many of them, which brings me to a point to consider the whole question of egg-laying. Until the fertilisation of a young queen she is not attended to much by the workers, but is allowed to feed herself. Immediately after fertilisation she receives much attention, and is lavishly fed by the bees. Now, what is this food composed

of? Not of honey alone, I should think, but similar to that required for the larvæ. I do not think a queen could produce eggs at all, nor the great number required, besides keeping up the tear and wear of the body, on honey alone. We often hear people speaking of feeding bees to promote breeding, but without pollen it has no effect, though some deny this. The queen has always to be fed, but where pollen is absent no eggs are laid, nor does she show signs of a desire to lay; but when fed by the bees she cannot prevent it, and in that state drops many eggs, showing she cannot control it. This control belongs entirely to the bees, and illustrates well how they economise the eggs by feeding sparingly early in the season, increasing the feeding as the year advances, and withholding it altogether in the fall. If queens could voluntarily bring on laying without extra prepared food they would never cease laying until they were entirely exhausted. When bees are fed at an untimely season it hastens the death of the queen. When a queen is fed with pap made from the contents of a diseased hive it may account for the presence of bacilli in her body.

I think the whole question of foul brood lies in a nutshell. It is brought about by some change in the nature of both honey and pollen, or in the pap if placed too early in the cell; but when a hive is once affected the disease may be communicated by touch. It may either be acute or chronic, and when in the latter state may exist for years in a hive unfavourable to its development before it breaks out with virulence. But in either case the bee-keeper will study his own interest best, as well as that of his neighbour, if he stamps out the disease by destroying the contents of the hive and subjecting the bees and queen to a rigid purgatorial process, allowing sufficient time to elapse so that both bees and queen will have exhausted the contents of their stomachs before putting them into their permanent hive. When this treatment was properly performed I never knew a single case of failure.

The boiling of honey taken from an infected hive does not prevent it communicating the disease afresh. I have expressed my candid opinion on the cause of the disease, but I shall be glad if anyone will bring forward evidence to prove or refute my arguments.

ERRATUM.—At page 505, first column, last line but one, "than a dozen" should be "than half a dozen."—LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Chelsea, London.—*Catalogues of Garden and Flower Seeds, Roses, Fruit Trees, and Chrysanthemums.*

B. S. Williams, Upper Holloway, London, N.—*Catalogue of Flower and Vegetable Seeds.*

William Etherington, Swanscombe, Kent.—*List of Chrysanthemums.*

Lawson Seed and Nursery Company (Limited) Edinburgh.—*Catalogue of Forest and Ornamental Trees, Shrubs, &c.*

Chr. Lorenz, Erfurt.—*Catalogue of Flower and Vegetable Seeds (illustrated).*

Webb & Sons, Wordsley, Stourbridge.—*Spring Catalogue for 1886 (illustrated with coloured plates).*

H. & F. Sharpe, Wisbech.—*Wholesale Catalogue of Garden and Agricultural Seeds.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relat-

ing to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (Jackson).—A misprint of a figure occurred in our reply; however, if you had read the Journal as attentively as many do you would have found what you require in the same number on page 506.

Figure de Naples Pear (Somerset).—This Pear ripens in November, and is often very good indeed; it is described as follows in the "Fruit Manual":—"Fruit above medium size; oblong. Skin greenish yellow, entirely covered with thin delicate russet, and dark reddish brown on the side next the sun. Eye open, with very short segments, set in a wide shallow basin. Stalk three-quarters of an inch long, inserted without depression, frequently with a fleshy lip at the base. Flesh greenish white, huttery, and melting, with a rich sugary flavour. An excellent Pear; ripe in November. The tree is hardy and vigorous, and bears abundantly as a standard.

Dressing Vine Borders (Merchant).—By no means attempt to pick out the manure from the fibres or you will undo much of the good the mulching has done. Spread on 2 or 3 inches of good loam mixed with any wood ashes you may have, also lime rubbish, and if you can add a 6-inch potful of soot or bonemeal, or both, to each bushel of the compost it will be improved. On this spread a layer of manure; indeed, in that respect proceed exactly as you did last year. We are glad you have carried out our instructions so well, and the treatment has proved so satisfactory. The wood you have sent is very good indeed, and the abundance of fibrous roots is what we anticipated would be produced. Do not dig the borders nor let the roots get dry in summer, and you may expect a good crop of excellent Grapes. Your Vines are now in a healthy fruitful state, and we congratulate you on your good management.

Preparing Manure (A Very Old Subscriber).—It is seldom necessary to convey manure from stables to the site the hotbed is to occupy when that is near a residence. The manure can usually be prepared somewhere else, where it will not be offensive, and conveyed to the frame ground afterwards. When allowed to ferment in a heap in any convenient place, turned over four or five times, separating all adhering particles, and watering as may be needed for assisting fermentation, it is what is termed sweetened. It is when well prepared not offensive, but has a pungent and not a disagreeable smell that is not perceptible a short distance away. It is only in that condition that manure can be safely used. If offensive gases rise in a frame placed on a hotbed will destroy whatever plants, cuttings, or seedlings may be placed in the frame. It may be stated as a plain rule that if a candle will burn in a frame the air is safe for plants, but if the light is extinguished as soon as put in it is not safe, and more time must be allowed for the escape of deleterious gases and the consequent sweetening of the manure.

Hampstead Chrysanthemum Show (One of the Committee).—We are obliged by your letter, and assure you that if any omission occurred in inserting the fixture in our list it was not intentional. Schedules not infrequently arrive just a day too late for the dates of the shows to which they refer being inserted in the current issue, and between that and the issue following the exhibitions are over. We cannot positively say that this was so in the case of your schedule, because we have not a clear recollection whether it arrived with the tickets or not. We know the date of their receipt, and if the schedule came with them it was just too late for insertion in the published list. As to reporting, it is absolutely impossible that our representatives can attend all exhibitions. They travelled over a thousand miles during three weeks, and we think, therefore, did as much as could reasonably be expected. If you had sent a note of your show it would probably have been inserted. We have been told this week it was an excellent one, some of the groups splendid.

Cissus discolor, &c.—Grafting Apple and Plum Trees (A. G. F.).—The Cissus and other plants to which you refer in the first part of your letter are deciduous, and if you expect them to flower profusely they must be ripened until the whole of their foliage falls naturally. You can keep the Allamanda evergreen, but it will not rest so perfectly as if the foliage has been gradually and naturally ripened off. This should be done, for upon the ripened condition of the wood will entirely depend whether the plants make long or short growths before they flower after they are started again into growth. Cissus discolor will not lose the whole of its foliage during the winter—in fact, may be kept evergreen if deprived of rest to some extent. A shorter rest will suffice for this plant, and then it will not be so long without its heartful foliage. We rest our plants as completely as possible through January, and then prune them, and they soon start vigorously into growth again, and by this practice this plant is not long deciduous. You could keep them evergreen if you could maintain a night temperature in your house of 60°. But if you do this do not expect your plants to flower as well as if ripened and rested. Plum and Apple trees should be grafted about the end of March, but this depends very much upon the season whether an early or late one.

Pruning Peach Trees (D. E.).—Judging by your letter your trees would be much benefited by being lifted and the roots placed in good loam, with a liberal quantity of lime rubbish and some wood ashes incorporated. They are growing too strongly, and the more severely you prune them the stronger they will grow if you let the roots alone. With strong roots forcing their way into the subsoil there is almost certain to be correspondingly strong growths essentially fruitless in character; but an abundance of small fibres near the surface of the border produce medium-sized wood that is certain to be fruitful if the shoots are so thinly disposed in summer that the leaves develop under the full influence of light and air, and are kept quite free from insects. We should dig up the trees at once carefully, see that the border is well drained, and place the roots in fresh soil, taking particular care that all of a fibrous nature are kept moist during the operation. A depth of 18 inches of soil will suffice, and this not being wet when used you may press down firmly. If you have a sufficient number of medium-sized hard brown shoots for covering the space between the main branches the "strong succulent growths" may be cut

out entirely, and the shoots that issue from the base of these in spring be either rubbed out or pinched repeatedly in order to divert the sap where it may be required by other parts of the trees. Your aim should be to produce an equalisation of growth, and by timely disbudding so arrange the shoots in summer that there is no serious shading of the foliage by overcrowding. As a rule too many summer shoots are retained. Peach trees well managed in the growing season need little pruning when in a dormant state.

Eucharis amazonica (W. J. C.).—Judging from the leaves sent and the description of your plants, we are almost certain that they are attacked by the mite which has played such sad havoc amongst these plants during the past few years. Your plants will do no good until you succeed in eradicating this destructive pest. If you were to obtain clean stock, unless you destroyed all the plants you have and thoroughly cleaned the house, they would soon be as bad as those you have now. We advise you to keep them rather dry till the end of next month, and then turn them out of their pots and remove every particle of soil that has surrounded them to some distance and burn it. The drainage of the pots should be subjected to the same process. The pots should be cleaned by placing them in boiling water. We should cut away all the roots, and wash the bulbs in water as hot as it is possible to bear the hands in. After this, dip the bulbs in a strong solution of some insecticide, then repot them after they are dry, and be careful to use fresh pots. We should place them in another house as far from where they previously grew as possible. They would be all the better if you could plunge them in bottom heat to give them a start. We have never been troubled with this pest, but know that some cultivators have succeeded in stamping it out in the manner indicated, and we shall be glad to hear if you succeed in your object. The leaves sent of Clematis indivisa lohata appear as if they have been touched by frost. If you are certain this is not the case, examine the roots, and there we think you will discover the cause of your plant going off. Dryness will cause the leaves to go similar to those sent, also saturated soil. Wireworm in the soil will also cause this plant to fail. Some years ago we lost a fair-sized plant from this cause, and upon examination we found that the maggots had penetrated for a good distance the root portion of the stem.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (J. T. W.).—Beurré Diel.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (W. B., Leicestershire).—Statice latifolia.

COVENT GARDEN MARKET.—DECEMBER 23RD.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 0 to 3 6		Oranges	100 4 0 to 6 0	
" Canadian	10 0 15 0		Peaches	per doz. 0 0 0 0	
" Nova Scotia ..	10 0 12 6		Pears, kitchen ..	dozen 0 6 1 0	
Cobs, Kent	per 100 lbs. 22 0 25 0		" dessert	dozen 0 4 1 6	
Figs	dozen 0 0 0 0		Pine Apples English ..	lb. 1 0 1 6	
Grapes	lb. 0 6 3 0		Plums	1/2 sieve 0 0 0 0	
Lemons	case 15 0 21 0		St. Michael Pines ..	each 1 6 5 0	
Melons	each 0 0 0 0				

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen 1 0 to 0 0		Lettuce	dozen 1 0 to 1 6	
Asparagus	bundle 0 0 0 0		Mushrooms	punnet 0 6 1 0	
Beans, Kidney	lb. 0 0 0 0		Mustard and Cress ..	punnet 0 0 0 0	
Beet, Red	dozen 1 0 2 0		Onions	bunch 0 3 0 0	
Broccoli	bundle 0 9 1 0		Parsley	dozen bunches 2 0 3 0	
Brussels Sprouts ..	1/2 sieve 2 6 3 0		Parsnips	dozen 1 0 2 0	
Cabbage	dozen 0 0 0 0		Potatoes	cwt. 4 0 5 0	
Capsicums	100 1 6 2 0		" Kidney	cwt. 4 0 5 0	
Carrots	bunch 0 3 0 4		Rhubarb	bundle 0 0 0 0	
Cauliflowers	dozen 2 0 3 0		Salsafy	bundle 1 0 0 0	
Celery	bundle 1 6 2 0		Scorzonera	bundle 1 6 0 0	
Coleworts	doz. bunches 2 0 4 0		Seakale	per basket 2 0 2 6	
Cucumbers	each 0 0 0 0		Shallots	lb. 0 3 0 6	
Endive	dozen 1 0 2 0		Spinach	bushel 2 0 4 0	
Heros	bunch 0 2 0 0		Tomatoes	lb. 0 4 0 6	
Leeks	bunch 0 3 0 4		Turnips	bunch 0 4 0 0	



AGRICULTURAL PROGRESS.

LAYING down land in permanent pasture had brief notice in our first paper upon agricultural progress, but the subject is so important that we return to it now, hoping as we do that a more full, clear statement of how it is done and why it is worthy of more general attention may prove useful to

those of our readers to whom such hints are likely to make clear a part of farming that has so long been neglected and so little understood. To the home farmer the matter is one of especial importance, for in many an instance he is also the manager of an estate, and there are now few estates where some of the farms besides the home farm are not in hand. We know it is the boast of some agents that they have lost no tenants, but there are limits even to reductions of rent beyond which it is wrong to pass, and rather than make concessions which are positively ruinous to the landlord the land must be taken in hand and made the best of. A large area of land under corn cannot now be regarded as profitable, and we are bound to consider how we may economise labour and yet render the land fairly profitable.

Poor and foul is most of the land which comes to hand now. What shall we do with it? If we got fairly hold of it after Michaelmas—say by the middle of October—the drainage would have been seen to first of all, and then we should either ridge-plough it or break it up roughly with a steam cultivator, and so leave it till exposure to frost, wind, rain, and sunshine had brought it into condition for being cleaned and reduced to a fine tilth as early as possible in spring. A dressing of caustic lime is applied advantageously to almost all kinds of soil at any suitable time either in winter or spring before the preparation of the seed bed, but it is not absolutely indispensable. It will be apparent that cleaning of the soil and other preliminary work is neither elaborate nor expensive except when drainage has to be done. It is highly important, however, that the soil be rendered as free from foul weeds as possible, and be reduced to a fine tilth before sowing the seed.

Upon the selection and purity of the seed hangs success or failure. We require about 40 lbs. of seed to sow an acre of land. We may make the most careful selection of the best sorts mixed in due proportions, and send the order to a seedsman; yet we may not only fail to get what we require, but may have a large proportion of inferior seeds and chaff in the mixture. It is quite true that a few seedsmen supply pure and genuine Grass seeds, but it is equally true that very many do not do so, and the purchaser has to protect himself by buying his seed mixture for permanent pasture subject to botanical analysis. In the last annual report of the consulting botanist of the Royal Agricultural Society we find that one sample of Foxtail did not contain more than 2 per cent. of ripe seeds. One mixture consisted entirely of Rye Grass, with a little Trefoil and Clover, the Rye seed being infested with ergot; another mixture consisted of Rye Grass with only 1 per cent. of other Grasses and Clovers. Sixty-four per cent. of the samples of seed of Fiorin (*Agrostis alba*, *stolonifera*) were infested with ergot fungus, and 20 per cent. of the samples consisted of chaff up to half their bulk. These are some of the worst cases, and it was found that there was less adulteration generally than in former years. Yet the fact remains that adulteration is prevalent, and it is strongly recommended that the seeds should be procured separately and mixed at the farm, precisely in the same manner as we have been compelled to treat artificial manures. Considerable difference of opinion prevails as to the correct proportion of each sort of seed per acre. The fact that Cocksfoot is the most nutritious Grass, that it answers in all sorts of soil, taking so deep a hold of it as to suffer less from extremes of weather than any other Grass, affords the greatest bulk of hay and greatest amount of keep, and starts most quickly into growth after being cut, should be a strong inducement to use most of it, and we know instances where it has been used successfully with only a mixtures of Clovers.

No doubt the seed of Rye Grass is used for adulteration because it is so cheap. It is undoubtedly good for alternate husbandry, but not for permanent pasture. Fiorin should be altogether discarded owing to the certainty of ergot being brought into the pasture by it, and ergot is undoubtedly a fertile source of abortion, not only among ewes but among hay-fed cows. It is quite possible that when abortion spreads

through a herd and is regarded as a dreadful mystery or an infectious disorder that it may be owing solely to ergot in the hay consumed by the cows—*ergo*, never sow Fiorin, and although the seedsmen now recommend it, they will soon discard it from their catalogues when it proves unsaleable. Without assuming to be able to offer the very best selection of seeds for permanent pasture, we may safely enumerate one that has given us satisfaction—14 lbs. Cocksfoot, 6 lbs. each of Foxtail and Meadow Fescue, 3 lbs. each of Timothy and Tall Fescue, and 1 lb. each of Hard Fescue, Sheep's Fescue, Yarrow, Rough Meadow Grass, Crested Dogtail, Perennial Red Clover, Cow Grass, Dutch Clover, and Alsike. This quantity of seed is sufficient for an acre of land, and if the seed is only genuine and the culture good there need be very little doubt of a successful result. The mere sowing of the seed is insufficient to insure good pasture, and we hope to continue this important subject next week.

WORK ON THE HOME FARM.

Why should pigs be kept in stys reeking with filth? That the risk of loss from doing so is considerable has recently been made clear by the spread of a contagious disease among herds of pigs on so many farms that the markets were closed against store pigs for several weeks, and severe losses were incurred by many farmers. Well will it be if such losses lead to pigs being kept in greater comfort and cleanliness. Let the stys have clean dry litter daily; see that the drainage from sty and yard is open and thorough; keep the entire surface of walls and fences clean and sweet with frequent lime-washings; let the diet consist of nourishing wholesome food, avoid the use of garbage and filth, and mix common salt with the food frequently. Cattle Cabbage and roots make a wholesome change in the diet. Keep all purchased pigs in a separate yard for a few weeks in order to avoid all risk of infection. We have reason to believe that by the exercise of due care and attention to such details pigs may be kept in a healthy and thriving condition; without such care they are unsafe. No doubt the fact that pigs are so frequently kept in a filthy condition with impunity apparently renders such advice unnecessary, but knowing as we do how heavy the loss is when a diseased herd has to be slaughtered and buried, we are bound to warn our readers to be on their guard and to adopt measures of precaution in time.

Especial care is now taken to keep the breeding flocks safe from all disturbance or excitement. Shepherds must be on the alert to protect them from straying dogs or the incursions of hounds. Much harm is often done by horses and hounds out hunting at this season of the year, and while by no means wishing to decry fox-hunting, we deplore the mischief so often done through thoughtlessness. Abortion is unquestionably often traceable to fright arising from some such cause. See, too, that the ewes are not kept in muddy folds, nor must they have many Turnips before lambing. It is only by frequent repetition that we dare hope to do good by such advice. Care and painstaking lead to success as surely as does negligence to failure, and it is, alas! by negligence in trifles that our work is so often rendered futile. Let no implements, tools, carts, or waggons be left on the land, or at all exposed to weather after they have been used, but make it a fixed rule always to have them put under shelter, clean, and in good order. We recently found a waggon that had been left out in the rain, in the bottom of which there was an inch of water left to soak slowly into the boards. Rust and decay are always at work through some such cause. Take advantage of wet weather to examine all the tools of the farm, and have them repainted and put into thorough repair in readiness for next season.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1885. December.		Baromet- ter at 32.9 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	13	30.288	39.8	37.9	W.	36.4	43.5	34.2	44.3	26.8	0.014
Monday	14	30.401	42.4	41.8	S.W.	36.3	43.3	39.5	50.8	35.4	—
Tuesday	15	30.475	41.4	41.1	N.	37.2	43.9	40.9	63.4	35.7	—
Wednesday ..	16	30.501	38.8	38.2	S.E.	37.8	46.7	35.9	62.3	26.2	0.015
Thursday	17	30.499	46.2	46.2	W.	38.4	49.8	38.6	51.2	31.2	0.022
Friday	18	30.509	46.0	45.7	N.W.	40.6	49.1	45.3	50.0	43.6	—
Saturday	19	30.318	38.6	38.2	E.	41.3	44.1	38.2	46.3	37.7	—
		30.427	41.9	41.3		38.3	46.9	38.9	52.7	33.8	0.049

REMARKS.

13th.—Much warmer, dull, and rather damp.
14th.—Fair, with very slight fog.
15th.—Foggy till 10 A.M., then bright and pleasant; clear cold night.
16th.—Fine bright day.
17th.—Dull and damp.
18th.—Damp and foggy.
19th.—Rather drier.

A dull week, with very high barometer; temperature above the average and very uniform; and very little rain.—G. J. SYMONS.



COMING EVENTS

31	TH	Sale of Orchids at Stevens' Rooms.
1	F	Sale of Orchids at Protheroe's Rooms.
2	S	
3	SUN	2ND SUNDAY AFTER CHRISTMAS.
4	M	
5	TU	
6	W	

CHOICE WINTER FLOWERS.

THERE are plenty of choice winter-flowering plants—so many, in fact, that it is difficult to make a selection. It may not, however, be unseasonable to call attention to a few of the most worthy, and I will take the old Double White Camellia as fitting for a first place—a plant long known in gardens and everywhere admired. The wax-like flowers may be twisted from their place without a particle of wood attached, mounted on wire stems, and finally become a centrepiece in some choice bouquet or other floral arrangement, lasting fresh longer than many flowers which are cut with woody stems. That they may last as long as possible I use two and sometimes three wires to pierce the bloom, depending on its size, bending the ends downwards, and so form a stem by binding with a small piece of wire previous to closing in the stem, arranging a pinch of fresh green moss immediately under the calyx, by which means the flowers will retain all their original freshness, especially if placed for a short time in water up to this point, and so you may continue till the whole of the season's blooms have been utilised without the loss of wood. This is a great gain, for between the flower buds the growth bud for next year is already prominent, and to lose these first buds simply means to throw the plant the following year much later in flowering, since the ensuing year's bloom is dependent on axillary instead of terminal buds. Those nurserymen who possess very fine specimens secure annually without fail a good Christmas supply of these flowers, and I know some plants which carry 2000 blooms annually, from which not a particle of wood is detached except by accident. Unlike many midwinter flowers the Camellia will not endure forcing into bloom. The time to force it is in its growing season, and that not to an extent generally understood by the term. Encourage them to make an early growth and mature the wood as early as possible. Setting the buds will follow if all be well, and in reality the "winter" forcing has been done in spring. Besides the old Double White Camellia there are other excellent whites of fine form and substance, which must not be passed unnoticed. Among these are *C. fimbriata*, *candidissima*, *Mathottiana alba*, of fine form, pure in its whiteness, and massive in its bearing. Pearl is one of exquisite form and beautifully cupped; Montironi is also very pure white, and the same may be said of The Bride. Among deep-coloured and showy varieties Donkelaari, Chandleri, Mathottiana, Monarch, Bealii, Imbricata, and Reine des Fleurs stand out among the best. Then we have a superbly beautiful flower in Lady Hume's Blush, well known to all; and yet another, not so well known perhaps, is found in the semi double *reticulata*, of which a magnificent specimen may be found in the Botanical Gardens, Birmingham, laden annually with very large flowers of a rosy lake colour.

Bouvardias are of considerable importance, and year by year are gaining public favour, for no matter whether in buttonhole or spray, bouquet or vase, Bouvardias are sure to be prized, not more, perhaps, for their chaste and elegant

appearance than for their delicious fragrance—a fragrance not overpowering, but sufficient to please and to be welcomed by all comers. The culture of the Bouvardia has during the past few years been greatly simplified, and the genus has been enriched by many fine additions, including some excellent double scarlet varieties. Bouvardias, whether they have been grown in pots or the open ground, should now be accommodated with a temperature of from 55° to 65°, with a proportionate rise by sun heat, but which we get little of at this season. Plants which have been thoroughly ripened during the growing season will not fail to produce in great profusion their exceedingly useful flowers, especially if assisted with artificial manure. About one-half of a teaspoonful of any approved fertiliser to a plant in a 48-sized pot once a week is good, and I prefer using them after giving water, as they are not then so liable to be washed out of the pots as when applied immediately before watering.

The Epiphyllums are attractive and highly interesting plants for many purposes, but still seem generally overlooked. I do not regard them in the light of useful flowers for bouquet, buttonhole, or spray use, since their somewhat quaint forms do not adapt them specially for such use. Still they possess qualities which place them among the most valuable of winter flowers. As basket plants for the warm conservatory they are especially useful just now, their naturally pendant habit of growth admirably adapting them for this purpose, and being so distinct from all other winter flowers would seem to claim for them a position from which they are now almost excluded. The present is a good time to secure the plants and make a start. In some establishments there are varieties which seldom flower; these should be cut down to the point at which they commence branching, obtaining some pieces of any of the better forms of *E. truncatum* to graft on the branches of the old trunks, and by the ensuing year a fine specimen will be obtained. The grafting is very simple, as the stock and scion quickly unite. Simply split the growth of the stock asunder, and with a sharp knife push back the bark of the scion on either side, inserting this in the usual way, securing it either by tying or with the sharp spines of the *Pereskia*. *Pereskia aculeata* makes the best stock, and those required for baskets should be stout and firm, not more than a foot high at the graft. A greenhouse temperature suits them well, and a comparatively dry atmosphere. In summer a cold frame will be found the best place for them, or a cool house where abundance of air may be admitted. The soil should consist of strong fibrous loam, to which is added one-third its quantity of lumpy peat and a similar proportion of old mortar rubbish, with little well-decayed leaf soil and silver sand. Very little water is needed, for they do not root so vigorously as some, but when growing they will be benefited by an occasional syringing. Much the best collection of these plants, either as regard numbers or varieties, which I have met were grown some twelve years since in the Exotic Nurseries at Tooting. Speaking from memory I am of opinion that there were fifty varieties of *E. truncatum*, which every season made a grand show. A few of the best are *album violaceum*, *Ruckerianum* and the variety *rubrum*, *Russellianum superbum*, *violaceum grandiflorum* and *violaceum superbum*, *Salmonianum rubrum*, and *grandiflorum marginatum*, with *spectabile* and its forms.

Euphorbia fulgens at this season is one of the brightest occupants of the stove, excelling even the Bouvardia for brilliancy. The flowers, produced in wreath-like racemes, are at once ready for use, and its pleasing glaucous leaves, sometimes accompanied by a tinge of bronze, seem to harmonise more favourably with it than even Maidenhair Fern. It is a lovely plant, and where planted out and trained to the roof near the glass it flowers with remarkable freedom. Even after the main racemes have been removed it produces laterals freely, and these, though small, are very welcome. Be careful not to give this plant too much water, and provide thorough drainage.

We find an attractive plant in *Linum trigynum*, the East Indies Flax, which grows 2 feet high, and produces its golden yellow blossoms in great profusion. It is very pleasing when associated with other plants in the warm conservatory. The individual flowers do not last long, but as they are continuously produced plants may be had in flower for several months.

What are more popular at this season of the year than the flowers of the Christmas Rose? which, when protected by glass, become pure white, and hence of great value. From early in November, depending on the season to a great extent, flowers of this perennial may be had naturally in the open ground, the only protection needed being an old light or frame. For church decoration they are greatly in demand, owing probably to the association of its appropriate English name with this great festive season. None of the species or varieties is so useful for this purpose as *Helleborus niger* and the variety *major*. Very old inhabitants of our gardens these, which caused them to be used in former days ere glass structures were in vogue, and the valuable winter flowers we now have were unknown. This Christmas Rose must not be trifled with, as it is impatient of removal, and though annually thousands of its roots reach this country, still it is no more plentiful, and good clumps are quite a rarity. It cannot endure being lifted and potted, and after flowering transplanted again; for if this is repeated a few times it will do so at the cost of your plants. Rather plant them in beds permanently, and in such a way that some spare lights at liberty in autumn and winter may cover them. Place these on early in November, and there will be no occasion to disturb a plant.

Then we have late *Chrysanthemums* in plenty now, and what more welcome than their snowy blossoms? and year by year we are learning some new hint in their culture and how best to have them for Christmas and the New Year. There are plenty this season, at least more plentiful than last year; and some of the most valuable late whites are *Boule de Neige*, a snowy white reflexed variety of dwarf habit, and very free, little known yet. It has received its due reward, and been honoured with two certificates. Better known whites are *Princess Teck*, *Fair Maid of Guernsey*, *Ethel*, *Virginalis*, *Sarnia*, white delicately shaded flesh; and *Meg Merilees* are the best varieties for Christmas.

The *Poinsettia* must be included, for the whorl of coloured bracts is more than a substitute for flowers. For association with fine-foliage plants in the warm greenhouse or stove we have nothing at this season which can compare with them in brilliancy, and they may be had in all sizes, from 6 inches high to 6 feet.

Welcome, too, is the *Æthiopian* or *Nile Lily*, *Richardia æthiopica*, of which the pure white spathes render it at this season unique. It is too well known to need further commendation. The queenly *Lily of the Amazon*, *Eucharis amazonica*, is doubly welcome now. Then we have the fragrant *White Roman Hyacinths*, valuable for many purposes. These, if brought on gradually and introduced into heat as required, will last for a long time. I have already forced several hundreds, and as soon as the first or second flowers expand I move them to cooler quarters, where they grow sturdily. Nor must the *Lily of the Valley*, so graceful and sweet, be omitted. The ease with which this is forced in winter renders it of the greatest value, for it is sure to gain many admirers, and always commands a speedy sale. Other valuable plants are the *Cyclamens*, telling in any arrangement. Whether required for the flowers alone, or as pot plants for general decorative purposes, they are always prized. Many fine strains are now in commerce. How light and graceful for conservatory decoration, or grouping generally, are the *White Paris Daisies*, or *Marguerites*, at this season! Plants specially grown during summer—that is, cuttings inserted early in June—when rooted and potted, stopped once or twice during the season to make them bushy, will grow into fine plants and flower for at least three months

in the dullest part of winter. For this purpose nothing can equal that variety of *Chrysanthemum frutescens* known as *Madame Farfoullin*. This surpasses all the varieties as a midwinter flower and as a free and abundant bloomer. Ladies are particularly fond of it, choosing it frequently in preference to other flowers for sprays for the ballroom, where it is invariably admired.

Favourite flowers are *Tree Carnations*, in which case the brilliant scarlets seem to be more eagerly sought after than any other colour. Impatient of any approach to a close atmosphere, especially when accompanied by artificial heat, they should always occupy a light airy position. Free ventilation is essential to their well-being, for if the reverse they soon become sickly and weak. Green fly quickly infests them. A little fumigating with tobacco paper, however, will disperse the latter. The winter-flowering *Begonias* must not be overlooked while we have such fine decorative forms as *insignis*, *nitida*, *suavis*, and others. Very pretty and effective are these delicately coloured flowers, so pleasing for association with other plants. Then we have miscellaneous plants, such as *Habrothamnus*, single and double *Primulas*, *Zonal Pelargoniums* in variety, *Azaleas*, *Francoa ramosa*, *Lapagerias*, *Heliotropes*, the ever welcome and fragrant *Mignonette*, *Heather*, and *Epacris*; nor would I omit the lovely blue of *Agathea celestis* and *Hovea Celsi*. The former we frequently meet, but how seldom the latter or any of the other species of its genus. We also have the *Indian Daphnes* and *Jasmines*, such as *hirsutum*, *grandiflorum*, *gracillimum*, and others. These and many more all assist in making the winter gay with attractive flowers. In the foregoing remarks I have not given anything approaching a complete list of winter flowers—far from it, many more remain, sweet and pretty, as, for instance, the *Winter Heliotrope*, *Tussilago fragrans*, which, though a pest in many parts, is a charming plant in pots; and so on, in like manner, might others, somewhat neglected and common though they be, lend additional charms if only a little attention was bestowed upon them.—J. H. E.

GROS COLMAN VINE.

TILL within the past two years I have had little personal acquaintance with this Grape, and even now my experience is not extensive. But I have seen sufficient to convince me that in several respects it differs from every other Grape.

It is said that the Vine will not bear the sun so well as other varieties, and it has been recommended that when there is a choice it should be planted on the side of the house where there is the least sunlight. To this I have to say that I am now located in one of the warmest spots in England, and have the management of vineries which possibly admit a greater amount of light than any others in the country (the panes of glass in our new vinery are 37 by 20 inches, and the rafters are comparatively slight) yet *Gros Colman*, other conditions being suitable, is no more disposed to burn than any other variety. That its foliage gets discoloured and even shrivelled up early in the season in some situations I am bound to admit. The question then comes, What is the cause of this, and how can it be prevented? I will relate a little experience which bears on the matter.

Some Vines of several varieties were grown from eyes. Part of their number was planted out, the rest being shifted as they required it and grown as pot Vines in precisely similar soil. This was composed of turf cut about 2 to 2½ inches thick, with a liberal supply of old mortar and half-inch bones. As might be expected, under good treatment they soon made fine canes with short joints, and moderate, inclined to large leaves, and all went on apparently well till they had grown to their allotted length, and some of them actually began to ripen, when there were certain peculiarities in their behaviour which claimed attention. They looked at times as if they had been in company with a *Sensitive Plant*, and were trying to imitate its eccentricities. On a hot day more especially the leafstalks, instead of standing out at right angles to the stem, would turn backwards some couple of inches or more, as if they were drooping, though the leaves would remain rigid. They generally partially or wholly regained their proper position during the night. It was most marked with the Vines in the pots for a time, but afterwards those in the borders were affected in a like manner.

By-and-by matters assumed a more serious aspect. The foliage

of some of them began to dry up in patches, and there was a danger of the ripening being interfered with. Happily the one in charge was a patient learner and did not lose his head over the matter, but it made him feel uncomfortable. The pot Vines by this time had filled the pots with roots, and it was thought advisable, as the small quantity of compost must be partially exhausted, to give them a little help in the shape of liquid manure. The effect was very soon apparent. In less than twelve hours the leafstalks had altered their positions, but they fell again and again at intervals during the next two or three weeks, after which time they remained permanently in their proper form.

But could it be possible that the newly-formed borders 5½ feet wide and 2½ deep should require assistance also before they were twelve months old? Such was the case undoubtedly, for though they held out longer than the pots, the Vines there exhibited the same symptoms, and the same treatment cured them.

Afterwards it was observed that the leaves, though apparently good were thin, and when the feeding had been continued some little time, the leaves thickened considerably, some of them forming warty excrescences. With the exception of one or two of the pot Vines they all finished off very well, and such canes were matured as most people would be satisfied with. The exceptions were of the variety under notice, and every plant of this variety suffered more than did any other sort.

So much for the facts, now for the theory. I believe the soil used to be singularly deficient in potash, at least in an assimilable form, for whenever a manure has been applied which was rich in that element the effect has been most marked. On the other hand, according to such experiments as have been made, the addition of bones to the soil is not attended with any good result. I take it that the debris from the native rocks which contain an abundance of fossils provide a good supply of phosphate. The land is said to be hungry, and certain it is that for farming purposes it swallows as much manure as would poison a good fertile soil. As is very often the case, I believe the difference between fertility and sterility is simply an insufficient supply of one element, which a person with a rudimentary knowledge of chemistry could supply at a trifling cost.

Gros Colman according to my experience cannot flourish without an abundance of potash. Most soils doubtless contain a sufficiency at first, but it needs replenishing before Vines have been grown in it a great length of time.—W. M. TAYLOR.

USEFUL TURNIPS.

THE season of 1885 has not been one of the most favourable for the Turnip crop, especially on dry hot soils. With us Turnips have been so far plentiful, but not of the best quality. Our first sowing is made towards the end of February if the weather is favourable, the varieties being Early Milan and Sutton's Snowball. The former one we do not intend growing again, as its quality is not good enough on our soil, and as the latter, not being many days behind it, makes it really worth waiting for. Hereabouts Snowball is the only variety grown for all seasons, but I am not inclined to think it so good for late autumn and winter as Veitch's Red Globe and Chirk Castle Blackstone varieties. Red Globe we have had in splendid condition since September; in fact, this has proved itself the best flavoured this year so far. Chirk Castle is the variety we depend upon for late winter and spring, being very hardy and of fine quality. For exhibition, Sutton's Snowball is hardly to be surpassed, being of good shape and pure in colour.

Those who have a breadth of good Turnips to come in later on will, I think, be very fortunate, for in many districts this crop is very backward, owing to the most unfavourable state of the ground at the time of sowing. Field crops, too, are much in the same state of backwardness. Small sowings only are made in early spring, as a large percentage often run to seed. An east border is the site selected for early crops, and a north aspect we find the best suited for summer, being less exposed to hot sun.

For Turnips we give a fairly liberal dressing of manure either from the stables or cowyard; the latter is preferred for light soils, the former for heavy and close ground. It often happens that the gardener has no choice in this matter, having to use what he can get. Such is the case with us, as nothing but horse manure comes within our reach, although the ground sadly requires a change, and I have known instances when the opposite is the case respecting the kind of manure at hand.

It is a good plan to dust frequently with soot and wood ashes at the early stages of growth, as this tends to promote a quick development of leaves, and also helps to check the ravages of the much-dreaded Turnip fly. To have good Turnips this is often considered to be absolutely necessary, as if growth is slow they

are apt to become stringy and of no use but for flavouring purposes. The practice of sowing broadcast is not so generally practised as formerly, for when grown in this way there is greater difficulty in keeping them free from weeds than when sown in drills. There are many varieties of Turnips enumerated in catalogues, perhaps too many, but I think those mentioned in this note will be found sufficient in number for small gardens, and, indeed, in larger ones too. Most gardeners have their favourite varieties of vegetables, and Turnips are no exception to the rule, yet I doubt if there are three better or more reliable sorts grown than Snowball, Red Globe, and Chirk Castle for all-round purposes.—S. B.

THE PRIMULAS.

(Continued from page 539.)

P. MAGELLANICA, *Lehm.*—A splendid figure of this is given in Hooker's "Antarctic Flora," tab. 120. It is by many considered only an extreme form of *P. farinosa*, and so it may be in a wide sense. In "De Candolle's Prod." it is, however, thought worthy of a specific rank, as it is also on the Continent generally, and, indeed, when seen under cultivation it appears too distinct and well marked to be placed under *P. farinosa*. Where the latter will grow *P. magellanica* will be found to grow also. It likes a slightly drier soil, however, which is easily managed by raising a small mound. A mixture of peat and sand, or a place in the bog bed, as described above, suits it. It will be found all the better for protection during severe weather, which we manage with small squares of glass. It ripens seed well, by which means it is readily increased. It differs from *farinosa* chiefly in the shorter flower stalks or peduncles, in the position of the stamens in the tube of the corolla, and also in the colour of the flowers, they being white or very pale purple. It differs altogether in habit, much stouter, larger leaves, and longer scapes. These characters, as far as we have observed, are constant. It flowers with us a little earlier than *P. farinosa*. Mr. Darwin found it in the Magellan Straits.

P. MARGINATA, *Curt.* (the Silvery-edged Primrose).—We are so much in the habit of considering this plant distinct from all others in the genus, that the letterpress accompanying the figure on page 191 of the "Botanical Magazine," published May 1st, 1792, may not be without interest. The author above quoted says:—"There is no difficulty in determining the British plants of this genus, but much in ascertaining many of the foreign ones. Professor Jacquin has taken great pains to elucidate them in his 'Miscel. Austr.,' where fifteen are specifically described, none of which accord exactly with the plant here figured (*i.e.*, *P. marginata*), which has every appearance of being a distinct species. In the 'Hortus Kewensis' it is described as the *P. glutinosa* of the 'Flora Austriaca,' with which it agrees in many respects; but specimens sent from Vienna show it to be a different plant. In its farinaceous tendency it accords with the *Primula Auricula*, but is very unlike that plant as it is figured in its wild state by Professor Jacquin in the 'Flora Austriaca,' the leaves being much narrower, the flowers larger, and of adifferent colour. It differs from *P. glutinosa* in the shortness of its involucre, from *P. villosa* in having leaves much narrower, perfectly smooth in respect to villi, and in the colour of its blossoms, which approach that of the Lilac, but more especially in its disposition to become mealy, particularly on the edges of its leaves between the serratures, where it is so strong as to make the leaf appear with a white or silvery edge. As this character is so constant to it, and not to any other species of *Primula* that we are acquainted with, we have given to it the name of *marginata*." As we know this plant at the present time, even from newly imported specimens, it approaches no other near enough for a comparison. It has a distinctly shrubby habit, which we do not find equalled by any other European Primrose. *P. viscosa* and its numerous forms have a shrubby tendency, but they are far from being marked in this way, while *P. marginata* has usually from ten to a dozen bare stems, reminding one in winter of a miniature stunted Stone Pine. The leaves with us are always thickly covered with farina, which seems to have become hardened at the margins, and looks like enamel. They are oval or oblong, in type specimens, the serratures are small and numerous, while in cultivated forms, and especially in that called *cœrulea*, they are much larger, more irregular, and often double. The blade narrows gradually to the base, serratures more or less all the way, where it again dilates or suddenly broadens at the clasping point. The flower stalk is from 1 to 5 or 6 inches high, carrying an umbel of from three to a dozen or more large lilac, blue, or purplish flowers, varying in the varieties. Those which have received names are *cœrulea*, *densiflora*, *grandiflora*, &c. On the rockery, where it can get sufficient time, this is one of the easiest Primroses to grow, almost perpendicular positions being apparently the place where it does best. It requires, however, plenty of water during the growing season,

It flowers from February to April. It grows readily from cuttings, by which means it may be increased, or by seed, which it ripens fairly well.

Introduced about 1781 by Mr. Lee of Hammersmith. Native of the Alps of Dauphiny. Syn. *P. creuata*, Lam.

P. MINIMA, L.—Apart from the various forms or hybrids to which it has helped to give rise, this is the only *Primula* belonging to the section *Kablikia*, *Opiz.*, or *Chamaecallis*, *Schott.* It has to do with something over a dozen hybrids—in some predominating, in others hardly traceable, unless in the size and shape of the flowers. Among them may be mentioned *P. salisburyensis*, *P. pumila*, *P. Flörkeana*, *P. Huteri*, *P. Steinii*, *P. Forsteri*, *P. Weldeniana*, *P. biflora*, &c., all of them varying more or less from the type, and all worthy a select place on the rockery. Next to our own native species, *P. minima* is amongst the best known in gardens of all the European kinds, and perhaps the easiest to keep when once fairly started. In one or two of the old gardens we have seen large pieces of it in excellent health—in one particularly, amongst which were some bulbs quite at home, and apparently not at all disagreeing with the Primrose. The position was fully exposed, a few small stones dotted here and there among the plants, the soil, I believe, being taken from the ordinary garden border. The above is an instance of how this *Primula* will grow in the north, no trouble being attached to its cultivation at all compared with what we in the south have to get it even to grow at all without particular attention. During the months of May and June no sight could be prettier than a well-flowered clump of this alpine gem, the flowers practically covering the leaves, so thickly do they come from the little jagged rosettes. It has already been pointed out that most *Primulas* confine themselves either to the granite or calcareous regions. *P. minima* is, however, an exception; one collector finds it plentifully in one region, while another is just as successful in the other. In a wild state it varies very little, unless in height. It is, however, occasionally found with white flowers, and sometimes with two on a stem. It grows in little tufts from 1 to 2 or 3 inches high, forming compact little masses, the small cuneate leaves, deeply and sharply toothed at the apex only, forming little rosettes, attractive when open. The flower stalks almost sessile, rosy pink with a white silvery eye, and almost an inch in diameter. At present we have it doing well in pots firmly wedged between small pieces of tufa. It is increasing rapidly, and will soon cover the pot. We are convinced that the only road to success with this plant is a western exposure in a shallow and well-drained soil. It was introduced by Mr. Schleicher of Bex in 1818, and also by the Horticultural Society. Native habitats: On the highest mountains of Southern Europe, almost to the limits of perpetual snow, 7000 to 8000 feet elevation; calcareous Alps of Eastern Switzerland, 4000 to 8500 feet above sea level, &c. *P. serratifolia*, *Gussmus*, is a variety with more dentate leaves and nearly allied to *P. Sauteri*, also a variety.

P. MINUTISSIMA, *Jaquemont.*—A very small densely tufted stoloniferous species, mentioned in connection with *P. Hydei*, of which it is sometimes considered a variety. As we know the plant, however, it is much smaller in all its parts. Leaves less divided, and slightly mealy underneath. It seems perfectly hardy in the open air in pots; we have not yet tried it planted out. The surface of the pot is covered with small pieces of soft sandstone, the stolons running freely over them, attaching themselves by their tiny wiry roots. For this reason it should never be allowed to become dry, and a shady corner is preferred as being more retentive of moisture in such a position. It may be increased by taking these stolons off in spring and potting them singly. The whole plant, including the flower spike, is not more than an inch high; the leaves, formed in little rosettes, are spatulate, lanceolate, often pointed or obtuse, and irregularly toothed. The scape one to three-flowered, small, but bright rose-coloured. It flowers June to August. Native of Alpine Himalayas at 12,000 to 16,000 feet above sea level, and from Kashmir to Kumaon at 12,000 to 15,000 feet. Syn., *P. Saundersiana*, *Royle*; = *Stracheyi*, *Hk. fil.* Var. *P. spathulata* has larger leaves and much larger flowers. Sikkim.

P. MISTASSINICA, *Michx.*—The lesser American Bird's-eye Primrose derives its name, it is said, from its early appearance in spring. It is nearly allied to *P. farinosa*, and with that species forms the only wild representatives of the genus in the northern United States. It grows from 2 to 6 inches high, having numerous spatulate or wedge-oblong leaves, not distinctly veined, and devoid of farinose, which is one of the characteristics of the other, the broad part of the blade irregularly toothed from the middle to the apex. The flower scapes are sparingly mealy, carrying from one to eight flowers in loose umbel. Flowers half an inch in diameter when strong, flesh-coloured, the lobes of the corolla deeply embeccate. Calyx composed of five blunt sepals, each having about the same number of prominent ribs, and can be grown in the same

compost as *P. farinosa*, preferring a shady to a sunny position. It dies down in the same way as that species during winter, and protection from birds, &c., is of equal necessity. It was collected by Mr. Drummond and Dr. Richardson while engaged on the second Arctic expedition. It flowered with us about the middle of April, but generally early in May. Willoughby Mountain, the Upper Lakes, &c.

P. pusilla, *Goldie*, in "Edin. Phil. Jour.," p. 322, t. 11. = *P. farinosa*, *Nutt.*—D.

(To be continued.)

THE PEAR CONFERENCE.

I SEE there are some complaints respecting this, but some of them were rather premature, and altogether I think exhibitors have reason to feel satisfied with the result. The whole of the exhibitors from South Wales had a corrected list of names sent to them through the post, and in this way the main object of the Conference was fully accomplished. This has given complete satisfaction, and now I know of more than either one or two growers who are sorry they did not avail themselves of such an excellent opportunity of verifying or correcting the nomenclature of their fruit. This often happens in cases of the kind, but there is no reason it should do so, as anything which is submitted to the hands of the Royal Horticultural Society goes to a safe and impartial tribunal.—J. MUIR, *Margam Park, S. Wales.*

PLANTS CERTIFICATED IN 1885.

MESSRS J. VEITCH & SONS.

MANY novelties annually make their appearance in the well-known Chelsea Nurseries, both introductions and home-raised varieties or hybrids; and this year has been particularly prolific, for no less than sixty plants shown by Messrs. J. Veitch & Sons have been honoured with certificates. In so large a number it might be readily imagined that much diversity would be found, and this is the case; but still we find certain specialties taking the lead, as for instance Orchids, Amaryllises, and Rhododendrons, which are so extensively and well grown in the nursery named. A few notes on the principal novelties, the merits of which have been recognised by the Floral Committee and judges, may be useful now that many persons are thinking of adding some to their collections.

The first place may be suitably accorded to the Orchids, which comprise *Cattleya autumnalis*, *Cypripedium macropterum*, *C. Sedeni candidibulum*, *Dendrobium endocharis*, *Lælia Canhamiana*, *Masdevallia Gairiana*, and *Thunia Veitchiana*, while to these must be added *Cypripedium Godefroyæ* since it was announced with illustration in the spring catalogue for 1884 of this firm, though shown in flower by the two celebrated amateurs W. Lee, Esq., and Baron Schröder, to whom certificates were awarded. The three Ladies' Slippers named are very distinct. *C. macropterum* is a hybrid between *C. Lowi* and *C. superbium*, and curiously intermediate in characters. *C. Sedeni candidibulum* is one of the *C. longifolium* class crossed with *C. Schlimii album*, and while resembling *C. Sedeni* in form and habit it is much lighter in colour, so much in fact that some have designated it a "White *Sedeni*." *C. Godefroyæ* is a grand addition to the genus, and though as yet commanding a good price it will undoubtedly become one of the greatest favourites. In the form of the flowers it is somewhat like *C. concolor* and *C. niveum*, but it especially resembles the latter in the white or creamy ground colour. It is, however, more beautiful, the flowers being densely spotted with rich purplish crimson. The leaves are also prettily mottled, and the plant appears to be free-flowering. The habit and form of the flowers are admirably represented in the woodcut (fig. 85) for which we are indebted to Messrs. Veitch & Sons. The other certificated Orchids were described last week, except *Lælia Canhamiana* and *Cattleya autumnalis*, the former being a beautiful hybrid between *C. Mossiæ* and *Lælia purpurata*, with large richly coloured flowers, and the other is small-flowered *Cattleya* of pleasing colour, the crimson lip having a fine white throat and contrasting well with crimson purple sepals and petals.

The present is not the best time for seeing the attractions of Orchids, and unfortunately the three or four days' heavy fogs experienced recently have seriously affected many that were in flower, yet Messrs. Veitch have still in their houses a pleasing display and abundant promise of a finer one later on. The *Odontoglossums* of the *O. Alexandræ*, *O. Pescatorei*, and *O. Andersonianum* types are bearing scores of flowers of good varieties, while the bright little *Sopronitis grandiflora* imparts a most welcome colouring suspended from the roof. *Cypripediums*, including the form of *Sedeni* already mentioned, the useful and handsome *C. Leeanum superbum*, *C. niveum*, *C. marmorophyllum*, and *C. reticulatum*, are also flowering freely. The last named is an interesting species of the *C. longifolium* section with pale green flowers faintly veined with a darker shade, and having the petals narrow, tapering, and twisted corkscrew fashion. It will probably prove the progenitor of some distinct hybrids. Of *Dendrobiums* *D. Wardianum* is attractive in several houses, and some very distinct varieties are included in the collection. *Calanthes* are abundant, but the fogs have somewhat affected the colour of *C. Veitchi* and other bright-coloured forms. *Phalænopses* are showing flower buds in hundreds, and with favourable weather will shortly provide a grand show.

Nine *Amaryllises* have been certificated, but it is unnecessary to refer to them individually, for the general character of the Chelsea varieties is

now well known. So great an advance has been made that it is surprising new forms can still be obtained surpassing in some points those previously raised. By exercising extreme care and forethought in the crossings, however, it is evident that the capacity for improvement in the *Amaryllis* is by no means exhausted, and every season we confidently look for some new break amongst the innumerable seedlings raised. In form and size it does not seem possible to make any further advance, but the colours are being enriched and diversified, and by crossing with *A. reticulata*,

is said to have been one of the parents, but its influence is scarcely perceptible. There are now several of these and other varieties in flower at Chelsea, and quite recently the handsome double forms were very attractive.

It would be unnecessary to refer to all the miscellaneous plants which have been certificated, but prominent amongst those of sterling merit is *Amasonia punicea*, which has been repeatedly noted as a useful addition to our flowering stove plants. It is easily grown, readily propagated, and



Fig. 85.—*CYPRIPEDIUM GODEFROYE*.

a group is being formed which greatly extends the flowering season of these noble plants.

Rhododendrons of the greenhouse hybrid class are still commanding the attention they deserve as useful and beautiful flowering plants. The introductions and hybrids which have been placed in cultivation from the Chelsea Nursery are very numerous, and this year they have been increased by ten more, which comprise some of the best that have yet been obtained. The scarlet forms are *Apollo*, *Cardinale*, and *Militaire*, all different shades, with large blooms on compact heads. *Indian Yellow*, *Minerva*, and *Teysmanni* are yellow-flowered varieties; most welcome additions to the list. *Incarnatum floribundum* has buff and rose-tinted flowers, and *Curtisi* is brilliant crimson. *Pearl*, white and rose-tinted, and *Manglesi*, white with purple dots, are hybrids in which *R. Aucklandi*

lasts in good condition for so long a time that it cannot be too highly commended. It is, moreover, very distinct in appearance, the bright red bracts with yellowish flowers thickly clothing the gracefully arching branches. A very bold and imposing Fern is *Cyathea divergens* with its large drooping bipinnate fronds, and another good distinct Fern is *Davallia retusa*, which is capitally suited for baskets, the fronds being sometimes over a yard in length, with angular pinnules somewhat like *Adiantum trapeziforme*. *Lomariopsis buxifolia* is also a distinct and pretty Fern, which is of a climbing habit, and is seen to great advantage when clinging to the stem of a Tree Fern. The specific name refers to the pinnules, which bear some resemblance in form and colour to the leaves of the Box. *Nepenthes cincta* is a fine Pitcher Plant of interesting origin, the seeds having been imported with those of *N. Northiana*, but it is believed to be

a natural hybrid between that species and *N. albo-marginata*. It is of strong habit and bears leaves 18 inches to 2 feet in length, with pitchers 10 inches long, of a deep red colour, with darker spots and blotches. Tuberous Begonias have now become very numerous, and it is not easy to obtain new types amongst them. This is, however, being effected by crosses with *B. socotrana*, which was introduced from Socotra a year or two since. One of these hybrids, named John Heal, has been certificated, and gives much promise of being a useful Begonia, especially as its rich rosy flowers last a great time, either on the plant or cut and placed in water. Others, of a similar character as regards habit, have been raised and flowered, and probably will be seen at the shows during the coming year. Several varieties of Chrysanthemums and other plants have been equally honoured, but those named will suffice to illustrate the Veitchian novelties of the year.

THE CULTURE OF THE APPLE.

[The following practical paper was read by Mr. G. Picker before the Members of the Lincolnshire Gardeners' Association.]

THE Apple is a national fruit, and when we have a small crop we seem to be short of almost everything for the kitchen in the way of hardy fruits, because the Apple can be used in so many different ways. I believe that if one-third of the Apple trees in England were grubbed up and burnt the country would not suffer any loss; indeed, there would be a great gain instead. In some cases there is good ground occupied by worthless varieties of Apples that are only thrown to the pigs. If good sorts were planted in their place it would be a gain in several ways. It would benefit the owner or occupier, also the nurseryman in a small way, and, in fact, the country at large.

It is impossible to grow Apples on wet ground without underground drainage. It will produce unripened wood or shoots, inferior fruit, and little of that. The first severe frost will kill the ends of the young growth, which is, I think, one cause of canker, and the stems and branches will be covered with moss, &c. Therefore, I consider wet land in its natural state useless for fruit-growing. If it can be well drained that will alter the case. Three feet 6 inches to 4 feet is a useful depth of drains for fruit trees. In some cases we have to be ruled by outfall; 14 to 18 feet is a reasonable distance, according to the tenacity of the soil.

ON THE IMPROVEMENT OF THE SOIL.

If the soil is unsuitable we ought to do our best to improve it. Lime is a grand improver in many ways, by opening and sweetening, killing insects, and making the ground dryer and warmer. Give strong, raw, cold land six tons per acre, put it on unslaked, and work it in at once. Try one piece as mentioned, leave the rest without giving any lime, and note the difference. It will be easy to see which had lime and which had not, especially in the working of the ground. Three tons of lime per acre is a fair dressing for land which is in good order as to working and fertility. I also consider burnt earth a capital improver of all soils. I have used, with the best results, one-fourth of burnt earth incorporated with the natural soil. Where there is plenty of burnt earth incorporated with the natural soil the trees make less wood, more fruit buds; they have heavier and better coloured fruit, the soil works more freely, and the whole growth of the trees is sturdier. Road parings and scrapings, ditch parings, carted into a heap, a good dressing of hot lime, all well mixed together, the heap turned over in six months, give a little more lime if required, and then let it rest for three months; then turn it over again, and in the meantime, if there is any liquid manure to spare, throw some over the whole heap. In twelve months' time from carting together it will be found a valuable help in planting trees of every description. The soil to be planted ought to have a depth of 18 inches to 2 feet if possible; less will do, but not so well in hot weather. It is better to raise the soil than to take out any stone or clay from under the top soil; lowering it makes it colder and damper; raising it makes it dryer and warmer in wet weather. The ground should be well worked and cleaned before there is any attempt at planting. If the land is poor or unfertile it should have a good manuring to begin with, sixty tons per acre will not be too much for poor land. The manure ought to be kept as near the surface as possible, as that will keep the roots there also.

PLANTING.

What do we want? Profit, ornament, or a few fine fruits to show? My idea is that if we want profit we should plant standards on the Crab stock; for ornament, and, for a few fruits to show, plant bushes on the Paradise stock. Pyramids will do well on the Crab stock, but they do not bear one-sixth part as well as the standard. One standard at thirty years old, if properly planted, will bear more fruit than ten bushes of the same age, even if they live as long as thirty years. To be successful we must make a good start. If for an orchard of standard Apple

trees, mark out the rows or lines 30 feet apart each way. Thirty feet is quite close enough to be useful or profitable. The distance to plant dwarfs or bushes on the Crab stock is from 10 to 12 feet, according to the soil and the variety, whether it be a weak or a strong grower. For dwarfs on the Paradise stock 8 to 10 feet would be a useful distance. If the subsoil were stony, I should not trouble to do anything to the bottom of the hole except to ram all down firmly. If there were clay or marl I should put in 6 inches of drainage at the bottom. First I should put in 3 inches of rough drainage, and then 3 inches of finer material on the top; then ram all down firmly, leaving the top of the drainage convex to draw the water to the sides of the hole.

For standards, make the holes 8 feet across or 8 feet square. We will say that there are 18 inches of good soil, all of which we have taken out. Take out 6 inches of the lower or bad soil, placing in the drainage. The drainage being all in, mix with the natural soil some fresh compost. The heap mixed with lime and turned over will be useful now. Fill the hole to within 6 inches of the top, tread it down as it is put in if in working order, otherwise leave it for a few days. Drive down a strong stake in the centre of the hole, put the tree to be planted against the stake, give one tie round the tree and stake to keep all steady, spread out the roots evenly, and cut off all decayed and bruised portions. Cover all the bottom layer of roots, then lay out the top layer of roots, cover them, and tread down firmly. Leave the collar of the tree bare 1 inch and the soil concave, for top-dressing and holding water; stake securely. Drive down three stakes at equal distances from the stem; fasten three wires round the stem, first placing some old carpet to prevent injury; then take one wire to each stake; fasten securely; drive down each stake 1 or 2 inches to make all tight; give 6 inches of long manure for a mulch to keep out the cold, then all will be safe. The holes for the dwarfs ought to be 6 feet across and served the same as for standards. One stake will be enough for dwarfs, put at an angle of 45°. Drive it into the ground 3 feet from the stem, then bring it close to the stem and tie it.

TIME TO PLANT—PURCHASING THE TREES.

The end of October and the beginning of November is the best time in the year for planting fruit trees. Those properly taken up and planted again in October and November grow the following summer very little the worse for their removal. We may plant from October until February, weather permitting. Trees planted late will cause much more care and trouble in watering and will not make nearly so much growth.

It is better for purchasers to go to the nursery and choose their own trees. It is cheaper in the end to pay more for having the pick of the trees than to have what other people leave.

THE WRONG WAY TO PLANT FRUIT TREES.

Make a start on some ground that has been worked 6 or 9 inches deep. Dig out a hole 2 feet square and 3 feet deep, get some fresh soil and mix with the natural soil; never mind the subsoil. Fill in the hole with the mixed soil up to 1 foot of the top, plant the tree, cover the neck 6 inches to save staking, the trees waving to and fro with the wind; the planter waiting two or three years; the trees doing very little good. The only person blamed for things not going on as well as was expected is the nurseryman for sending out bad trees, just as in the same way the honest seedsman is blamed for sending out bad seeds, when in nine cases out of ten the fault lies with the sower.

ROOT-PRUNING.

There are several ways of performing this operation. The way that I have found the best is to take out a trench 4 to 6 feet from the stem, according to the size of the tree, digging down as deep as the roots go. I generally cut all the roots off where I start, except three or four small ones that run near the surface; these I leave for the support of the tree after the shortening of the stronger and deeper roots. It is easy to lift the trees nearer the surface if required. When so treated I work out the soil from underneath the tree; if the drainage is bad I add more, and beat all down firmly, then add one-fourth of good fresh compost, fill in the hole with some of the compost mixed with the soil taken out. Lay out the bottom tier of roots, cover them over with good soil, then lay out the next tier, cover over 5 or 6 inches, make firm, mulch with 4 inches of long manure from the stable. I have raised up trees 9 to 12 inches in the operation, changed trees affected with the "yellows," and which produced only very poor fruit, into trees bearing beautiful and green foliage, and fine fruit, after the treatment described.

I have seen root-pruning done with a vengeance—chop off the feeding roots, leaving the robber or robbers safe. Then I have seen trees that have been root-pruned that required propping

up after the ordeal of root-pruning. That kind of cure is worse than the disease.

MOVING APPLE TREES.

In the first place we must look what kind of tree we wish to remove, then we must see where we wish to place the tree after removal. We must make the hole for the new tree before it is taken up, or else have both operations going on at the same time. If a tree of from 10 to 12 feet high, then we must begin 7 or 9 feet from the stem, and take out a trench. Take out the soil with a steel fork to avoid injuring the roots. If there are any roots that go straight down, they should be cut off. Leave as large a ball of soil as there is strength to get the tree out of the hole. When the tree is undermined and ready for removal, of course the new home should be ready—that is, prepared the same as for standard trees, only larger if required. Planks should be put underneath the ball, lift it out of the hole, if not too large. If too large make an incline down to the roots. I also make an incline down to the side of the new hole, run a low truck down, ease the tree a little on one side, get the truck underneath, get loaded, draw out, take to the new hole, run down the incline into the middle of the hole, unload, draw out the truck; lay out the roots carefully in tiers the same as they grew before removal. When the hole is half filled, about 30 or 40 gallons of water is a capital addition in the way of fastening the tree. Let the water settle, then fill in the rest of the soil; mulch, and stake as advised for the standards.

FEEDING THE TREES.

In ninety cases out of a hundred, big things are not so easily overlooked as small ones. Apple culture is no exception. It is generally known that a great many Apple trees only bear every other year. I think the cause of that, in a great many cases, is want of food for the support of an annual crop. How can we expect fruit trees to produce a crop every year without being in a wonderfully productive soil without feeding? If trees are properly planted at first, and the roots still in good order, they will readily respond to any little help they may receive. When trees are annually bearing heavy crops without assistance, the soil must soon become exhausted through overcropping. Give abundance of liquid manure, the colour of Burton's shilling-per-gallon beer. Bearing trees want feeding all through the winter with plenty of liquid manure, provided the drainage is good. Trees well fed start away so much stronger in the spring than trees that are not so treated. The frost does not seem to have the same effect on well-fed trees, as those on stunted growth. I do not mean trees making a growth of 3 and 4 feet in one season or more, 10 to 15 inches is quite enough for bearing trees to make of new growth in one season. When the trees have got into an exhausted state through overcropping in arable land, take off 4 inches of the top soil as far as the roots extend, then add 6 inches of good decayed manure in its place. If on grass land, add the manure as a top-dressing. The autumn is the best time for that kind of renovation. In the following summer pour plenty of house sewage or liquid manure over the manure. I think that would be a remedy for debility if the trees are not too far gone or worn out. My idea is a good constitution, work well, and feed well.

PRUNING THE BRANCHES.

I can only say a few words on this subject. We cannot be too careful with the knife and saw. I do not mean that we ought not to use them—we cannot get on without them, but we want to have an idea of what we are going to prune. In the first place, we ought never to allow one branch to cross another if it is possible to avoid it. It is possible to prevent branches crossing if we take it in time. Begin with young trees, keep the branches thin enough, so as to allow the lateral branches to be no nearer than 12 inches, six main branches are quite enough for standard heads, and the main branches. Never allow any long rambling shoots to run away from the body of the trees, cut them clean out. We ought to try and keep every kind of tree as evenly balanced as possible. This plan is not difficult if we go the right way about it. Rub off all the shoots that are not wanted, stop those that are out-growing their limits or getting out of bounds. October is the best time to thin out branches where crowded. We can see much better how much to cut off when the leaves are on. November is the best month for ordinary pruning. Always cut to a bud pointing the same way you wish the shoot to grow. Nine inches is quite close enough for laterals to grow with small leaves; 12 inches is close enough for varieties with large leaves. Where trees are pruned early the buds break much stronger in the spring than trees do which are pruned late. It is a good plan to go over the trees the end of May or the beginning of June, and rub off all useless buds and

shoots that are not wanted for the formation of the trees, also to go over the trees every fortnight throughout June, July, and August to stop the branches or shoots so that they do not rob the weak ones or weak branches. Sawing off branches is a kind of pruning in which I have taken great interest, both in fruit and forest trees. I believe the worst kind of pruning to be where a branch has been sawn off a few inches from the stem, and left in that way. After a few years the snag generally dies and carries decay into the tree, whereas if the branches are cut close to the main stem, and evenly finished off with a carpenter's chisel, then dressed with a mixture of soot and cow dung, the wound will in time heal if the tree is healthy. The best way, I think, when a branch has to be sawn off, is to saw it in two pieces; cut the first portion of 18 inches or 2 feet from the stem to save accident to the tree. Cut one-fourth through on the under side first, then commence on the upper side, cut through; then cut the remaining piece through in the same way, on the under side first as before; finish off with a carpenter's chisel, make the cut quite smooth, and paint with soot and cow dung. Sometimes very large branches want cutting off at from three to six different places, or perhaps more, to save breakages.

GATHERING THE CROP.

There is great care required in gathering and storing fruit. Fruit is scarcely fit to look at when all the stalks are broken off in gathering, and this is not all. A great many fine fruits are first decayed at the junction with the fruitstalk through the rupture caused by the careless gatherer. I believe often one-third of the Apples and Pears are spoiled in the gathering and storing. What is the use of going to the expense of producing good fruit if there is not a suitable place to store it in when gathered? It is as though a man bought a horse and then had nowhere to keep it. To keep fruit well we want a place similar to a good cellar, with a regular cool temperature of from 40° to 45° Fahr. as near as we can get it. The time to gather the fruit is when it will part freely from the tree with lifting up, also when good fruit falls off without the wind blowing it down.

CANKER AND INSECTS.

Frost may cause canker when the wood does not get properly ripened. I know that when the roots get into a bad subsoil that will cause it. Lifting the roots out of bad soil and putting drainage and fresh soil, plenty of burnt earth, and old turf if it can be had will cure it if it is not too far gone—that is, the branches not eaten half through with it. The woolly aphis or American blight is a troublesome pest to deal with. I have found 1 oz. of petroleum mixed in one gallon of water, kept well agitated and syringed on the infested branches, checks its operations. The trees will want syringing about four times during the summer and autumn. When one tree is finished commence to syringe off the oil at once, then no harm will occur to the trees. Methylated spirits of wine is a great help in keeping it down. Get a small brush, dip it into the spirits of wine and just touch the insects. This will make short work with them. Bare a few of the large roots, and let them remain so most of the winter. Give a good dressing of hot lime, that will help to get rid of them as well for green fly. Give a good dusting of tobacco powder at night when the trees are damp, or syringe them. Syringe the powder off again next morning; in about four days dust again; that will also generally check green and black fly.

The following is a list of a few good varieties of Apples:—

Dessert Varieties.—Kerry Pippin, Red Astrachan, Irish Peach Cox's Orange Pippin, Ribston Pippin, Margil, Blenheim Pippin, Golden Winter Pearmain, Fearn's Pippin, Court Pendu Plat, Scarlet Nonpareil, Dutch Mignonne, Lord Burghley, Sturmer Pippin.

Culinary Varieties.—Early Julian, Domino, Lord Suffield, Stirling Castle, Golden Noble, Warner's King, Small's Admirable, Cellini, Alexander, Blenheim Pippin (one of the best), Dumelow's Seedling, New Hawthornden, Gloria Mundi, Alfriston, Rymer Yorkshire Greening, Bess Pool, Striped Beefing.

MUSHROOM CULTURE—CHRYSANTHEMUMS.

NOTWITHSTANDING all that Mr. Wright has done to show how easily Mushrooms can be cultivated, and that others have also shown repeatedly through the gardening press, as well as practically, how this can be accomplished, it is astonishing how many still believe that a supply of Mushrooms without the aid of an orthodox Mushroom house is a fiction. When in Leamington not long since I called to see Mr. Crump at the Ranelagh Gardens, and I found some excellent crops of Grapes there too, but I allude to Mr. Crump here because of his success as a cultivator of Mushrooms under very easy circumstances. In his Cucumber and Melon houses, and, in fact, any other house where he can make up a bed, he

utilises such space for his Mushroom beds, simply covering them with a little hay, and he gets a large quantity through the winter from these beds, and finds, what would alarm so many, that the light admitted through the glass roofs is a decided advantage to the Mushroom in size and quality. A few days since I met with another example of highly successful Mushroom culture in a cool greenhouse underneath a plant stage. The space was hoarded off into divisions about 3 feet square, and about 18 inches of ordinary stable manure, the straw being taken out, was placed, after being prepared in a shed. As soon as ready the manure was spawned, and 2 inches of ordinary soil placed upon it, and a wood shutter placed in front. Mr. J. Crook, who is gardener to W. Millward, Esq., Edgbaston, Birmingham, has adopted this plan yearly for a supply throughout the season, and obtains a wonderful lot of fine Mushrooms, and is rarely without them by spawning and working the beds in succession, and begins cutting from six weeks to two months after spawning. He uses Barter's Mushroom spawn, a very excellent stock, which appears to rival in quality the well-known milltrack spawn. Really the cultivation of the Mushroom is so very easy that it is to be regretted that so many more do not try it, as it can be done in cellars, outhouses, and so many odd places not really wanted for other purposes.

Mr. Crook is unquestionably one of the best amateur Chrysanthemum cultivators in the Midlands, and has made his mark at the Birmingham Chrysanthemum exhibitions. I was much pleased with his pyramidal Pompon plants, which were well grown and flowered. For such plants he cuts down his half-standards after blooming, and takes away all the suckers, leaving only the young shoots on the main stem. The plants will shortly be turned out of pots, shaken out, repotted, and tying and stopping will be attended to. I shall be very glad to see at our Chrysanthemum exhibitions a much larger number of naturally grown plants, but to get exhibitors out of the old groove of growth special classes must be made for them. I have seen many beautifully grown plants this year which were stopped in May and made comparatively dwarf well-grown plants with well-developed foliage to the pots and exceedingly well flowered.—GUILLAUME.

THE DIFFICULTIES OF LIFE

THE obstacles to be surmounted while we journey through life are many, and gardeners have their share of them. What is the gardeners' position? Have they been exempt from the almost universal distress? No, certainly not. Have not many of our finest establishments been reduced, while others are now sending part of their produce to market? a course that has considerably affected the price of garden produce to the disadvantage of many a struggling hard-working man who is depending entirely on this industry.

Many of the youths who enter gardens in country places find in their limited education their first difficulty. They find botanical names and other technical terms strange, and without assistance are a long time before they become familiar with their pronunciation and meaning. The next may probably be the difficulty of books, for out of a very small wage there is generally not much to spend in standard works the first year or two. Thanks to our many horticultural papers, there is no want of useful reading within the reach of all. This is one advantage our young men of the present have that was not enjoyed fifty years ago. When several young men are together there is always to be found amongst them a few books, and in some bothies the employer kindly provides a stock of books and also of the periodicals, which is a very commendable practice. A young man who finds himself favourably situated, and is inclined to study, may soon improve his defective education, and at the same time pick up a knowledge of many things necessary in connection with gardening. A great number of our young men are not thus favourably placed. It is a great disadvantage to be housed in a miserable hovel and without a companion, as many are, and still worse to be so placed with a bad companion. If one is alone and has access to books he can study at peace, though at a disadvantage, as there is no one to assist or exchange ideas; but when a lad is placed with one who has no interest in his work he is apt to be led away or otherwise deterred from study by noisy amusements and frivolity.

Many young men think that when they get a "head place" their difficulties will come to an end; but they soon find their mistake. Their masters are not prepared to give them all the hands they may think necessary to keep everything in order, while the lady of the establishment may be very particular about this or that being done just so, and at once, regardless of what her gardener may have on hands or its importance. Again, his master may not be disposed to build new houses and spend large sums of money for plants to fill them to suit the demands for cut flowers and plants for room decoration, &c., though the one may be altogether out of proportion to the other.

Some ladies are very particular about having their conservatory, which may be in connection with the house, always full of flowering plants; but they do not consider whether the accommodation for keeping up a supply is sufficient, and are often so inconsiderate as to cut flowers from them, thus giving endless extra labour for the gardener in continually bringing fresh plants to take the place of those cut from. This is often a gardener's grievance, but if the matter was better considered by ladies it would not be of such frequent occurrence. If they are fond of having their conservatory gay, they should look about other houses first for blooms, and they will generally find them, and right willingly will most gardeners see them cut and assist in getting any that may be out of reach, so that it saves cutting from plants specially grown for conservatory or house decoration. It is a delicate point for a servant to protest against even in

the most polite manner, as it may lead to the conclusion that the gardener is averse to cutting anything. Quite the opposite is generally the case. I, for one, like to see ladies cut and arrange their own flowers if they would do so judiciously, so as not to disfigure or injure the plants cut from, nor from groups specially arranged for effect. A good understanding between a gardener and those who like to gather their own flowers would remove one of the gardener's difficulties.

Gardeners sometimes have a difficulty in supplying vegetables in sufficient quantity to satisfy the demands of a large family or an extravagant cook. His garden may be too small crop it how he may, or the soil may not be very favourable for certain things standing the winter, and often those are just what is most wanted. Some cooks have a craze for Spinach all through the winter months, and nearly all want an endless supply of Parsley, two vegetables not very plentiful at certain seasons, but as sure as the supply is short the demand is certain to increase. Another difficulty is in knowing what to grow in quantity. A cook may want an extra supply of some vegetable, but before you get it grown she may be gone and another in her place, who may not use it, but wants a lot of something else for which the puzzled gardener is not specially prepared to supply. When a man has plenty of ground and hands to work it, no difficulty need be experienced; simply grow plenty of everything. But when a garden and other means are limited, and he wishes to grow only what will be used, it is no easy matter to do so without running the risk of coming sadly short of something else when brought face to face with a new cook. Again, some cooks will be satisfied with a very few herbs for flavouring her soups, while another will have a bit of everything in the garden in that line, and regrets that you have not got so and so. "Soup is nothing without it, you know," they will tell you.

There is also the difficulty of growing too much, which some have to contend with—by no means an agreeable side of the question—which has grown more so and of more frequent occurrence of late years. Give a good-sized garden, which will produce more than a small family will or care to consume. We are probably told that times are bad, and that we must make the most of fruit and vegetables that is to spare by sending them to market. You have very likely never been called upon to do this before. The first difficulty will be to find anyone to take your small quantities sent at indefinite periods. Such perishable fruits as Peaches, for instance, may all be used up one week, but not the next. You disappoint the man you sent them to a few times in this way, he looks elsewhere for a more certain supply, and probably when you send a larger lot than usual he will write to say he is "overstocked" and can only give so and so—half the value of fruit very likely. Your master sees the list of prices in Covent Garden, or may have occasion to be in a first-class fruiterer's shop, and have the curiosity to inquire the price. He compares that with the prices he has been getting and cannot understand it. He comes home convinced that he is being cheated in some way. If he is a straightforward gentleman he will speak about it at once, have it talked over with his gardener, and come to a proper understanding. But some gentlemen will not do this, but keep brooding over it, generally putting all the blame on the gardener, and sometimes even going as far as to question whether he is altogether honest. This marketing business is generally unsatisfactory to both employer and gardener. The former thinks he should have more for his produce. The latter thinks so too, but with a limited quantity, and that at the best irregular, he fails to see how he can do better. He also feels that fruit, &c., thrown thus into the market is a serious injury to market growers.

Amongst many difficulties, the weather is often unpropitious, and presents obstacles to overcome. When we begin to think "Gloomy winter's now awa," &c., she suddenly returns, carrying in her wake devastation amongst the tender fruit blossom. In the summer he has the drought to contend with—water, mulch, shade; and next thing will be a downpour of rain, battering his flower beds, splitting his choice Plums and Gooseberries, &c., and making weeds spring up in thousands in every direction.

"When biting Boreas fell and dour
Sharp shivers thro' the leafless bower,"

he has to think of many things. Shutters for various plants, flowers, and vegetables, not very plentiful sometimes, and fuel sometimes not very cheerfully given. There is the difficulty of enemies innumerable, small and great, and at all seasons. Bullfinches eat his fruit buds in winter; sparrows devastate his seed beds, his rows of Peas, &c., in spring and summer; and the thrushes and blackbirds devour his fruits. Amongst the creeping things there are slugs and snails, there are weevils and wireworms, and centipedes and caterpillars, grubs, green fly, scale, and bugs. In the face of such a host of enemies his policy must not be one of "peace at any price," but one of war.

But with all his difficulties has not the gardener many pleasures in the pursuit of his profession? Has he not one of the healthiest occupations, pursued in pleasant places, surrounded by Nature's choicest treasures from various parts of the globe? Does not the gardener have an equal pleasure and pride in seeing his master's table adorned with the choicest of fruits and flowers? Is it not a pleasure to have the confidence and respect of a good master, as thousands of gardeners have, enjoying a comfortable home away from the influence, the turmoil, and ups and downs of trade and commerce? And it is encouraging to know that many a worthy man is well provided for by a liberal master when he is bowed down with toil and age, and who enjoys a well-earned repose in the autumn years of his life, with but few difficulties to mar his meditations. Let us hope there are but few masters who would part with a good and faithful servant because of his years. But, at the same time, let each and all do something for themselves in their early manhood, and by doing so

help others, and then may expect some return in his declining years as a right, not of charity. Let me close these rambling thoughts by enumerating one more pleasure a gardener has—at least, I have a special pleasure, and am sure many more have—namely, the pleasure of reading the Journal every Thursday evening. To its Editor and its many readers I wish a happy New Year.—A WORKING GARDENER.

A USEFUL MANURE.

I WISH to bring before the notice of your readers a valuable manure too often neglected—viz., night soil. When properly prepared I know no manure to excel it in effectiveness, not even excepting the famous guano. It is more regular in its action than the former, and there is no risk in the use of it, like guano when used as a liquid manure. For Cockscombs, Gloxinias, Celosias, and Chinese Primulas it is excellent, and the latter seem to be especially at home in whatever soil the manure is mixed with. They can be grown easily to 18 to 20 inches span of foliage, producing large blooms superb in colour. I find it best to use very little leaf mould with this manure for Primulas, as they have a tendency to produce too much foliage. We grow all our Zonal Pelargoniums in 4-inch pots only, and with this manure they do extra well. On such kinds as Rev. A. Atkinson, Masterpiece, &c., I have had at one time six fully expanded trusses of bloom measuring from 15 to 19 inches in circumference, and that continuously through the season. One plant of Monroe's Little Heath Melon grown in a box containing one pailful of turfy loam and one of this manure produced four fruits 14 lbs. in weight; and one plant of Daniel's Duke of Edinburgh Cucumbers produced seven fruits from 24½ inches in length and 8 in circumference to 27½ long and 9½ inches in circumference, and straight as a ruler, with splendid bloom, and all the former receiving pure water only.

In preparing the material to mix with the night soil proceed as follows:—Procure some clay soil as heavy as possible, and let it dry, then get as many branches, old pea stakes, or any refuse of that kind, and make a good ring of them to begin with; then put on a layer of earth and sticks alternately, keeping the whole well together, leaving only a small aperture at the top to allow the smoke to escape and prevent it from blazing. If some bog earth be added it will be a benefit to the mixture, and when burnt out it may be watered and mixed. It is then ready for use in the closet, to which it is conveyed by a tin pipe with two stops in it similar to that in a powder flask, for regulating the supply. The calcined earth and charcoal, prevents the various gases from being dissipated in the atmosphere; the rough portion falling to the sides secure the phosphoric acid, potash, &c., contained in the urine. Or if having a quantity of night soil on hand, mix it with half the bulk of the earth, and leave it in some dry airy place for eight weeks or so. It will be found in a condition for mixing in any compost, being minutely sub-divided by the action of the earth and perfectly inodorous. I do not advance this as anything new, but as a simple means of securing all the good contained in so valuable a manure.—J. SWAN, *Kilmalcolm, Renfrewshire*.



WRITING in reference to the note on page 539, Messrs. JAMES CARTER & CO. observe that the prizes offered by them are open to all amateurs and gentlemen's gardeners, and that the error pointed out on the page quoted was corrected before any great number of copies of the "VADE MECUM" had been printed.

— THE ROYAL BOTANIC SOCIETY'S EXHIBITIONS FOR 1886 are fixed for the following dates:—Spring Exhibitions March 24th and April 14th. Summer Exhibitions May 19th and June 9th. Evening Fête June 30th. There will be an exhibition of American plants daily during June. Promenades take place every Wednesday from May 5th to July 28th, except May 19th and June 9th and 30th. Lectures at 4 P.M. on Fridays May to June.

— THE ANCIENT SOCIETY OF YORK FLORISTS held their annual dinner on the 23rd inst. at the White Swan Hotel, York, the City Sheriff, Mr. Samuel Wright, presiding. A number of toasts were proposed and honoured. Three silver cups, which were given as special prizes at the recent Chrysanthemum Show, held under the auspices of the Society, were also presented to the winners. The first—the City Sheriff's prize—was given to Mr. R. F. Jamieson, Hull, for the best thirty-six Chrysanthemum blooms. The next was the officers of the Society's prize, awarded to Mr. John Fielden, High Sheriff of Yorkshire (gardener, Mr. H. J. Clayton), for the best six bunches of Grapes, three varieties. The third prize—

given by the Mayor of York—was taken by Mr. Robert Baker, of The Retreat (gardener, Mr. J. Doe), for the best group of Chrysanthemums.

— A PROOF extract from the annual report of the METROPOLITAN PUBLIC GARDENS ASSOCIATION has been forwarded to us, and from it we learn that much good work has been performed during the year. Taking the three past seasons the following are given as the expenditure in improvements of various kinds:—1882-3, £849 3s. 2d.; 1883-4, £1159 11s. 3d.; 1884-5, £6587 1s. The total being £8595 15s. 5d. It is said that to carry out the work in hand about £4000 will be required. A considerable sum (£3642 2s. 6d.) was raised to be expended as wages to the "unemployed," and £864 remains to the credit of the Society, but additions are much needed to the General Fund, which is kept separate.

— MESSRS. H. CANNELL & SONS, Swanley, send us a large plate representing varieties of DOUBLE TUBEROUS BEGONIAS, of which so many greatly improved forms have been obtained in recent years. Some of them are most symmetrical in outline, with the petals as evenly arranged as in a Camellia or Ranunculus. A variety named Pæoniflora with globular drooping flowers is particularly useful for suspending in boxes or baskets.

— THE seed catalogue of a Continental firm gives a description of a SEMI-DOUBLE PELOX DRUMMONDI which is said to be "of dwarf compact growth with double and semi-double flowers. This new variety is not yet quite constant, the scarlet colour excepted." Judging from the woodcut the flowers are not unlike those of the double Bouvardia in form.

— ON Thursday evening, the 24th inst., a large and influential gathering of gentlemen took place in Carmichael's Temperance Hotel, Bridge of Allan, for the purpose of presenting A TESTIMONIAL TO DR. PATERSON in appreciation of his long and valued services as a doctor in Bridge of Allan and neighbourhood. Mr. Laurence Pullar, chief magistrate, occupied the chair, and the Rev. Dr. Ross performed the duties of croupier. There were also present—Dr. Haldane, Dr. Rogers, Colonel Blair, Messrs. T. Cumming, Wm. King, John Henderson, H. Robertson, Wm. Reid, R. Greenhorn, Wm. Cousine, Wm. Haldane, J. H. Henderson, and many others. In the course of several speeches, Dr. Paterson's services as "father and founder of Bridge of Allan" were referred to in flattering terms, his experience as a medical man and his knowledge as an antiquary and amateur horticulturist also receiving appropriate recognition. The presentation consisted of a cheque for £340, enclosed in a silver casket, bearing the following inscription:—"Presented to Dr. Alexander Paterson, along with a cheque, given by 260 subscribers over the whole country, in testimony of their regard for him as a successful physician, a kind friend to the poor, and a public benefactor to the inhabitants of Bridge of Allan."

— GARDENING APPOINTMENT. — Mr. W. Swan, who has been gardener at Oakley, Followfield, Manchester, for many years, and has lately been Honorary Secretary to the Manchester Horticultural Improvement Society, has now left the district, having been appointed head gardener to E. G. Wrigley, Esq., Howick House, Preston, Lancashire. Mr. Upjohn of Worsley Hall Gardens, Manchester, succeeds Mr. Swan in the secretaryship of the Society named.

— THE second volume of the ILLUSTRATED DICTIONARY OF GARDENING, published by G. Upcott Gill, 170, Strand, continues the subjects in the same manner as in the preceding volume, from Faëa to Ozothamnus, and contains a great number of illustrations from various sources, the majority being good representations of the respective plants. A commendable accuracy is observable throughout, and the cultural information is reliable. A coloured plate of Snowdrops forms the frontispiece to a neatly printed and substantially bound volume.

— A CORRESPONDENT gives the following as the number of BEDDING PLANTS USED IN HYDE PARK during the past season:—One hundred thousand Pelargoniums in over 100 varieties. Amongst the favourites were: Henry Jacoby, Rev. Atkinson, Mrs. Turner, and Eurydice; 60,000 Lobelias, 70,000 Alternantheras, 5000 Heliotropes, 5000 Ageratums, 30,000 Calceolarias, bedding varieties, 60,000 Echeverias, 2000 Begonias, single, 1000 Fuchsias, 20,000 Coleus, 20,000 Carnations; Pyrethrum is not much used, but 50,000 Spargelia aurea, 40,000 Golden Creeping Jenny, and 40,000 Cinerarias, besides Celosias, Centaureas, and other annuals and varieties of bedding plants.

— WE learn that "ILLUSTRATIONS" is the title of a threepenny monthly magazine which, under the editorship of Mr. Francis George

Heath, will commence in January. It is designed "to occupy a position not yet filled," and will be "a pictorial review of knowledge of all kinds, comprehending amusements, art, domestic economy, inventions, literature, and science." The publishers will be Messrs. Wells Gardner, Darton and Co.

— AN American writer wishes that "the name CHRYSANTHEMUM could be shortened, as it causes some trouble to those who are not familiar with botanical names. We hear them called Cassanthiums, Chrysanthiums, as well as Chrysantumbums, Chrysants, and Chryschian-thems." To these might be added a daring abbreviation in common use amongst English growers—namely, "the Mums."

— WE have received a copy of SUTTON'S POCKET GARDEN CALENDAR FOR 1886, a neat little production, giving with the ordinary calendrical matter, condensed instructions in garden operations for each month.

— THE *Journal des Roses* for December gives a coloured plate of the Hybrid Perpetual Rose, GLOIRE DE BOUCHET, which is said to have been raised at Bouchet, the residence of M. Maxime de la Rocheterie, the President of the Orleans Horticultural Society. It appears that the gardener, M. Pignard, sowed a number of seeds selected from the best varieties, and amongst the resulting progeny the variety named was almost the only one which attracted much attention. It was subsequently tried by M. Scipion Cochet at Suisnes, where it proved quite satisfactory. In colour it is described as approaching Margottin's Maréchal Forey, and in general characters as resembling Gonod's Madame de Moreau, but with larger flowers and of a more lively colour, a bright reddish scarlet.

TRAINED SPECIMEN CHRYSANTHEMUMS.

ON page 546 Mr. Iggulden says he should not be grieved if these were altogether excluded from shows, and that he believes many share in his opinion. I am inclined to think that he is only one in a thousand. I say, as before, that a flower show is nothing without good specimens, whether they be Chrysanthemums or any other plants. Your correspondent wishes to know if they are profitable. We do not grow them for profit; they are grown for the pleasure of their owner. Mr. Iggulden also wishes to know how they look at home; they look equally as well as at the show, and I think a little better, because they are more effective by being mixed—incurved and Japanese, and Pompons together—grouped as Mr. Iggulden prefers; but they are all trained specimens, and they are greatly admired by my employers and their many friends. Our visitors give me great praise for the training. Mr. Iggulden says they require much more house room than they deserve. In my opinion they well deserve the house room they require, and if this cannot be had no one ought to attempt to grow and train them as specimens; nor should persons who have not the time nor the skill. I admit if they lose their foliage and show the stakes they look very unsightly, but well-grown plants are not in that condition.

Mr. Iggulden may think because I grow so many of these that I have nothing to cut from. That is not so. I have been cutting Chrysanthemum blooms in abundance from the middle of August up to the present time for home decoration, and many boxfuls have been sent away to other places. It may "grieve" Mr. Iggulden more when I say that my employers want me to grow a larger number of these specimens than I have ever done. It may please your correspondent, perhaps, if I tell him that I had thought of giving up showing, and it may be so, but the plants will be grown just the same and more of them. I have nothing to say against grouping as your correspondent prefers. I like the style very much, and should like to see more of it at the shows; but for all that I am in favour of trained specimens when well finished. I should like to know what the Committees of the different Chrysanthemum Societies have to say about trained specimens being admitted at their shows—do they prefer them or not?—W. MONK.

THE cultivation of the above should be encouraged, and liberal prizes offered at our annual exhibition for competition, and should include every variety. Among the pleasing but beautiful varieties, some of them extremely novel in character, exhibited by Messrs. H. Cannell & Sons of Swanley, many could be found that would prove highly interesting on the exhibition table, would not require so much staking, and would be a source of attraction at home as pot plants. My friend Mr. Monk and myself can recall a period of thirty years ago, when some grand specimens were shown with healthy foliage and abundance of flowers. They were selected on account of their adaptation for pot culture. I have listened to the throng of horticulturists who would admire and discuss the merit of those marvels of productions as exhibited by Messrs. Scruby, Wetherall, Ward, Holmes, Wiggins, and George—the majority of which enthusiastic cultivators are gathered to their fathers. We have seen some fine blooms this year, requiring superb skill to produce them, but we should not forget all tastes are not alike.—J. F. McELROY, *Camden Hill, Kensington.*

COOK'S EARLY CABBAGE.—I see in the *Journal* that Mr. Inglis and Mr. Oliver have each sent you a packet of Cabbage seed for trial. I take

the liberty of sending one also of what I consider the true stock of Cook's Early Cabbage, having grown and saved the seed of it for twenty years, the stock being obtained from Mr. Cook. This is a good spring Cabbage, but to have it in perfection sow in July and plant in September, and Cabbages will be produced second to none for quality or earliness.—S.

[The seed shall be sown with the other in due time.]

THE MONARCH PLUM (RIVERS).

THIS Plum was raised from a stone of Cooper's Large Red, generally known in this country as "La Delicieuse" or "Lady Lucy" of some of the Kentish fruit-growers, and said by Downing to be raised by Mr. Joseph Cooper of New Jersey from a stone of the Orleans. The fruit of the Monarch is very large, and in shape roundish oval, a dark purplish blue in colour; it is freestone, with solid flesh of excellent quality. The young shoots are downy, but the down disappears on the older wood. The growth of the tree is very robust, forming a vigorous natural pyramid, and producing fruit spurs in abundance at an early stage. The fruit ripens about the 25th of September in the south, and is quite free from any tendency to crack. It is therefore likely to prove a valuable fruit for the grower, ripening after the glut of other Plums. Cultivated, on walls or as a cordon it will produce very fine specimens, and as a standard or pyramid it makes a very prolific tree. The Grand Duke, another large late Plum, also originated from the La Delicieuse.

STRAWBERRY PLANTS IN WINTER.

UNDER the above head your correspondent, "A Kitchen Gardener," refers to the winter treatment of Strawberries in pots for forcing, which is, without doubt, a subject well worthy of discussion at the present time. I think the majority who force these plants in any quantity commence operations long before March, and have by that date many hundreds of plants in different stages of development. Such must be the case in all establishments where the fruit is required early in the season, as it is possible to produce them, and a continuous supply maintained afterwards for use daily or to be packed two or three times a week until they can be gathered outside. This is the position of many, and perhaps at no season are Strawberries more welcome than during the early months of the year, when the number of dishes for dessert are somewhat limited.

I was under the impression that some of the ideas put forward by your correspondent on the treatment of the plants during the winter were obsolete. For instance, the system of storing the plants in a heap by packing row after row one above the other with straw, litter, or ashes amongst them cannot be too strongly condemned. The other plan advocated by "A Kitchen Gardener" of storing them under a wall on their sides and allowing them to become dry should not be practised. Both these systems are unnatural and prove exhausting to the plants. The Strawberry plant during the whole of the winter months is naturally moist at its roots, and why should the opposite extreme be practised with this plant when grown in a pot? Your correspondent knows that this drying system is radically wrong, for he says, "These are not kept so dry at the roots as those at the bottom of the wall," this having reference to those plants stored in a cold frame. The above clearly shows that "A Kitchen Gardener" does not believe that the plants are benefited by being kept dry, or he would practise the same treatment with those protected in a frame. It appears to me that he is prepared to sacrifice that which is of vital importance to the well-being of the plants for the mere purpose of protecting a few pots from being destroyed by frost. Not only does your correspondent practise this treatment, but he advises others to subject their plants to an unnatural system for the same purpose. If this is the only reason that can be adduced for keeping the plants dry the least that can be said for it is that it is a very poor one.

In no stage should these plants be dry at their roots, and all who may wish to preserve their plants in the best possible condition, whether they be few or many, should not adopt a system likely to prove injurious to the plants. The Strawberry is perfectly hardy, even when grown in pots, and has not been injured in the least when the temperature has fallen below zero during very severe winters; in fact, we have always found these plants start more quickly into growth after being exposed during a sharp winter. During the severe weather alluded to we have not lost more than perhaps a score or two of pots out of 1500 or more. This has generally been due to the pots being partially exposed instead of being covered with the material used for protecting them.

My advice to all is to keep their plants outside, for they will pass the winter just as safely as if in cold frames, and will start with greater freedom into growth. In order to protect the pots they should be plunged after growth has ceased in ashes or amongst leaves. In whichever they may be plunged the rim of the pots should be protected as much as possible. I am never particular about the pots being filled with the ashes or leaves used for plunging as long as the crowns are not buried. When the plants are plunged as thickly together as possible very few pots will be broken. If strong the plants will possess large leaves, which will extend well beyond the pots in which they are growing, and these assist in protecting the rim of the pots. If very severe weather sets in and is likely to last, mats are placed over the plants, or a little clean dry straw. This protection is given to protect the pots, the plants would be better

without it. During the whole of the time the plants are outside they are not allowed to suffer by want of water; should they show signs of being dry they are watered. Our plants remain outside from the time they are

not forced so early as those that have remained outside. This is only what need be expected if he closes the frame and protects them from frost, for the plants protected would not be so completely rested as those



FIG. 86.—THE MONARCH PLUM (RIVERS').

layered into their fruiting pots until they are removed indoors in batches to be forced.

Your correspondent states that the plants protected in cold frames do

exposed. If I placed my plants in frames they would be freely exposed to all ordinary frosts, and only protected by closing the frames during very severe weather, and then not for the benefit of the plants, but for the

purpose of preserving the pots. Cold frames and cold houses, such as vineries and Peach houses, should be avoided for these plants until growth has been brought to a standstill and the plants have rested, for after this no harm will be done even if they are brought gradually forward in such structures. But if placed in them before they have been exposed to a few sharp frosts they do not rest, but continue growing slowly, and when wanted to come forward quickly in heat they fail to do so.

However early runners may be taken in the season and ripened in autumn they fail to start quickly into growth when introduced into the forcing house unless they have been exposed to a sharp frost or two. A few early frosts in autumn are of the greatest advantage, and should be welcomed by all who have to produce ripe Strawberries as early in the season as possible. If a batch of plants are placed in the early Peach house or vinery when started before any frosts have occurred, and others are left outside a month longer to have a frost or two on them, and then introduced into gentle warmth, they will produce ripe fruit first. Frost sends plants completely to rest, and afterwards they will start freely and steadily into growth under favourable conditions. Not only is this the case with Strawberries for early forcing, but with Rhubarb, Seakale, Lily of the Valley, Spiræas, hardy Azaleas, Rhododendrons, Lilacs, and many other plants.—A NORTHERNER.

THE GARDENIA.

NOTWITHSTANDING what has been written against this popular plant, the great demand for Gardenia blooms at all times, and the high price they fetch, especially at this season, testify to its being a general favourite. With accommodation and forethought exercised in preparing or retarding the plants Gardenia blooms may be had during the six dullest months of the year, and in point of usefulness for decorations of every description they have few equals. Yet in few places do we see Gardenias get the cultural attention which their merits deserve or their requirements demand. Although they are very subject to insects it is quite possible to keep them clean. But seemingly some cultivators are under the impression that Gardenias breed insects spontaneously. This reminds me forcibly of a certain writer some few years ago, and, if I mistake not, in the pages of the *Journal*. To use his own words he said he kept a few mealy bugs on his Vines merely for the sake of experimenting with. But my advice to all who have to deal with either Vines or Gardenias is, if possible, to keep no insects—no not even to experiment upon. However, I have more than once been obliged to experiment with a cheap and effectual insecticide on Gardenias that were badly infested with both scale and mealy bug. This insecticide is petroleum, used at the rate of two wineglasses to the gallon of water. The principal point is in keeping the oil thoroughly incorporated with the water. While the operator is applying the insecticide with a syringe, another man should be mixing the oil and water in a pail with a syringe. The plants if in pots can be laid on their sides on a hand-barrow and thoroughly drenched, allowing the insecticide to remain on the plants for about ten minutes, and then syringe it off with clean water. When Gardenias are planted out we only use one glassful of petroleum to the gallon of water, and never find it to injure the roots.

The Gardenia may be propagated by cuttings at almost any time, and although they are not difficult to strike they often remain callused for a long time before emitting roots. Consequently we prefer striking them in February, the cuttings being made in the usual way, then are inserted singly into thumb pots in a compost of peat and sand. They are then plunged in bottom heat in the propagating pit until they are well rooted, when they may be shifted into 4-inch pots; and if encouraged on with a little bottom heat, by the month of July or August they will be found ready for shifting into a 6-inch pot, which will be large enough for the first season. The pots should be clean and thoroughly drained, with a little moss or sphagnum laid over the crocks. The compost we prefer is equal parts of the best fibry peat and loam, with a little leaf mould, and an 8-inch potful of bonemeal to the barrow-load of soil, and sufficient river sand to keep the whole porous. The loam used should not be of a calcareous nature.

In potting press the soil firmly, and keep the house in which the plants are growing close and moist for a few days until the roots take to the new soil. If properly attended to in watering, pinching, and syringing they will make good bushy plants the first season. But should the object of the cultivator be to have specimen plants in a short time, it is advisable to remove all flower buds the first year and keep the plants growing on in a little bottom heat. Plants intended to bloom should not be pinched after August. In regard to potting established plants there is a diversity of opinion as to when this should be done. Some growers hold that the best time is when the plants commence to set their flower buds, while others are of opinion that they ought to be repotted when blooming ceases, and this is the time we generally cut back all straggling shoots and repot if necessary. When well supplied

with liquid manure, while making their growth and swelling their flower buds, repotting every season may not be found requisite.

The Gardenia delights in a warm moist atmosphere, and should be kept well syringed daily, unless when in bloom, with sufficient light and air, which will solidify the wood, and insure a good set of flower buds.—A. SMITH.

CELERY—SPECIAL VARIETIES.

WHITE PLUME.—Certainly the present time must be admitted as seasonable for expressing opinions respecting some of the many varieties of useful vegetables. White Plume Celery especially has of late come in for a large share of attention, and the opinions are rather condemnatory; but this is probably due to the expectation that the heads would be, as its name suggests, perfect white plumes, requiring no earthing. The first was extremely improbable in my mind, and the latter impractical, at least in our climate, which is damp and subject to severe frosts, and most readers will agree as to how the most perfect White Plume would fare with 16° of frost on Nov. 17th and over 20° on Dec. 7th; yet I must admit that some heads left unearthed as an experiment have proved hardy under such trying circumstances, but are entirely unfit for use in every way, nor do I think it will anywhere, independent of climate, prove of good quality as recommended. I consider it has been wrongly described; treating it, however, as other kinds are treated in all respects it has proved with us a valuable addition, growing from 18 inches to 2 feet high, very stout, well blanched, and solid. In flavour it is not quite equal to Sandringham Dwarf, nor quite so early. For cooking it is equal, if not superior, to any I have grown.

Wright's Giant White does well here. It is especially hardy, much more so than Major Clarke's Solid Red. Tait's Snperlative is also an excellent late variety. Williams' Matchless Red is most hardy and a better keeper, but is apt to be rather hollow. Of the other varieties mentioned we have not had an inferior stock for some years. To keep up a constant supply I consider it good policy to grow several varieties, and fully intend to add more of the American next season. I hope I have done justice, and only justice, to White Plume. Your correspondent, "A Thinker," may safely excuse himself of any stubbornness by giving it a trial.—LATHYRUS.

WHITE PLUME CELERY.—Finding this novelty last spring recommended as an acquisition to the kitchen garden, I procured a packet of seed. It was sown in March at the same time as that fine red kind Major Clarke's Solid Red, pricked off the end of April in the open air, and transplanted again in June to its permanent position. I had seen it recommended that planting on the level and not earthing it up would do for it; but while making trenches for our established red kind I thought it as well to make three trenches for the White Plume and earth it up the same; but I also had one row planted in well-manured ground on the level. Altogether over 300 plants of this novelty were planted, but I am sorry to say I am quite disappointed with it. It has not been, I think, one of the best of summers for the well-doing of Celery, but White Plume planted on the level ground and not earthed has been no good at all; not a plant of it will be used, but a few dozens of it from the earthed-up rows have proved useful for cooking, but for salading it is not to be compared with the red variety above named; in fact, I consider it not worth growing at all for that purpose. As to its hardness, it stood a few degrees of frost very well, but last week's winter weather, with 13° or 14° of frost, appears to have spoilt it, for all exposed leaves look putrid. The leaves of the red Celery look very little the worse for the frost. Major Clarke's Solid Red, if true, is an excellent kind. I usually plant about two thousand of it, and find it keeps well till March and April. When well bleached its crispness and flavour are all that can be desired.—A. HARDING.

STRAY NOTES.

As the year 1885 closes we are looking forward with pleasure to the new year's address, and now is a fitting opportunity to acknowledge what a great amount of pleasure, instruction, and gratification our *Journal* has afforded me, and how eagerly its contents are read. Certainly the *Journal* has progressed and kept pace with the times, and this is saying much in these days of enterprise. While we still keep the old standard writers the new and younger ones are not wanting in spirit, as their contributions show. To my mind the *Journal* is a storehouse of information useful for all. Let me specially commend to my younger brethren the several articles that have appeared on their behalf.

Turning to our garden products, it is remarkable what an increase has taken place in the consumption and culture of the Tomato. The varieties are much too numerous, or at least so-called varieties, and I would advise growers when they get a good suitable variety to select their own seed. The Vine has come in for a good share of attention, and quite a revolution has taken place here, more especially in the late varieties. The troughs and bottles are going to do away with very early forcing, and rightly, too, when good late Grapes can be put on the table up to the end of April or the beginning of May, Grapes that the Black Hamburgh cannot equal for flavour. I shall never forget the Grapes at Longleat which I had the pleasure of seeing in November. The Muscats were of course the sight, because without disparaging the good quality of the Alicante, Lady Downe's, and Mrs. Pince, they were not so fine in comparison. All the more honour to Mr. Pratt for keeping the Muscats to the front

I now also thank Mr. Taylor for his very hearty welcome and for his useful hints.

The allotment question has found a place in the Journal, and I have pleasure in stating that in this village we have some two dozen allotments, which give useful employment to a number of intelligent labourers; but I have had several reliable statements made to me that there is very little profit attending it, if labour and everything is to be paid. Large allotments would be an evil, not only to the man but also to the employer.—STEPHEN CASTLE.

FERNS—THEIR HISTORY AND HABITATS.

[A Paper read before the Paxton Society by Mr. J. G. Newsham of Sheffield.]

(Continued from page 565.)

To give you a descriptive account of our British Ferns I should occupy a large space, and perhaps prove rather tedious. I have classified them into groups according to their strata. Each separate British species has its own birthplace, or supposed birthplace, and almost any of the authors on Ferns will give the place, date, name of the discoverer, and in fact the whole pedigree of the plant. I am not aware that any attempt has been hitherto made to arrange them into stratagorical groups—if I may be allowed to coin a word. In the first place it will be evident that the main features governing the localities which Ferns inhabit are moisture, shade, protection from cutting winds, and, generally speaking, drainage. There are exceptions to this rule, but the number of Ferns which can bear exposure, and of those which inhabit our bogs and marshy swamps, are so few that the exceptions in this case will prove the rule. The Ferns who dwell in high places and revel in the free mountain air, although apparently exposed, receive more protection from cutting winds than a casual observer would suppose. The deep fissures and crevices of rocks afford them a far greater amount of protection than they appear to possess. Moisture, too, is even highly essential to the well-being of these mountaineers. Amateurs and professionals, too, in many instances omit to observe that this is so, and consequently lose many plants of this class by the dryness of the atmosphere which surrounds them under cultivation. The heavy dews and passing clouds at high elevations are continually feeding such plants with an abundance of moisture.

However, I am perfectly justified in asserting that the real home of our Ferns—speaking generally—is in localities abounding in moisture, places hidden from the scorching rays of the sun—the shaded mountain slope, the banks of the rushing stream, the quiet glen, the deep ravine, the tree-protected rocks, the hollowed caves by the sea, where the action of the waters have for centuries gone formed suitable homes for the growth of many of our maritime plants, and to these localities we must ever look for the most successful results in the gathering of Ferns.

One accustomed to observe such habitats, and who has studiously observed the relations which exist between localities and varieties, would tell you that the strata all have their special productions. I know that the question has been raised by pteridologists as to whether the strata possess any virtue in producing or fostering the various species, and I do not for one moment wonder at this, because we invariably find Ferns which are said to be indigenous to one locality growing upon rocks or in localities of quite a different nature. For example, the Hart's Tongue (*Scolopendrium vulgare*), the Brake Fern (*Pteris aquilina*), *Lastrea dilatata*, commonly known as the Male Fern, and a few others which I could name appear to have no specific home. The *Scolopendrium vulgare* is considered by some authors to be strictly a calcareous plant, but how often is it found upon sandstone, ironstone, and other formations? The same remarkable feature exists with reference to the common Polypody (*Polypodium vulgare*). This in my estimation may be accounted for in various ways, more especially from the fact that the ripened spores have been wafted by winds or carried by streams, and have found lodging upon substances which have contributed to their propagation and development in the shape of rich soil favourably located. Spores when once ripened may be propagated in entirely different soils to that in which it originated, but the ultimate results fall far short in foreign substances. My opinion is that the natural home of a Fern is that in which it loves to sport. I have found *Scolopendrium vulgare* growing upon a slate formation, but upon examination of the locality for miles, in which I found it growing, no other traces of that Fern could be found. Consequently I considered it in that case to be an alien, and I have in many instances noticed similar illustrations of our most conspicuous truants.

I give it upon my own authority, based upon my own con-

victions, that a Fern in its native element must be one that is watered with that peculiar water which issues from the strata which originated its production.

The most prolific habitats, referring to the strata, are limestone and red sandstone. Slate formation stands inevitably low in production, although in suitable soil, we find many varieties growing in a healthy condition. Of the forty-eight British Ferns, we have twenty-one rock Ferns, twenty-one which inhabit rich soils, and six marsh Ferns. Out of the twenty-one who are indigenous to decayed vegetable matter I make a sub-division, and select thirteen of that number which are watered by the various strata. Thus we possess eight species only which are entirely at home in rich decayed leaf mould or loam. Of the twenty rock Ferns we have nine limestone, nine sandstone, and three slate. Of the thirteen which are to some extent dependant upon the strata, we have five on the lime and eight upon the sandstone formation. This in the total shows—Limestone, fourteen; sandstone, seventeen; slate, three; and marsh Ferns six; rich decayed vegetable matter, eight. Total, forty-eight.

CULTURE OF FERNS.

The popularity which Ferns command is attributable to their adaptability for almost all positions and situations. The treatment required by them is simple, and is within the power of all. They may be termed good-natured plants—plants designed to bear a large amount of neglect and cruel treatment before they actually succumb. Hence it is that we find them almost everywhere; in the windows of our cottages, upon waste patches of ground, upon stony and ill-fed rockwork, looking miserably poor, and to a practised eye positively famishing, or grown in cases and under bell shades, or in various other ways, affording small pleasure to the owner, even if a few delicate yet green fronds remain to indicate the beauty which they once possessed. Often have I looked upon such plants with sorrow and regret. It must be that the owners of such plants are not ignorant of their simplest requirements, but positively careless and indifferent. Then, again, we often find Ferns growing under quite different circumstances, having all the care and attention which such persons can bestow, perfectly clean and tastefully arranged, yet in poor health, and in this weakly condition they exist for long periods, affording but little satisfaction. We require to have a love for the plants we grow, and unless this can be done it would be well to abandon the attempt. Let me ask all who may have a desire to follow the cultivation of Ferns to remember that old proverb, or maxim “Whatever thine hand findeth to do, do it with thy might.”

We see many methods adopted, some in baskets suspended in windows, others in old walls, others on rockwork in the open air, or in greenhouses, vineries, or ferneries specially constructed, boxes on window sills, while by far the greater majority of amateur growers prefer the bell shade or Wardian case. Taking all these methods into account, they may be classified as Ferns protected and unprotected. I will endeavour to deal with both, and so far as my own experience bids me, render such assistance as I am able. Dealing first with Ferns unprotected—that is, grown in the open air, it will be quite obvious that in removing Ferns from their natural home, and bringing them under the hand of a cultivator, many dangers will be encountered which may be surmounted. Two of the main features to be observed for an outdoor fernery are position and formation. That Ferns love shade is an acknowledged fact. They will, it is true, for a time exist under exposure, yet under such circumstances they are dwarfed, and never even give a glimpse of their bright and beautiful nature, being devoid of all interest, robbed of their charms, and the grower cheated of his expected pleasure. Let the fernery most certainly have the best protection from the scorching rays of the sun, and from cutting or drying winds. Both are equally destructive to root and branch alike, drying up the former and robbing the latter of its natural gracefulness and colour. By a due observance of the main or essential habits of the Ferns you wish to grow, failure may be easily prevented.

(To be continued.)

CANKER IN FRUIT TREES.

THE discussion on the above subject must be interesting to all growers of fruit, especially those who earn their living by so doing, and any discoveries of the cause of this mysterious disease are most welcome, especially if they afford a prospect of cure. The directions sometimes given for curing the disease, like those given for planting fruit trees, although, no doubt, applicable on a small scale, must often cause a smile on the face of those who grow for market, as following them would simply mean ruin.

I have some young Pear trees which developed canker after a severe winter made fresh growth after a hot summer (the cankered part being

cut off), and again cankered after the next winter. I have also some young Apple trees which were healthy until the hot summer of 1884, after which they were badly cankered, and more so after this late hot summer. The first is quite a different-looking disease to the last, and appears to be caused by rupture of the sap vessels by frost. The last sort of canker I attribute to the drought sending the roots down deep after moisture into an unfavourable subsoil, and the disease eats right into the wood. Our top soil is a rich fertile loam interspersed with *débris* of the limestone called Kentish rag. The subsoil is red and clayey, likewise full of stones, and the natural drainage is good. The subsoil I believe contains a good deal of iron, which I regard as a cause of canker, and which opinion is corroborated by the interesting information given by "Thinker" on page 536. This subsoil is called locally "red-pin." Since reading in the Journal the observation of the late "Single-handed," that the acids always present in humus act as solvents on the mineral plant-food present, and when they reach the iron, which binds some subsoils into pans, it is dissolved, and the pan put an end to," the manures which I have applied have been principally those which furnish humus, and which always attract and hold water best of all soil ingredients, and would therefore tend to keep the roots from going into the subsoil after water. It is a fact that the red soil in the neighbourhood is deficient in humus, and fruit trees growing in it are more subject to canker, while the opposite is the case with the more loamy soil. Varieties which flourish in the latter, even if full of springs, are killed with canker in the former even where there is good natural drainage. The deduction is that much iron in the soil causes canker, and that a plentiful application of the humus will cause the iron to dissolve and get washed deep down from the roots, but I have not had sufficient time to prove it on my own ground.

I remember Mr. Bunyard telling me that a gentleman cured canker by a plentiful application of wood ashes round the roots. I have often wondered what was the reason of it. First, if it was due to the large quantity of potash they contain, and either it or phosphorus or other mineral supplying the tree with some element needed to sustain a healthy growth; humus or decayed vegetation would also mean plenty of potash and similar minerals, only unburnt. Second, if it was due to the action of these minerals in dissolving iron in the soil; or, third, if it simply caused the production of surface roots in the good soil, but this would not bring the lower roots up. Perhaps Mr. Bunyard can give us some further information as to whether the tree or trees were dug up and replanted, &c.—WALTER KRUSE, *Maidstone*.

MR. HIAM has done well to draw special attention to this subject, which, in spite of our professed improvements in fruit culture, still appears to be rather on the increase than otherwise. He may have somewhat overshot the mark in ascribing this malady solely to insect agency; notwithstanding, it is highly probable that a very large per-centage of the cases classed as canker have originated from and increased by insect ravages only. In support of this belief I knew of one special and striking instance where an old, long-neglected, and much-cankered orchard of Apple trees was completely restored to health by thorough periodical dressings over stems and branches, and where the roots received no attention beyond a light annual surface-dressing with well-decomposed manure. I should say, however, that the soil, if not the situation, was considered favourable to their growth, and so rapid was their improvement that in a few years afterwards scarcely a trace of the disease could be discovered. It may be said, indeed it is stated in your last week's impression (page 529) that such cases "are not canker, as the term is generally understood." Such may possibly be so, but to discriminate between them and say which is real canker engendered by internal ailment, and which is produced by external agency, be it animal, atmospheric, or other cause, is indeed difficult to decide. There cannot be a doubt, however, but that in some unsuitable situations and soils canker is exceedingly prevalent, and the difficulty, in some instances the impossibility, effecting a cure, or of even checking its increase, seems to point conclusively to other than insect agency as the cause of the evil.

That some few kinds of soil seem to exert a prejudicial effect on fruit trees by inducing canker and disease some time after they have been planted therein cannot be disputed, but it is not improbable that this evil is often more due to unsuitability of position rather than to any hurtful chemical constituents of the soil. By this I mean that if planted in the same kind of soil, but in a drier, warmer, and more elevated position, the trees would in all probability grow less luxuriantly and continue altogether free from the disease.

* It is this over-luxuriant growth, enforced by too damp positions and by too stimulating treatment, as well as by the frequent mutilation, sometimes mis-called pruning, that we have most to fear. This strong growth is for a time very promising, and will perhaps continue to be so as long as favourable springs and, what is still more important, suitable autumns for thoroughly ripening it continue, but the first unfavourable autumn, succeeded by a severe winter or spring, will produce such evil results as will quickly and permanently develop into canker in almost every branch, except perhaps on a few trees possessing hardier constitutions. How plainly does the instance mentioned by Mr. Warner (at page 540) of one variety of Apple being free from canker while another, although growing on the same stem, is diseased, point to this conclusion.

Could we but impart the constitutions of Cox's Orange Pippin and Wellington to Ribston and Golden Pippin, or that of Beurré de Capiaumont and Dunmore Pears to Glou Morceau and Easter Beurré, we should have but little to complain of in respect to canker, even in this unsuitable and changeable climate. Some few kinds of soil may, without the presence

of any other predisposing cause, possibly produce canker, but they are, I think, few indeed. That soil highly impregnated with iron may and sometimes does have an injurious effect on Apple trees in some positions is also possible, an instance of which I believe I once saw; but when these trees were removed to a higher position a short distance away, where the soil was equally impregnated with iron, and where they quickly outgrew the disease and afterwards continued free from it, I was compelled to change my belief. In respect to the canker or gumming peculiar to many kinds of stone fruits referred to by "An Old Gardener" (page 529), whatever may be the precise physiological disarrangement in the tree which engenders it seems likely to be veiled in mystery, but there can be no doubt whatever that unsuitability of climate is the main predisposing cause. When this can be remedied and other details of cultivation are reasonably and judiciously carried out, canker or gumming almost wholly disappears, thus showing most plainly that unsuitable climate, and not soil nor insects, is the worst factor in producing canker.—T. CHALLIS.

COVERING SEAKALE CROWNS.

IN the "Work for the Week," page 525, it is recommended that the soil from between lines of Seakale be put upon Seakale crowns to leach them. I have found that where soil is used alone, and is at all adhesive, it cripples and sometimes breaks the Kale in its struggle to get through the soil. To avoid this we mix coal ashes, old leaf-soil, and sometimes seasand with the soil. Either of these materials will do to lighten the soil, but having leaf soil and seasand at hand, we find useful for working into the soil for future vegetable crops.

A few words as to our practice may not be out of place at this season, as where this vegetable is appreciated most gardeners are now busy taking up the old crowns for forcing. In taking up the plants many of the large roots will be broken off, and others that are not necessary are broken as the work of lifting proceeds; these are all saved, and covered either with sand or soil until a wet or unsuitable day for outdoor work comes; they are then taken to house and made into cuttings about 4 inches in length, the top being cut quite flat, and bottom slanting for the purpose of knowing the top from bottom, as we find that when cuttings are planted the wrong end up the crown starts from the bottom, consequently is some time reaching the surface of the soil, and is very weak. After the cuttings are made they are again covered with soil or sand to keep them fresh until a suitable piece of ground is made ready in early spring by deep trenching, and at the same time working in well-decayed manure, seaweed, and sand. A line is then put down in centre of double line; we make holes with dibber on both sides of the line at 6 inches from it, and alternate. These double lines are 3½ feet apart, thus giving us ample room to mix the material above described with the stiff soil to put on the crowns, which are covered 1 foot deep. In this way we get very fine heads, many 1 lb. weight, from spring cuttings, and of good quality. Our early supply is taken up in the usual way, and either forced on slight hotbeds of leaves, or in boxes or pots under stages of any heated house, but our best quality Kale is got by covering where it grew.—W. O., *Fota Island, Cork*.

NOTES ON CHRYSANTHEMUMS.

AMONG gardeners no other flower, not even excepting the Rose, can lay claim to such popularity as the Chrysanthemum, and every season adds hundreds to the lists of growers. The Chrysanthemum season serves to bridge over some of the months which at one time were usually the dulllest in the year.

The season of 1885 cannot by any means be said to have been highly favourable to the production of high-class hlooms in great abundance, and never before probably were there so many disappointments. The excessive heat of the summer, coupled perhaps with a scarcity of water, left its mark on great numbers of plants, and then to make matters worse we in the south experienced severe frosts before the greater portion of the plants were housed. This appeared to have been most injurious to the very forward and latest buds. The effect of first the hot weather and then the early frosts was less apparent, I might say was unobservable, in the classes for cut hlooms, but the specimen-trained plants, as far as my experience goes, told a very different tale, many being shown that were very poor indeed. Only a few being grown, the exhibitors had no choice in the matter; but plants to provide cut hlooms being more numerous much less difficulty was experienced in selecting the required numbers. The frost, however, quite spoilt the chances of several intending exhibitors, some of whom I hope to see well to the front next season. A friend in the extreme north of England informs me that their plants were uninjured by frosts, but we dwellers in the "sunny south" would be surprised to hear that the bulk of his Chrysanthemums were not yet at their best, and as this was about December 10th this grower should put in appearance at the January Show of the National Chrysanthemum Society. Chrysanthemum shows do not appear to be at all numerous in the northern counties, but there is, I should imagine, no reason why there should not be many of them, only they must be held in December instead of November.

There were naturally plenty of disappointed exhibitors in this district, but as a rule I heard but little grumbling at the awards of the judges. The greatest bother was about synonyms being included where distinct varieties are stipulated for, while doubt existed in some quarters as to the sections to which some varieties rightly belonged. I was somewhat surprised to find that Mr. Hohhs, one of the best known Bristol amateur exhibitors, should have felt justified in including Empress of India and Mrs. Cunningham in a stand of twenty-four distinct large-flowered varie-

ties; but those who are acquainted with the veteran grower will agree with me that nothing unfair was contemplated. Mr. Hobbs evidently considers them distinct, and he acted accordingly. At Taunton, where I had the assistance of Mr. Lock in judging the numerous well-filled classes for cut blooms, we were "taken to task" by an experienced exhibitor for not disqualifying a stand in which a Japanese Anemone was included with the ordinary Japanese sorts. In another class, that for reflexed varieties, *Triomphe du Nord* and, I think, *Salteri* were included, and these again we did not disqualify any more than we did the stands of Anemone-flowered that included Japanese Anemones. No; I hold that unless the rules expressly forbid the inclusion of Japanese sorts in certain classes, the judges are not justified in disqualifying where they are so included. If hybrids are admitted in one class, why not in another? and, unless forbidden, Japanese Anemones have as much right to be shown with the ordinary Japanese sorts as they have with the old Anemone-flowered. Whether this will meet with the approval of such experts as Mr. Molyneux, Mr. Orchard, and others remains to be seen; but I may add that Mr. Lock has had advice (not from a lawyer though), and we are supported in our decision. Let me impress on the framers of schedules to be very careful in the wording of certain rules, and this will prevent much future dissension. The definition in every case should be clear, especially as regards the admittance or non-admittance of Japanese hybrids in Japanese and other classes, as well as hybrid Pompons in the classes nominally for pompons. Supposing the National Society will issue a fresh catalogue. Why not take their arrangement of sections as a guide? further adding that the synonyms bracketed must be abided by; then if copies of this official catalogue are placed in the hands of the judges no mistakes need be made in the matter. This may not be so imperative in the districts where the Chrysanthemum is so well known, but the case is very different when we leave these centres, and what we have to consider are those parts where societies are newly formed.

It is somewhat surprising how few novelties there are in the incurved section, those few that are added to the list being principally sports. The most noteworthy exception is *Jeanne d'Arc*, and this grand sort soon attained to the front rank. I found the crown buds of this variety were too early, and several fine blooms were of no service whatever. Much patience has to be exercised in dressing the blooms owing to the petals being thin in substance and very numerous. *Bendigo* or *Mabel Ward* was disappointing at first, but the crown buds may have been injured. Latterly we have cut lovely blooms resulting from terminals, and the same remark applies to *Jardin des Plantes*, crown buds in this case being followed by large blooms with split centres. *Lord Wolsley* still proves a trustworthy sport, and is quite distinct from its parent *Prince Alfred*. *Queen of England* was shown grandly at Bath, and if Messrs. Carter's bronze sport from it is fixed and possesses the good qualities of its parent it will prove a grand acquisition. *Golden Queen of England* gave us some immense blooms, but they would not incurve properly, and I believe many have experienced the same difficulty with it. The best bloom I have yet seen of it was shown at Yeovil by the Messrs. Drover. *Lord Alcester* is deservedly most popular, but this and *Golden Empress of India* proved very "tricky" this season, many of the largest blooms developing several centres, "all the dressing in the world" failing to whip them into shape. I thought we had overfed them, but when I saw others in the same predicament, and when Mr. Molyneux rather doubted if I had hit upon the right solution of the difficulty, a fresh cause had to be found. Was it the hot weather? was it the frosts? or what was the cause, eh, Mr. Molyneux? I had hoped to have included quite a new sort in what few stands of incurved I exhibited, but the frost upset my calculations. This was none other than an incurved sport from Mrs. Forsyth, and which I have dubbed "*John Bradner*," this noted Bristol grower having discovered and fixed this sport, but why he has not pushed it I cannot explain. It exactly resembles Mrs. Forsyth in its growth, the colour of the flower being also the same, but the somewhat imperfect blooms that I had incurved beautifully, and I still hope to see Mr. Bradner derive some benefit from its introduction.

Japanese sorts, beautiful as the majority undoubtedly are, are really becoming too plentiful, the lists of novelties being quite bewildering. Luckily, our "headquarters men," notably Mr. L. Castle, are well able to discover and point out which are the best, and this serves to guide many of us in our selections. At one time I purchased certificated varieties and others with glowing descriptions. These included *Salteri*, M. *Henri Jacotot*, *Roseum superbum*, M. *Boyer*, *Comet*, *Gloria Solis*, and M. *Moussillac*, but none of these proved of any service for exhibition purposes, being either too early or too small, while many of the sorts I passed over in favour of those just mentioned have been popular with exhibitors, and this, to say the least, was rather aggravating. Of the sorts flowered with us for the first time this season I give the preference to *Val d'Andorre*, *Madame de Sevin*, *Duchess of Albany* (Jackson's), M. *Ardene*, and *Belle Paule*. The latter I grew on the recommendation of Mr. Mease, who had already given it a trial, and on the whole I consider the most distinct and most beautiful novelty of recent introduction. It was somewhat late, crown buds only being expanded in time for exhibition, but blooms resulting from terminal buds were the most attractive.

Cullingfordi I have not yet grown, but from what I have seen of it should say that it is a valuable and most beautiful addition to the reflexed section, where I hope it will be definitely quartered. All the Japanese Anemone-flowered are most attractive, but unless they are divided from the old Anemone-flowered varieties the latter will be at a decided disadvantage, and will soon be lost to the exhibition table. In a few instances Pompons have been very prettily shown, being bunched up with a little foliage intermingled. As a rule they present a very insignificant appear-

ance not at all pleasing to their by no means limited number of admirers. Why cannot they be shown in the same manner as single Dahlias, or at any rate in good-sized bunches, disbudding being permitted in order to have them at their best?

The mania for a collection of a large number of varieties is still rampant, and that, too, in spite of the frequent warnings against it expressed by those who well know how great a mistake this is, unless it happens that the cultivator is not ambitious to figure conspicuously at the shows. The inexperienced seem to imagine that the more sorts they can collect the better chance they have of winning the prizes, whereas quite the contrary holds good. Those who read the various reports of shows will observe that much the same varieties are to be found in the prize-winning stands throughout, and it is these that should be preferred, growing as many plants of each as circumstances will permit. The advantages attending this practice will be obvious enough when show time arrives, as the grower will then have plenty to select from, whereas when only one or two plants are grown the blooms on these may be too early or too late, or from various causes may not be up to exhibition form.—W. IGGULDEN.

JUDGING FRUITS.

THE discussion on judging which is being carried on in these columns will lead to some definite result, I have no doubt, or a great deal of time and thought will have been wasted. I wish to offer my quota on the subject, especially in support of what I advanced in your issues of September 10th and 17th. I also have to notice the slight criticism to which it has been subjected, partly complimentary and partly adverse, but so little of it as to suggest the notion that after all things are not so bad as to require any change in the system of judging, or any necessity to formulate a fixed scale of values for the various exhibits in mixed collections. Positively there are some who write on this who are fussy individuals, always dissatisfied with things as they are, or they may be disappointed exhibitors endeavouring to cover defeat by the advance of a few imaginary irregularities, yet many of your able correspondents have engaged the subject. If we allow a fair proportion of them to be earnest writers, anxious to have anomalies put right, how many might they represent anxious and desirous of seeing correct rules laid down, and antiquated notions put aside, but who have no desire to ventilate their ideas publicly. That there are many ways of procedure in awarding prizes no one will deny, and some of them are very strange. No further back than September last, at one of the most prominent shows in Scotland, the plan pursued throughout the collections of fruit, as explained to me by one of the judges in that department, was this—In the first-prize collection of eight varieties three points were given to a dish of *Madresfield Court* Grapes, supposed to be the best of its kind ever shown. The same number to each of two dishes of Peaches, the same to a dish of Nectarines, a like number to a dish of fair Green Gage Plums, two to a dish of Black Hamburg Grapes, two to a dish of Apricots, the remaining dish, Figs, going for nothing. Those who followed this three-point rule are the most experienced judges, and probably the best horticulturists in North Britain. No doubt they would be able to give a satisfactory explanation of the plan they adopted, although it is difficult to perceive how. I fail to see how this mode could be satisfactorily performed, unless the whole opposing dishes were the same varieties, then every collection would share alike. In this case all the varieties in the three-prize collections were different, except two or three.

I would now refer to the few remarks of "A Thinker" on the system proposed on page 221. He attributes mistakes in judging to various causes (page 313), all of which may have a tendency in that direction, but which are superficial and could be easily remedied. The mistakes I consider of most importance arise on the part of the exhibitor through miscalculation, and misapplication on the part of the judge. If exhibitors were fully alive to the value the varieties would receive in competition, they would know what to produce with any chance of success, then their place in the prize list would be determined by the degree of perfection to which they had been brought. Then, again, a fixed value for the different sorts should be established in order that a proper estimate of worth might be applied in accordance with the respective merits of each, thus making judging more uniform and simplifying the adjudicators' labours.

I will now refer to the objection taken to the system mentioned above as being too elaborate and taking up too much time. The time wasted would be less than your correspondent seems to imagine, as it would be necessary to apply it only in close competition. And this is where the disputes come in, and where men are mystified and led to exclaim, "Well, I don't see how this or that has been preferred." Here the cards referred to would come in with full details to unravel the mystery. No necessity for publication. Moreover, the judges ought not to object to the results of their labours being exposed, but rather favour the opportunity afforded to show the faith that is in them, and nullify the criticism to which they are often subjected, as on the occasion of a great show held a few years ago north of the Tweed, where the critics were dissatisfied with the awards in the big collection of Grapes, supposing that the judges had been deceived with the large bunches in the grey of the morning, but that if judging had been an hour later the decision would have been different. I must still adhere to the declaration of the non-payment of judges until it becomes a profession; then I would say the better pay the better service we might expect, as the selection is generally made from the ranks of head gardeners, whose pay is never withheld when absent from home duty. The labour of the servant ought to be

and is considered by the employer as part of a contribution towards the promotion of high-class horticulture.

I am glad to be supported by "W. A." in an endeavour to supplant all rough-and-ready rule-of-thumb methods of judging in an enlightened and more consistent style to which all horticulturists could subscribe. Your correspondent disagrees with me only in the value of the mark, and the manner in which the figures are finally arranged. Simply changing the terms would meet his view in the one case. As to the other, the rule which guides the advance of our arithmetical notations in fractions, however convenient, must not interfere with any arrangement in fixing an estimate of value between sorts or varieties. I grant the system proposed may not be complete, but any modification of it that would admit of more points being allowed, and correct values given in collections, would meet the difficulty, unless they were to be judged according to evenness over the whole, which should not be, but let every variety stand or fall by its own merit.—W. WILLIAMSON.

In reading the "Committee side" remarks of Mr. T. Challis on this subject at page 565, I confess to being astounded at his teaching regarding the relative positions of "Judges and Committees of Shows," inasmuch as he gives to the latter a power which it is neither entitled to by law nor qualification—namely, that of altering the awards of the Judges. The latter, Mr. Challis says, are, like other men, fallible; but does he mean to say that the gentlemen forming the Committees of Shows, who are not always experts, are less fallible than the experts selected by them on account of their position and known ability to perform the duties of adjudicators? He says the Judges are the servants of the Committee. Nothing of the kind. They only accept an engagement to make the awards at the Show, and they do so to the best of their ability. Neither the Committee nor its officials have any voice whatever in determining the awards, and these awards, it is stated in the schedules of Shows, "shall be final." Therefore the Committee, by its own printed rule, has no power whatever to disturb the awards of its Judges, nor to indicate to them the manner in which they should make the said awards. Yet, in the face of this fact, Mr. Challis tells the readers of the *Journal of Horticulture* that the Committee is "morally and legally" justified in correcting (?) any mistakes which in its opinion have been made by the Judges. Morally and legally the Committee has no right, even if it had the capacity, to interfere with decisions of the Judges. Were it otherwise, engaging and paying Judges to make awards at Shows would be a mere farce! However, it is very rare that a case of this sort happens, but when there is one, and a gardener of Mr. Challis's position endeavours to justify the action of the Committee, it is therefore necessary to show that Committees, in point of fact, do not possess the power if they have the competency (?) to deal with such matters. However, the Committee of a Show would be acting within its right to draw the attention of the Judges there and then to any awards respecting which protests had reached it. Then the Show Committee would hear what the Judges had to say, and should act accordingly. But, on the other hand, it should take no notice whatever of the opinions gratuitously given by "irresponsible" individuals on such occasions.—W. S.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 6.

WALKING along modern Westminster, a place, we might say, unsurpassed by any other in the British islands for historic interest, not even by London City, we can hardly fancy to ourselves it was ever an island. Yet such was the fact, and on examination we can manage to trace out its shape, for there was a stream, extant not many centuries ago, called "Long Ditch," which ran out of the Thames near the Abbey, and ended about Tothill Street, but which once, doubtless, by a curve joined the ponds of St. James's Park. That park gives us now water extending almost to Buckingham Gate, and we have only to suppose in the olden time that in the space between the park and the basin of the Grosvenor Canal (now Victoria Station) was intersected by a small, or perhaps a large, stream, and there we have the outline of the primitive Isle of Thorney, a spot much overgrown with Briars and Thorns. These were probably Brambles for the most part, some Blackthorns amongst them, it may be, and we shall have difficulty in finding representatives of these in Westminster now. It is seldom one sees the Blackthorn or Sloe in a London garden, yet I think this is a species that would grow fairly well, and if not within a very smoky district put forth its flowers which herald spring by their early display upon the nearly leafless branches. The Spindle Tree (*Euonymus europæus*), another May-flowering shrub, is also a species that should be grown about the metropolis; one of its recommendations, so far as appearance goes, is the beautiful tints it exhibits ere the fall of the leaf. The fruit, however, though ornamental, must be avoided, being somewhat poisonous.

I question whether the Hawthorn was one of the plants that formerly flourished in the Isle of Thorney, though Westminster can show us a few of rather sickly growth. This shrub, or tree, in London districts seldom attains to any size, and we do not see those fine specimens of gnarled and twisted Hawthorns that are noticeable in many parks and woods. It was for some time doubtful to me why the Hawthorn planted about London, after growing several years, gradually falls off and either dies or becomes stunted; at least, this frequently happens. At first I thought the atmosphere of the town was unfavourable, hurrying it perhaps too early into leaf, but I conclude now that it is generally the injurious result of prolific caterpillar foes. This and other shrubs often get little atten-

tion from the gardener, who is busy about his flower beds, and so the Hawthorn is infested with swarms of caterpillars, as, for instance, with those of the winter moth, the small ermine, and the vapourer, which exhaust its strength during the summer. Close to the Westminster Guildhall and opposite New Palace Yard there is a piece of enclosed ground, graced with a statue of Canning, and which contains some good-sized Sycamores and Elms along its edges, but the centre is filled up with a straggling company of badly shaped Hawthorns, Lilacs, and Limes, that must have been planted some years ago, and since, apparently, left to struggle for life as best they might. The Metropolitan Bonlevard and Public Gardens Association are endeavouring to get this space made free to the public, and, this done, I should advise the removal of most of the shrubs and half-grown trees now there and the planting of a few more suitable, while one side flanked by a wall could have creepers or a rockery to form a background.

Under the shadow of the venerable Abbey and nearer the river is the churchyard of St. Margaret's, not so many years ago a moist, melancholy, unwholesome spot, shunned by the pedestrian. It has been improved of late, some Sycamores planted along its sides, and the area, after levelling, has been laid down with grass—a better plan certainly, considering its position and dimensions, than attempting flower beds. Scattered round this churchyard, or occupying some of the angles of the Abbey, are some larger Sycamores. These, however, would not be older, I judge, than about fifty years. It was curious to see, nestling in the sheltered nooks under the Abbey walls, patches of the familiar Chickweed of fields and lanes, supplying to the town sparrows green food when they can obtain but few seeds or insects.

Dean's Yard, to which access is obtained under an archway from Broad Sanctuary, is an open space which is likely to be missed by anyone who is a stranger to the locality; yet it is of larger extent than the name might suggest, and the railed ground in its centre has long been used by the Westminster scholars for football and other sports. This is not particularly beneficial to the grass, nor to the Limes and Sycamores planted round the sides of the square in an irregular fashion; these also suffer maltreatment from the juveniles who congregate outside at times. In a corner of Dean's Yard, amongst the houses, a very large Sycamore stands alone, which has doubtless a history worth telling could one unravel it. An attempt has been made to form a bank of plants behind its venerable trunk, but the position is against their growth, though window-gardening is carried on successfully at several of the houses in the Yard. Curiosity or a kindly interest brings some persons to Dean's Yard from a distance to see the annual exhibition of plants cultivated by the poorer class chiefly in the Westminster district. These are somewhat assisted by the distribution of roots or cuttings which is made in the autumn, when the flower beds are cleared in the parks and some public gardens, but occasionally I have noticed this is deferred too long, and then the plants given away are partially spoilt, because they are touched by early frosts.

On the bank of the Thames, offering an agreeable prospect, and a blow off the water to invigorate the lungs, is an open space called Victoria Tower Gardens, not very extensive, yet one might have supposed it would have had its visitors at all hours of the day, drawn from the thickly populated streets of Westminster. True, the grass plats in the centre are forbidden to the public, but there are broad paths and seats beside them free to everybody, yet when I entered not a soul was there, nor did man, woman, or child afterwards appear. At the gate there is a box for the caretaker, and he sat therein sleeping "the sleep of the just," perhaps from too heavy a dinner, or wearied with the dullness of his duties. One of these is to prohibit "shouting," as appears by the table of regulations—not a frequent offence, seemingly. Nothing has been planted to intercept the river view, but on the east side of the gardens is a belt of shrubs separating this space from a less enclosure belonging to the Houses of Parliament. Some are evergreens, some deciduous shrubs, and being sheltered from the colder winds they are in a good condition, though set in that promiscuous style frequently observable in public gardens. As no access is permitted to the grass plats, a few shrubs that would look cheerful at all seasons might be placed here and there; but I am a hearty advocate of allowing the youngsters the pleasures of the turf, under supervision, where it can be managed, or at least a part of the space under grass might be free to all, while the growth was protected from the tread in other portions. It should be added that Vincent Square, Westminster, is another and larger open space, also a playground of the Westminster boys, and with an area of grass that might be turned to much better account than its present limited usage.

A district called South Belgravia, where early in the present century there were reedy fields and gardens devoted to the culture of succulent vegetables, amongst streets of uninviting aspect, has a few squares, which may be dismissed briefly, as they are not as yet open spaces benefiting others than the immediate residents, except in so far as they tend to purify the atmosphere by their trees and plants. Eccleston Square is about four acres, Warwick Square three acres, the oblong St. George's is a little larger than these. I think they have some well-grown Limes and Sycamores, but not of any size, the time since planting does not allow of that. Willows and Poplars, which would thrive here, are unfrequent, and their shrubs are of the usual London type, the Privet and Lilac being much favoured.—J. R. S. C.

NARCISSUS BULBOCODIUM VAR. MONOPHYLLUS.

THIS beautiful little Hoop Petticoat Narciss is one of the earliest flowering forms in cultivation, and worthy the attention of all who

admire this interesting race of plants. It is white counterpart of the well-known yellow type, but has very slender leaves like *N. tenuifolius*, though not so long, and usually only one is produced by each bulb. It was introduced from Algiers to Kew by Col. Playfair, and flowers were produced in January, 1870. It is, however, considered by some writers to be identical with one of the four varieties known to Parkinson, one of which is described as "The White Bastard Rush Daffodil or Jonquilla." It has also been named *Corbularia cantabrica*, which Mr. Burbidge says "Originated from its having been grown about 1588 by a 'Master Nicola Benson, sometime of King's College in Cambridge,' as noted by Gerard."



Fig. 87.—*Narcissus Bulbocodium* var. *monophyllus*.

It is a charming plant, its flowers possessing a delicate and most agreeable fragrance.

REVIEW OF BOOK.

Fruits and Fruit Trees, Home and Foreign. By LEO H. GRINDON. Manchester: Palmer & Howe, Princess Street; and London: Simpkin Marshall & Co.

THIS work, as the author states in the preface, "claims to be no more than an amateur's contribution to the literature of the very large and varied subject," and as such it will be welcome to many who are already familiar with Mr. Grindon's free and agreeable style of writing. The book deals chiefly with the history and origin of the principal cultivated fruits, and in this respect it might be compared to a popular rendering of M. Alphonse Decandolle's admirable work on "The Origin of Cultivated Plants." Much statistical matter is added respecting the importation of foreign fruits, and of English fruits, are given short lists of varieties generally useful for cultivation. Perhaps this may be regarded as the least satisfactory portion of the work, for, though the author acknowledges the assistance of some noted fruit-growers in preparing it, yet there are some varieties named that are not worthy of a place in small collections. For instance, under the list of Vines, at page 118, Ferdinand de Lesseps is

named as one of six white varieties, while the useful Foster's Seedling is omitted. Again, in the list of Pine Apples, page 242, Smooth Cayenne is omitted, though only four are named.

The nomenclature is generally accurate, and very few errors are observable. We notice, however, that under "Javias," which the author adopts in preference to the better-known "Brazil Nuts," the generic name is given as "Bertbolettia," instead of "Bertholletia." We commend the book to the attention of the public as affording much pleasant and instructive reading, and as an example of its style we give the following extract relative to two fruits very greatly in demand at this time of year.

"Widely dispersed over the world as the Vine is in itself, there are very few localities where the preparation of raisins can be accomplished successfully. Particular kinds of soil are necessary for the Vines, and the conditions of climate where the fruit can be cured are rare and limited. For perfect results, the Grapes must be dried in the open air, in contact with a dry and heated soil, in an atmosphere void of all dampness, secure from rain and dew, and saturated, for the time being, with the hottest sunshine. These conditions are combined in certain parts of Spain; at their best, it would seem, exclusively near Malaga. Round about that celebrated city the country is very rugged. Beyond about six miles from the town, every spot where it is possible to insert a Vine is utilised. Every hill is covered, especially near the sea, and every bunch is converted into the admirable sort we import under the name of 'Muscatels.' Muscatels are often called 'Raisins of the Sun,' because originally, it would seem, after the stalks of the bunches had been partially severed, so as to interrupt the natural flow of the sap, they were left upon the tree to dry in the sunshine before gathering. In Spain, at the present day, the more usual practice is to cut the bunches when properly ripened, then to dry them in the sun upon hard earthen floors, specially prepared, and which can be covered in case of rain. Two or three other parts of the world have latterly become important as producers of Raisins similar to Muscatels. Very good ones are prepared in Fresno county, California, by cutting and laying the bunches to dry in the sun, in shallow trays, for about a fortnight. Near Huasco, in Chili, there is a little valley, where many tons of first-rate Raisins are annually prepared, the seeds so small as to be hardly noticeable. Excellent Raisins are prepared also in some parts of northern Persia and Bokhara.

"Valentia or pudding Raisins are imported, like the Muscatels, from Spain. But while the latter attain perfection only near the sea, the Valentias are raised in the interior of the country, and from an inferior description of Grape, with a thicker skin. The bunches when cut are either hung upon lines or laid out upon the ground separately, turned over once, any of the berries that have spoiled being then picked out, and in fifteen days gathered up again. A lye of wood ashes and barilla, medicated with salt and oil, is then prepared, and into this the bunches are dipped. The action of the lye causes the saccharine element of the fruit to exude in part to the surface; hence the peculiar brown and varnished appearance of the pudding Raisin, as well as the stickiness which distinguishes it from the aristocratic Muscatel. The Spaniards are well recompensed for the pains and trouble they bestow, since their fruit trade with England alone, all sorts included, is worth annually no less a sum than £1,500,000 sterling.

"The very sweet and nice little Raisins called Sultanias, light in colour, and destitute of stones or seeds, are received from Smyrna, in the vicinity of which town they appear to have been cultivated for between two and three hundred years. There is no essential difference between the Vine which yields them and many other varieties producing small and seedless Grapes. The special character of seedlessness seems to be correlative with the diminished size of the berry, and may have been originally induced by special circumstances of soil and climate, leading to partially abortive flowers. The Vines are planted in rows 6 or 7 feet apart, and at intervals of 3 or 4 feet, and so trained as to form irregularly branching little bushes, which seldom attain the height of a yard. They are grown almost exclusively upon the hippurite limestone of the neighbourhood, up to an elevation of about 400 feet above the sea. The harvest commences about the middle of July, and occupies nearly a month in the gathering. The bunches are dipped, like those of the Valentia Raisins in Spain, into a lye made of wood ashes, to which has been added a small quantity of oil. They are then dried upon the ground, a process occupying nearly a week, after which the berries are stripped or shaken from the stalks, and packed in the drums in which they arrive for the shops. The quantity brought to England is about 10,000 tons annually.

"Another variety of the Vine furnishes the inestimable fruit so familiar, in the dried state, under the name of Grocers' Currants, or, when we are speaking of their uses for cakes and puddings, simply as Currants. Little or nothing is known of its earliest history, though the plant was certainly in cultivation before the time of Queen Elizabeth, Sir Walter Raleigh being said to have had some sort of monopoly of the importation into this country. These are the genuine and original "Currants," the word being a corruption of the epithet in *uvæ Corinthiæ*, "Corinthian Grapes," by which name they were called when first brought from Greece, the native country. The geographical range of the successful culture, like that of the Muscatel Raisin, is very limited, and from similar causes. The metropolis of the district in which the plant flourishes is Patras, whence the fruit has sometimes the appellation of the Patras Currant. Of the 86,500 tons exported from Greece in the thrice-famous Currant year, 1876, when all the vegetable products of Greece were exceptionally abundant, 71,000 were the produce of the Morea, including a few grown in the neighbourhood of Missolonghi. The balance of 15,500 was despatched from the southern Ionian islands, including Zante and Cephalonia. Corinth, singular to say, produces none at all, though the Grape is successfully cultivated there for wine-making. The actual localities of the cultivation are confined to a narrow belt of country near the coast. The vineyards are mostly within 150 feet of the sea level; they rarely exceed 400 feet; the elevation is thus markedly lower than that to which ordinary Grape culture may be carried. The vineyards best cared for present a quite unusual air of neatness and finish. The Vines are planted in rows 6 feet apart. A single shoot is trained to a stake a yard in height. As soon as it is strong enough to stand alone, the stake is removed; the training of the branches is then so conducted as to give six or seven beautiful radiations of leafy shoot, which collectively produce, in due season, from fifty to ninety bunches. If an occasional prod should be

needed, owing to the weight of the fruit, this is supplied, but nothing more.

"Towards the end of July the fruit is ripe. The gathering extends over three or four weeks, the bunches upon the secondary shoots being somewhat later than those on the primaries. In six or seven days after being laid to dry, the berries begin to loosen themselves from the stalks, and in ten or twelve days all are free. Originally the bunches were laid out upon the bare ground, a piece being specially smoothened and cleaned for the purpose. Now the bunches are laid in wooden trays, 6 feet long by a yard wide, and just deep enough, say 3 inches, to hold a single layer. When the stalks have been winnowed out, the fruit is trodden into barrels ready for shipment.

"The botanical origin of this most interesting little fruit would seem to have corresponded with that of the Sultana. The diminution in the size of the berry ensued, we must suppose, upon some special local conditions, which led in the first instance to partially abortive flowers, accompanied by failure of perfect seeds. The seedless character of the great mass of the annual produce is, after all, by no means without exception. Individual berries often contain one or two seeds that will grow. In some localities there is a decided tendency to the production of perfect seeds. When, a few years ago, Currant culture was attempted at Leghorn, it failed through the plants, after three or four seasons, producing berries as well charged with seeds as the typical Grape. Similar disappointment has been experienced in Sicily and in Malta."

"The total imports of Raisins and Currants, taken together, into England, in 1880, amounted to 1,215,436 cwt., of the value of £1,801,860."

GREVILLEA ROBUSTA AND ACACIA LOPHANTHA.

THE Grevillea ranks foremost among the many useful foliage plants, being suitable alike for conservatory, table, and room decoration. Acacias are objected to as table plants on account of the leaves closing in the evening, or what is called sleeping by many people. This makes these plants most interesting to some, while to others it proves very distasteful, as in this state they present a very peculiar appearance. They are quickly affected by light, whether natural or artificial, for some observers have noticed when suddenly exposed to bright lamp or gas light, that the leaves would partially open, and then close again. Seed of both the above-named plants can be obtained of any seedsman at a very moderate cost, and is easily raised, provided a warm temperature can be given. The seed should be sown in finely sifted soil, with a good quantity of sand added, and stood in a propagating frame or under a bellglass, or failing this, some moss might be spread over the surface of the pot. Whichever plan is adopted, care must be taken that the seedlings are not left too long, or they may become drawn, this detracting from their beauty and usefulness for house decoration.

As soon as the plants are large enough they should be placed singly into small 60-sized pots, kept close for a day or two, after which they should be placed on a shelf as close to the glass as possible. When established in these they may be shifted into 5-inch pots. These will be found quite large enough for ordinary uses indoors. Plants can be grown in this size pot to from 1 foot to 3 feet in height, and this too in a very short space of time, clothed with foliage down to the soil. Neither Acacias or Grevilleas are very particular as to soil, but will grow in peat or loamy soil with a little leaf mould or decayed manure added.

In the flower garden in summer both the plants are frequently used with good effect for sub-tropical planting, and also for the more formal carpet or geometrical design. Either may be grown to sufficient size for the latter form of planting if sown in January and grown on quickly in a warm structure. When they become too tall they may be cut down to within 4 inches of the soil, and allowed to form a bush-shaped plant; these, if kept restricted as to pot room, would make serviceable plants for the conservatory. Old plants, or any assuming a sickly appearance, ought to be thrown away and replaced by younger ones; in fact, to keep up a good stock some seed should be sown every year. Acacia seed would be found to germinate more quickly if sowed for a time in warm water previous to being sown. Liquid manure and soot water are both good in promoting a healthy growth. Among artificial manures we have found fish guano most serviceable for many kinds of foliage plants.—S. B.



HARDY FRUIT GARDEN.

THE Pear Conference will probably lead to a more extensive culture of this popular fruit, and by cordons this can be done with remarkable facility. But we are bound to caution beginners not to be misled by published lists, for if anyone supposes that the list of the fifty Pears exhibited the greatest number of times contains the best varieties in cultivation they will be mistaken. Out of the fifty, experience has taught us to regard thirty as only second-rate sorts. Take, for example, the leading sort, Beurré Diel, of which 194 dishes were exhibited. It is undoubtedly very prolific of fruit, but we have never tasted a fruit of it that was worthy to take rank with our best Pears. It is, nevertheless, good. Of the fifty sorts enumerated, the best are Marie Louise, Winter Nelis,

Passe Colmar, Josephine de Malines, Doyenné du Comice, Beurré d'Aremberg, Beurré Hardy, Comte de Lamy, Knight's Monarch, Beurré d'Amanlis, Beurré Superfin, Géléral Todleben, Conseiller de la Cour, Thompson's, Napoleon, Glou Morceau, Van Mons Leon Leclerc, Huyshé's Victoria, Gansel's Bergamot, and Baronne de Mello. We have grown almost all the Pears recommended by the Committee, and have found many of them good, but not all of them, and such would probably be a very general result. No fruit is so fickle as the Pear. Soil, climate, seasons, all affect it, and a Pear that is excellent one year may be almost uneatable the next. But we nevertheless plant every new sort we can get, for there is nothing more interesting in a garden than a collection of cordon Pears, and the inferior fruit can be rendered delicious by stewing. Depend upon it there is a wide field among Pears for the fruit-grower to explore, and many treasures rich and rare to be discovered among sort's little known. Fondante de Charnéu is one of our most delicious Pears; the tree is very hardy, robust, and of free growth, but how seldom is it met with! The delicious little Dana's Hovey is another somewhat scarce sort, but it is making its way. Summer Beurré d'Aremberg is indispensable, and why do we not more often see those fine sorts Red Doyenné, Doyenné Defais, Jewess, and Comte de Flandre?

Greater attention should lead to better results. Really fine Pears are by no means so common as they ought to be; plenty of fine fruit of the best sorts must be our aim. The Pear Conference will do good work if it only shows something of our faults and failings, and points to the importance of a more general trial of sorts little known. To produce fine fruit we must have robust wood growth, and it is found to answer best if we first of all strive to bring our trees to an advanced state of development before suffering them to bear much fruit. They will then continue to yield full crops of really fine fruit if spur and branch growth is kept thinned and the fruit is also thinned. Deep, fertile, well-drained soil is indispensable to the production of high-class fruit. For cordons a border 4 feet wide and 2 feet deep answers perfectly, the whole of the border being made ready before the planting, as the cordons are only 18 inches apart and the roots soon meet and become interlaced. On lofty buildings they are trained vertically, on walls and low buildings diagonally, at an angle of 45°. It has been so clearly proved that fruit from trees trained against walls or buildings is superior to any other in appearance and flavour, that cordons should be planted in every available space, and it is surprising how many may be so planted if the sides of outbuildings are turned to account; and although it is undoubtedly picturesque to see Ivy-mantled walls and flowering climbers, yet most people prefer a supply of wholesome and delicious fruit.

FRUIT FORCING.

FIGS.—Early Trees in Pots.—When the terminal buds have fairly broken advantage may be taken of mild weather for increasing the temperature, as the Fig when fairly started into growth delights in a good heat, plenty of moisture, and all the light that can be secured to it. The increased temperature will be the more beneficial if it can be obtained from fire heat combined with solar influence by day in preference to making any great advance by night. The glass under any circumstances should be kept perfectly clean and as free as possible from condensed moisture by changing the atmosphere, especially in the early part of the day. Syringe the trees and walls twice a day according to the state of the weather, and damp the floors in the evening when the weather is dull and unfavourable to the afternoon syringing. See to the fermenting material, and if the heat exceeds 70° to 75° turn the material over as a means of reducing the bottom heat and setting moisture at liberty. Maintain the night temperature at 55° to 60°, give a little air at 65° when the morning gives promise of an increase from sunshine, and keep through the day under sun heat at 70° to 75°, closing sufficiently early for the house to run up to 80° after shutting up.

Early-forced Planted-out Trees.—If the house has been closed and a good body of fermenting material has been introduced but little fire heat will be required by night until the buds show signs of swelling, particularly when the trees have been started about the same time for a number of years; but in the case of young trees that have not been forced they will require a somewhat higher temperature to cause them to break freely. Syringe twice a day with tepid water or a few degrees warmer than that of the house, and if found necessary to repeat the watering at the roots use water at a temperature of 80° to 90°.

Succession and Late Houses.—Thin the wood that has reached the extremity of the trellis, wash the trees well with warm soapy water, and in the case of scale having appeared a wineglassful of petroleum to a gallon of water may be used with advantage. Thoroughly cleanse the woodwork and glass, and limewash the walls. Remove the old mulching if not already done, and supply a layer of good manure about 3 inches thick. Keep the house dry and cool.

Young Pot Trees.—Make preparations for potting young plants intended for forcing twelve months hence, using good fibrous loam, with a fifth of old mortar rubbish, and a little or sixth of thoroughly rotted cow dung. Train to a clean, straight, single stem, and allow the radiating shoots to form the foundation of a good pyramid. If wanted for early work another season they should be placed in gentle bottom heat by the middle of January in order that they make and properly ripen their growth by the early part of September, it being essential that they have a few weeks' rest before being again started into growth. Cuttings or eyes of kinds to be increased may now be inserted.

PINES.—In order to insure a supply of fruit during what is known as the London season, the plants which are to afford it should be brought together for the purpose of inducing them to come into fruit sooner than

they would under other circumstances. If this should be necessary provide a light pit or house, as the case may be, where they can have more heat both top and bottom than they would have in other quarters. This being effected, the fermenting material placed in, and the structure put into thorough going order, select a batch of plants from amongst the successional, choosing those which indicate signs of speedily showing fruit. These are quickly distinguished by an examination of the centre or heart of the plant. Those most likely to throw fruit soon will have few leaves in the centre, and it will be more open and stout than those which have growth to make before showing. The plants should be plunged in a bed constantly kept at about 90° to 95° at the base of the pots. If the plants are at all dry they should be copiously watered, but in no case ought water to be given until the plants become dry, which should be ascertained by the examination of each individual plant with the hand, and then a thorough supply given when needed. Maintain the top heat at 65° to 70° at night, and 5° more by day, with 10° to 15° rise from sun heat. Keep the atmosphere about the plants in an invigorating and genial state by syringing and damping as may be necessary.

PLANT HOUSES.

Allamandas.—One or more of the earliest rested plants should be started into growth without further delay if the flowers are required early in the season. It flowers profusely over a long period, and nothing is gained by starting them into growth late in the year unless flowers are required through the winter. If the plants to be started have not been pruned it should be done at once. The system to be practised depends upon whether the plants are large enough, and if so, they should be cut close back from where they started last year, leaving only one or two eyes on last season's wood. On the other hand, when necessary to increase the size of the plant, either for covering a trellis or for training up the roof of a stove, the shoots may be left several feet in length according to the ripeness of the wood and the space to be covered. If the plants are in pots turn them out and reduce the roots by one-half, and then, if dry, soak them in tepid water. After they have thoroughly drained they may be placed in the same size or larger pots. Drain the pots liberally, and press the compost firmly round the old roots. Care must be taken to leave plenty of room in the pots and a rich top-dressing during the growing season. After potting, plunge the plants in bottom heat that ranges about 80°, and where a night temperature of 65° is maintained. They will do without bottom heat, but they start more quickly by its aid. Syringe freely two or three times daily, but great care must be taken in watering them at their roots until they have taken possession of the new soil. Those in borders or tubs should have as much of the surface soil removed as possible, and fresh fibry loam and one-third of decayed manure supplied. One-seventh of manure will be sufficient to mix with the loam for those that are potted. If the loam is of a heavy nature sand may be added.

Bougainvillea glabra.—Plants that have been resting for the past two months in a temperature of 50° may now be pruned and started into growth for early flowering. In pruning cut out all the thin twiggy wood and leave the strong well-ripened wood instead. Nothing is gained by allowing the plants to become crowded with weak wood, for it will not flower. If those to be pruned are as large as required, whether grown in pots or planted out, the shoots may be spurred back and the main branches trained into position. These may be potted and top-dressed at pruning time the same as recommended for *Allamandas*, the same soil being also suitable. The conditions recommended above will be suitable for starting these plants into growth.

Stephanotis floribunda.—Plants with well-ripened wood that have been enjoying a good period of rest under moderately cool conditions may now be introduced into heat to start them into growth. If the plant to be started is in a good-sized pot, and it is not desirable to place it into a larger one, the surface soil should be removed and the plant top-dressed with equal portions of loam and manure. Above this a good surfacing of cow manure that has been stacked for some months may be placed and the ball of the plant well soaked with tepid water. Plants in large pots well filled with roots generally make short sturdy growths and flower profusely if grown in a light position close to the glass. If, however, the plants need potting they should have as small a shift as possible. The pots to be used must be clean and well drained. A portion of the old soil must be picked out carefully from amongst the roots without disturbing them more than possible. The soil used should be pressed firmly round the old ball, and may consist of fibry loam, one-third of peat and about one-seventh of manure, with a liberal dash of coarse sand added. If possible, plunge the pots or arrange them close to the glass, so that when they commence growing the new shoots can be trained close under the glass and exposed to every ray of light and sunshine. This plant should be thoroughly cleaned, if mealy bug or other insects exist upon it, before introducing it into heat.

appointed, and it seems a great pity that this rule does not hold good with us, as children are very much interested in anything that belongs to natural history. The Art and Science Department at South Kensington recognise bee-keeping as one of the subjects of minor agriculture, but it is rather an unknown land to most of the candidates.

How, then, can we best promote it? By articles in the various journals and by oral instruction; and we confess that we consider the latter the best means for starting people in bee-keeping, though when they once commenced the study nothing can be more valuable to them than to increase their knowledge by reading the various articles which appear in this and other journals; for although they may be rather puzzled by reading totally different views of the same subject by equally competent masters in the art, still they have to remember to prove all things and follow the best.

We can well remember the first time we tried to make an artificial swarm and what a dismal failure it was, but after having once seen it done by a bee-master we had no further difficulty. It is for this reason that the various shows which now take place all over the country, and perhaps still more the visits of experts to the various apiaries, have done so much good in advancing bee culture amongst us; and whether they belong to the British Bee-keepers' Association or not, they practically carry out its object, and it was with the view of having competent men to teach that they started the plan of having expert examinations.

Having had some experience as an examiner, we assert that no one who thoroughly understands practical bee-keeping can fail to pass the examination for the third-class certificate, though he may be unable to obtain the second or first-class certificates. All that is required of the candidate for the practical examination is to show his knowledge of manipulation, and as much of the theory as is contained in any of the elementary handbooks which can be obtained for one or two shillings. He has not to write his answers, as the whole examination consists in answering by word of mouth, so as to allow thousands of cottage bee-keepers who thoroughly understand apiculture, but who cannot explain it by writing, to pass the examination, and no one can get a second or first-class certificate without having first passed the practical examination. The second-class examination is a written one, and the candidate has to be well up in the theory of bee-keeping, while the first-class certificate is only given to those who know their subject thoroughly, and can give a lecture on any subject connected with bee-keeping which has been chosen by the examiners.

Last summer we had to reject two candidates, not because they did not know the life-history of the honey bee, but because they did not know how to handle the bees. We asked one candidate to find the queen in a bar-frame hive. He commenced by nearly suffocating them with the smoker, and having taken off the top carpet carefully, placed the smoker on the hive, and then, in trying to lift out one of the bars, knocked it down, crushing several of the bees, and, not content with this, he killed several of the bees when replacing the bars. Having failed to find the queen, though she was there, he tried to find her by shaking off the bees in the empty part of the hive at the back, and not finding her there, was going to look for her on the floorboard, and if we had not prevented him would have stepped on the queen, which was on the ground outside the hive, he having shaken her off the bar on the ground instead of into the hive. Needless to say, this candidate did not pass, though no doubt he still considers that he knows more about the practical part of bee-keeping than all the first-class experts as well as—
A SURREYSHIRE BEE-KEEPER.

THE BEE-KEEPER.

EDUCATION IN BEE-KEEPING.

In several countries bee-keeping is one of the subjects taught in the elementary schools, and the masters have to show a fair knowledge of this subject before they are

USEFUL HINTS.

AFTER a few days and nights of rather severe frost we are again enjoying mild weather. Bees are abroad in great numbers searching after pea meal, and many of them sipping the water from a box of peat. The withdrawal of a sliding floor brought

to view on the top of the *débris* numerous flakes of wax, proving that breeding has started. All my hives, except those in deep ones, have aired themselves; proving again that bees are more quiescent in deep but narrow hives than when in shallow ones.

THE MEMORY OF BEES.

On the morning of the 17th the thermometer registered 50°. The air was resounding with the hum of many bees, a fitting opportunity to give a nucleus containing about a gill of bees their freedom, as already a few were returning from the window to their little hive of 6 inches square by 4 inches deep. It stands upon the inside sill a foot from the glass, and has stood there for nearly two months with a loss of not more than four bees. Six weeks before I set them outside with the intention of giving them an airing, when a number of them flew out, but the sun became obscured and they immediately returned; so I removed them indoors, where they have been since, and where they have partly aired themselves. I now lifted the sash, and in a few minutes they made a rally, returning to their hive; but I observed a few of them flying about the place where I had previously attempted to let them have an airing, though the time did not occupy more than five minutes altogether, and the bees were not many seconds out nor many yards from their hive, showing how retentive their memory was. The moral is, Never shift bees short distances after summer weather is gone. One important thing I have omitted, but mention it now. A good deal of the shearings of the combs were lying in the front of the hive, which adhered to the bees, annoying and distressing them, I cleared away, which if I had failed to do would have caused the loss of many bees, as they will not return to their hive until their toilet is completed, and during wintry weather this cannot be performed before they are chilled. How valuable, then, are perforated floors that allow all *débris* to fall through, and keep the hive airy and free from damp.

BEE HOUSES.

That so few bees and their queen can live in good health and comfort during so cold a season is due entirely to the comfort afforded by the shelter of the house and free from draught by keeping the window closed unless when the bees are airing. This is all the difference between the right and the wrong ways of preserving the bees in health, or having them diseased, and thereby depopulating the hive. When kept in bee houses guard against draught by moveable side partitions or packing, as well as underneath, and have shutters, so that the bees may be confined in darkness, free from draught, but having plenty of air during severe weather, and better at night too; opening these only when the day is favourable until the season is advanced, so far that the bees will be unaffected by any change of the atmosphere.

FEEDING.

Where bees were attended to and properly prepared for the winter campaign no manipulations are necessary. If, however, any hive is in imminent want, prepare some syrup of a moderate thickness. Withdraw one or more combs from the hive, and first on the one side then on the other fill with the syrup, pouring it from a spouted vessel at a good elevation, then replace and cover up as speedily as possible. All that trouble may, however, be obviated if frame feeders are used, as the syrup is never away from the bees, and there being so little of it damp is not engendered, while the waxed trough is more natural than any other feeder. Straw hives will require to be held at an angle if the operation is necessary with them, or candy may be supplied, but syrup is better if properly applied.

DAMP FLOORS.

It is to be hoped that there will be few of these, especially amongst the hives of the readers of this Journal; but, if so, substitute clean dry boards at once.

FLOWERS.

It will be well from this onwards to take a note of all flowers that are most frequented by the bees and which yield most pollen, propagating the best for another season. *Arabis alpina* is a great favourite, yielding both honey and pollen, but of this there are many varieties. I have a seedling that never dies from the severest frosts; besides, it is more profuse in flower and lasts longer than the original variety. It continued in flower this year from February till October. Then I have another variety that is in flower now, and has been these two months past, which I would have preferred had it been a little earlier. Doubtless garden flowers can only assist the bees when there is a paucity of them in the fields, and this occurring in spring is the most necessary time to have them in flower and of the best varieties.

Nevertheless, it is both pleasing and interesting during the whole year to see the bees working on the garden flowers, and when these are absent much of the pleasure of bee-keeping is lost. To have flowers all the season for the bees should be the study of all. Some, however, have not ground to keep up a succession. Perhaps my plot of undug and untrod flower garden may be copied by some. It scarcely ever wants a flower and is often very pleasing. It is covered now with *Sedum acre aureum*, the plat is fringed with white *Primulas* and other low-growing plants of a hardy nature. The autumn *Colchicums* are still in bloom and have been for two months. I do not remember these lasting so long in years past. When January comes the *Aeonite*, *Snowdrop*, and *Crocus* appears, followed by the *Scillas*, *Grape Hyacinths*, *Jonquils*, and *Tulips*; here and there a Dutch *Hyacinth* and other miscellaneous bulbs keeps up the display till May, when the *Hyacinthus Nonscriptus* of three varieties, white, pink, and blue of many shades, give pleasure to both bees and bee-master. When these are past several varieties of large-flowered but low-growing *Campanula* push up and spread, continuing in bloom till August. Meanwhile the *Sedum* has been kept under by pruning and by the action of its taller neighbour, and wherever a bare patch appears an annual of some sort or other is dibbled in, and thus the succession of flowers are kept up the whole year without much labour or expense. During the months of September and October the *Sedum* covers the surface, which sets off to great advantage and supports the slender stalks of the *Colchicums* lovely, yet modest, which at the time when other flowers are disappearing are very acceptable.

—A LANARKSHIRE BEE-KEEPER.

THE BEST HIVE IN CREATION.

Will you kindly tell me if the "Best Hive in Creation" is to be seen in London? Messrs. Neighbour & Son advertise the "Renfrewshire Stewarton;" is that "the best" according to "A Lanarkshire Bee-keeper's" idea or not? Your reply will greatly oblige.—L. BELSHAM.

[I cannot say whether Messrs. Neighbour have samples of the above hive at present; if not, they are likely to have them in the new year. Any hive can be used in the case, but square hives are more suitable than octagonal ones. The "Renfrewshire Stewarton" is one of the best type, and considered by many the best of all. One thing certain is that tiering hives are rapidly coming into more repute, and with persons that did all they could some years ago to disparage them in the estimation of those beginning bee-keeping. I may add that to get full benefit from the hive possessing reversible frames, it should be constructed so that the frames can be manipulated without interfering with the supers. This is accomplished by having the hive to open on the side. The frames rest upon a square frame made of angled iron, which slides upon the slide proper. For the purpose of giving slack between the supers and the hive, a wedge is wrought upon the under side of the outside of the frame, and another fixed on the inner, or side opposite the opening end. By this arrangement, whenever the bar on which the frames are suspended is drawn back a little, it drops and rises again when pushed in, similar to self-acting floors as lately described.—LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

Harrison & Sons, Market Place, Leicester.—*General Seed Catalogue for 1886 (illustrated).*

H. Cannell & Sons, Swanley.—*List of Flower Seeds.*

Ireland & Thomson, 20, Waterloo Place, Edinburgh.—*Catalogue of Vegetable and Flower Seeds.*

Laing & Co., Forest Hill, London, S.E.—*Catalogue of Seeds, Nouveltes, Beyonias, &c., for 1886.*

J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex.—*Catalogue of Garden Seeds for 1886.*

G. H. Wilkinson, Commercial Road, Maritzburg, South Africa.—*Catalogue of Trees, Seeds, and Plants.*



TO CORRESPONDENTS

* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never

send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Errata.—In the eighth line from the bottom of the article on "Hotbeds," page 555, after the words "supplying fresh material," read "cover the frames at night," &c., and in the fourth paragraph, second line, read "sow the seeds."

Seedling Double Primula (Young Gardener).—It is not distinct from other double varieties already in cultivation.

Early and Late Peaches and Nectarines (W. W.).—Two good early Peaches are Hale's Early and Royal George. Late, Bellegarde and Sea Eagle. Nectarines: Early—Lord Napier and Elruge; late—Pine Apple and Victoria. These will give a succession of fruit, which is, we presume, what you require.

Golden Meg Merrilees Chrysanthemum (T. W.).—We are not aware that a golden sport from the popular Meg Merrilees has been exhibited by anyone. We trust you will be able to fix the sport, as it can scarcely fail to be a valuable acquisition. A good grower, who has carefully examined florets of both the parent and sport, describes them as "exactly alike in form, the colour of the latter somewhat like Thunberg, but a little softer, therefore all the more valuable, as being distinct."

Early Radishes (E. Wilson).—You say you have "plenty of leaves but no glass." Make a bed 3 feet or so high, and of any convenient size, covering it with 5 or 6 inches of light rich soil, supported by boards fixed on edge and resting on the bed like a rough frame. With a few strong laths laid across the bed for sustaining mats or straw shelters, and these taken off in favourable weather, you may have excellent Radishes long before they could be drawn from the open ground. In the London market gardens Radishes are accelerated by covering the open ground beds lightly with straw, which remains till the plants appear, and is then drawn off with rakes on fine days, and thrown on at night. Acres of Radishes are thus managed, and early crops are profitable.

Cannas (A. B. G.).—As you have only a greenhouse and frame you will err by starting the plants into growth so soon, as they would inevitably become too tall, and consequently tender, before you could remove them safely. They had better remain dry, or nearly so, until the beginning of April, then watered. They will then start freely, and in about a month will be dwarf and sturdy for placing in the frame. They will there need protection, and if well attended to will be in good condition for planting out towards the end of May or early in June, according to the position they are intended to occupy and the weather.

Imported Dendrobiums (D.).—The system you refer to can be successfully followed, but one which some of the most skilled Orchid growers prefer is potting the plants in a mixture of potsherds and charcoal. The principal advantage of this method is that water can be more freely supplied with less danger than in the other way. Imported plants require much care in this respect, for if they have suffered much in transit and are weak they are liable to decay before growth commences. You do not say from what district they have been obtained, but presuming they are East Indian forms, it will be better not to place them in a higher temperature at first; 50° to 55° will be sufficient until some signs of growth are perceived.

Keeping Grapes (C. H. Contich).—Your question—"Would thorough ripe late Grapes cut and bottled by the end of September keep well?" appears to be more interesting than practical. We have never found such standard late varieties as, say, Lady Downe's and Gros Colman "thoroughly" ripe—that is, with their flavour developed by the end of September, nor can we conceive how they could be profitably forced to be in the best condition then. If late Grapes that appear ripe were cut in September we should not consider they would improve in anything like the same degree as if left on the vines for two or three months longer, nor should we expect them to keep so long in consequence of the limited quantity of saccharine matter that they then usually contain. We have not tried the experiment suggested, and we shall be glad to hear what our readers have to say on the subject.

Cabbages Clubbing (E. T. H.).—The best thing you can do in order to prevent clubbing is to dig the ground deeply during suitable weather in the winter, and give it a good dressing of fresh lime in early spring, at least a month before the ground is planted. You may safely use for a dressing as many barrowfuls of lime as you would of manure if manuring the ground liberally. This should be wheeled on, a barrowful in each heap, then reduced to powder by applying a little water to it. When fallen to dust it may be spread on the surface and dug in, and the ground afterwards cropped in the usual way. The lime can be reduced to powder by covering the heaps with soil until they fall, but this takes up more time, and the weather may prove bad before the digging can be done, therefore the plan above alluded to is usually the best. During winter, or at any season when the ground is clear, it should be trenched as deep as the land will allow to more thoroughly incorporate the lime with the soil. As the work of trenching proceeds care must be taken to mix the lime and soil thoroughly, and not place the bulk of the former at the bottom of the trench as is often done in trenching. If labour is an object apply half the quantity of lime to the surface, and the remaining half may be applied again to the bottom soil when brought to the surface by trenching, but this should not be done until spring if practicable. This saves the labour of mixing the soil and lime well together when trenching; but if your land has not been trenched for years the mixing of the top and bottom soil should be practised. If you follow out this plan and apply a little lime yearly you will be able to grow Cabbages successfully on light soil.

Parsley Failing (Idem).—Parsley often fails when sown in the spring. We have experienced exactly the same difficulty as you describe, and now rely upon a supply of Parsley from seed sown from the last week of June to the end of the first week in the following month. For winter use we sow at the same time and cover with a frame in autumn, relying upon that sown outside for the following spring and summer supply. We have found it best to sow on ground that was well manured for a previous crop, working no fresh manure into the ground before the seed is sown. A week or ten

days before sowing the seed we work into the ground some soot and lime, and by this means succeed fairly well. When the plants outside do not look so prosperous as usual we sow a box or two of seed under glass in early spring and prick the plants out when large enough on a slight hotbed. About 4 or 5 inches of old potting soil is pressed firmly upon the surface of the bed, and in this the plants grow strongly, even luxuriantly, and never fail to give a good supply. The hotbed for a time is covered with a frame until the plants are established and growing freely, when they are hardened and the frame removed. We have not grown the variety to which you refer. If it is a strong grower it will be equally good both for summer and winter use. You had better sow in different portions in the garden, and you will possibly find a place in which the plants will flourish. For flavouring purposes the common or wild Parsley is as good as any, but not for garnishing, and it will grow freely in soil in which the curled varieties are liable to fail. This hint may perhaps be useful to others who experience difficulty in maintaining a full supply of this indispensable herb.

Concrete Walks (S. T. E.).—These if well made are both comfortable and durable. Late in March and all through April and May is a good time to make them; 4 inches, or, at most, 5 inches is deep enough for any walk whatever. The bottom should be formed into the same shape as the walk is to be finished, or say 2 inches higher in the middle than at the sides, before any of the materials are laid on. The old way of draining the centre of a walk, by drawing in the water from right and left, is radically bad in principle, and will not answer for the concrete system at all, as the drier the bottom the firmer the walk, and the longer it will endure. On very heavy clay land, where chalk and gravel are dear, burnt clay will make an excellent and enduring bottom to a walk; 3 inches of the burnt clay should first of all be put in the bottom and be well rolled in dry weather, then 2 inches of the concrete on the top, this to be well rolled also, and to be heavily watered the last thing in the evening; then the following morning a very thin layer of fine sifted gravel of good colour should be laid on the top of the damp concrete, and the roller passed over it several times until the good gravel is thoroughly embedded in the concrete and forms part of it, as it were. When the concrete is very wet and the good gravel over it too thinly put on, the weight of the roller will cause the white juice of the concrete to come up through the gravel, and that is the best sign. To hide that, put on a little more gravel and roll again, and when the whole is dry in two or three days a pick could hardly break the surface. On light dry lands 4 inches is deep enough for walks, and the first 2 inches at the bottom may be laid with any of the rough materials, without chalk or lime, and the next 2 inches in concrete. The roller will press this sufficiently to allow a slight coat of clean good gravel on the top, without the walk being more than 4 inches deep in the whole. The concrete is made with any coarse gravel, with the largest stones taken out or broken, five parts or loads, and one part or load of fine chalk, all mixed well together and put on the walk, then well watered. In dry weather this is soon dry enough for the roller. The usual way is to begin this in the morning, and water every three or four yards in length as soon as the mixture is got in, and so on till towards four o'clock in the afternoon, when the whole is ready for the roller; or if it is not dry enough that day, to keep on till six o'clock, and roll it the first thing next morning, and then put the fine gravel on and roll again immediately. If the concrete is too wet it will stick to the roller; and after rolling, if it is allowed to get dry before the colouring gravel is put on, the fine gravel will not stick to the concrete, so that the state of the weather has much to do with the perfect success of the operation, and wet weather is much against it.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. S., Leicester*).—It is probable that the plant to which you allude is *Lantana brasiliensis*, from which an alkaloid has been obtained possessing qualities somewhat like quinine. (*B. R., Southampton*).—1, *Adiantum trapeziforme*; 2, *A. macrophyllum*; 3, *A. decorum*; 4, *A. farleyense*. (*W., Surrey*).—The Orchid is a variety of *Dendrobium Wardianum* of good size and colour.

COVENT GARDEN MARKET.—DECEMBER 30TH.

Market quiet, with light supplies.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	10 to 3 6	Oranges	100 4	0 to 6 0
" Canadian ..	barrel	10 0 12 6	Peaches	per doz.	0 0 0 0
" Nova Scotia ..	"	10 0 12 6	Pears, kitchen ..	dozen	0 6 1 0
Cobs, Kent	per 100 lbs.	0 25 0	" dessert	dozen	0 4 1 6
Figs	dozen	0 0 0 0	Pine Apples English ..	lb.	1 0 1 6
Grapes	lb.	1 0 3 6	Plums	½ sieve	0 0 0 0
Lemons	case	15 0 21 0	St. Michael Pines ..	each	2 0 6 0
Melons	each	0 0 0 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 6 1 0	Mustard and Cress ..	punnet	0 0 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 9 1 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	2 6 3 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	0 0 0 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 3 0 4	Rhubarb	bundle	0 0 0 0
Cauliflowers	dozen	2 0 3 0	Salsify	bundle	1 0 0 0
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	dcz. bunches	2 0 4 0	Seakale	per basket	1 6 2 0
Cucumbers	each	0 0 0 0	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	2 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 6 0 10
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0



AGRICULTURAL PROGRESS.

THE cultural details for laying down land to permanent pasture given in our last paper had reference only to foul land; and although it is neither the only nor best way of doing this work from a general point of view, yet it is undoubtedly the best course to take in the treatment of land that at one time would have been left idle as long fallow for a year. To farmers who intend laying down land next spring we say, Adapt your plans to the circumstances in which you are placed, only remember clean land is a *sine qua non*, and if your corn land is clean then by all means sow the mixture of Grasses and Clovers with a corn crop, for we can hardly recommend anyone to lose a year's crop in this work, nor is it necessary. It was only a week or two ago that we saw an exceedingly good piece of young pasture, the seeds of which were sown with Wheat last year. The yield of grain was fully 48 bushels per acre, and that, too, after close feeding off of the Wheat plant by sheep in spring. The gentleman upon whose estate we saw this admirable example of agricultural progress, has been actively engaged in laying down farm after farm in permanent pasture for the last twelve years, and an excellent pioneer is he in this work. He never allows such slovenly practices as letting land go out of cultivation and become just one bed of couch grass: he will have neither that nor any haphazard growth of native Grasses. The land has been cleaned and thoroughly stirred by steam cultivation, and then the Grass mixture has been sown either with or without a corn crop, as appeared most desirable. There has been no blind following of set rules, but each farm—or rather each field—has been treated on its merits. Winter Oats were sown in several fields with excellent results, full crops of straw and grain being obtained after the flock had been turned in to feed off the Oats closely in spring, the Grasses and Clovers coming perfectly well afterwards. Some of the young pastures have been mown from the first, but then this has been done intelligently, due care being taken to always mow early just as the Grasses were coming into bloom, and before there was any chance of seed development. All the seed has been procured from the best sources, no doubtful sample being allowed to pass muster. It may be mentioned that for the sowings of last spring all the leading seedsmen were invited to supply samples of seed subject to analysis by Professor Carruthers, but only a very few found themselves in a position to respond to it. This fact is mentioned as tending to confirm our statement of the extensive prevalence of adulteration in many of the mixed samples still brought upon the markets.

At each homestead upon the estate where such good work is being done, all the barns and outbuildings are being repaired and enlarged in readiness to afford shelter to the various flocks of sheep, for this estate will eventually become one huge sheep farm, in combination with the growth of herbage for hay and silage. No silos have been built, as preference is given to silage stacking, which next season will probably be tried extensively. The mention of sheep reminds us of the importance of the careful grazing of young pastures for the first two years. Sheep ought never to be turned into them then to roam at will, but to be passed over them in folds as often as becomes necessary, except in wet weather, when they should be kept off altogether, as trampling while the land is soft injures the young seeds. Nor must they be kept in the fold so long as to eat off the young growth too closely; but be passed over the entire pasture quickly, with plenty of wholesome nourishing dry food in troughs, no folding to be done, or sheep let on the young seeds after October till after the

second year. Some careful farmers will not suffer an old sheep to come on the seeds at all in the first year, only lambs being used for fear of harm being done to the plants. By the exercise of care in this matter we promote the growth of the young herbage, and we enrich the soil in the most economical way, avoiding heavy bills for manure. If sown with a corn crop the young seeds have the benefit of the dressing of artificial manure, which we have repeatedly advised to be given early in spring. It is really a half dressing for winter corn, the other half having been given in autumn. The half dressing per acre is $\frac{1}{4}$ cwt. nitrate of potash, $\frac{3}{4}$ cwt. nitrate of soda, $\frac{1}{4}$ cwt. steamed bone flour, $\frac{1}{4}$ cwt. superphosphate, and $\frac{1}{4}$ cwt. coprolite. For sowing with Grass seeds alone in spring or summer, 5 cwt. per acre of fish guano is frequently recommended. We have not tried it, but the gentleman to whose interesting work reference has been made has used it, and he has found the results satisfactory. It is by no means intended to recommend the laying down of the whole of a farm to permanent pasture; there must still be a fair proportion of arable land for the growth of roots and corn for feeding purposes, and for such green crops as Rye, Tares, Cabbage, and Thousand-headed Kale. About a hundred acres will be reserved for this purpose upon the estate we have mentioned.

(To be continued.)

WORK ON THE HOME FARM.

Many odd jobs are now in hand, such as trimming the sides of roads, carting gravel for repairs, tiles for drains, faggots, and timber. We seize every opportunity of doing all such extra work now, and hope to clear off arrears before spring corn sowing comes round again. There is still some ploughing to be done, but we only turn to this in favourable weather. Lime was also carted from the kiln during the frost, and we are now having our heaps of road sidings mixed with caustic lime, care being taken to turn over and mix the heap as the lime becomes slaked. Several men are now engaged in planting Holly, Yew, Box, Mahonias, and Laurel for game covert among the trees in ornamental belts and clumps; others are cutting down trees and underwood for faggots, poles, hedging wood, and other purposes. Hazel is now much in demand for making hoops, and of timber we find a prompt sale for Oak, Ash, Beech, and Willow. We have been cutting down many trees for estate purposes, especially for field gates and posts. Some large logs of Poplar will eventually be turned to account for weather-boarding, laths, and a variety of purposes inside buildings. It answers well for sides and doors of lodges if all exposed parts are at once tarred. The tar is put on hot and well rubbed in. We get tar from the gasworks at 3d. per gallon, and we are having every part of all wooden or boarded structures that is at all exposed to the weather well tarred. The condition of asphalt roofs should be looked into and hot tar put on where necessary, finely sifted sand being sprinkled thickly upon the tar immediately after it is applied to the asphalt. We have extensive repairs being done to farm buildings. This is work requiring special study, affording as it does scope for skill in improvements and any necessary rearrangements. Soundness, strength, connection, unity, and utility are among the chief features demanding close attention in such work. We may add that economy must not be lost sight of, for costly farm buildings cannot be undertaken lightly now.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. $51^{\circ} 32' 40''$ N.; Long. $0^{\circ} 8' 0''$ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1885.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
December.										
Sunday	20 30.150	43.5	41.5	S.E.	40.8	47.4	37.6	47.8	36.8	—
Monday	21 30.152	45.6	44.7	S.W.	41.4	48.7	42.9	50.4	34.9	—
Tuesday	22 30.275	44.0	42.8	N.E.	42.3	47.8	43.7	50.3	41.7	—
Wednesday	23 30.576	32.7	31.6	N.	41.8	43.7	31.3	49.6	26.6	—
Thursday	24 30.505	31.4	29.7	N.E.	40.3	39.8	30.4	52.7	22.3	—
Friday	25 30.422	32.5	31.8	S.	39.0	41.6	26.6	40.8	22.1	—
Saturday	26 30.392	39.8	38.9	N.	38.7	43.1	32.2	43.5	31.3	—
	30.353	38.5	37.3		40.6	44.6	35.0	47.9	30.8	—

REMARKS.

- 20th.—Dull and dark all day.
 21st.—Damp, dull, and warm.
 22nd.—Dull and hazy; cold clear night.
 23rd.—Fine bright morning; cloudy afternoon, much colder.
 24th.—Cold and bright till noon, foggy afterwards.
 25th.—Frosty morning, damp and dull after.
 26th.—Dull and overcast throughout.

A dull rainless week, with almost precisely the average temperature, and very high barometer.—G. J. SYMONS.

